

# **GANNON UNIVERSITY**

## **Undergraduate Catalog 2017-2018**

109 UNIVERSITY SQUARE ERIE, PENNSYLVANIA 16541  
1-800-GANNON-U or 814-871-7240  
[www.gannon.edu](http://www.gannon.edu)

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# Contents

Gannon: A Closer Look ..... 3

Admission to the University ..... 11

Financial Facts ..... 18

Student Life and Support Services ..... 25

Degree Requirements, Academic Awards ..... 43

Academic Policies and Procedures ..... 46

Special Programs ..... 62

Liberal Studies Core Curriculum ..... 67

College of Engineering and Business ..... 78

College of Humanities, Education and Social Sciences ..... 177

Morosky College of Health Professions and Sciences ..... 343

Trustees, Administration, Faculty ..... 516

Index ..... 561

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## ACCESSIBILITY STATEMENT

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**Advocate for Campus Accessibility**

Dr. Harvey Kanter is the 504/ADA coordinator for students with disabilities who require accommodation of facilities, programs, or services of the University.

Students seeking information or assistance in any matter regarding accessibility or accommodations should contact him promptly upon admission to the University:

Harvey Kanter  
Disability Student Services  
Gannon University  
109 University Square  
Erie, PA 16541  
(814) 871-5522 / [kanter002@gannon.edu](mailto:kanter002@gannon.edu)

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## GANNON UNIVERSITY POLICY OF EQUAL OPPORTUNITY

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It is the policy of Gannon University to affirmatively implement equal opportunity to all qualified applicants and existing students and employees. In administering its affairs, the University shall not discriminate against any person on any basis prohibited by law. All aspects of employment including recruitment, selection, hiring, training, transfer, promotion, termination, compensation and benefits shall conform to this policy. All aspects of student affairs and education of students including recruitment, admissions, financial aid, placement, access to facilities, student discipline, student life and student employment conform to this policy.

Gannon University does not discriminate on the basis of sex in its education programs and activities. Gannon University will protect the rights of all students and employees to work and study free from harassment, including sexual harassment and/or sexual violence.

Inquiries concerning the application of Title IX and other non-discrimination policies are to be referred to the Gannon University Title IX Coordinator, Robert J. Cline, Director of Human Resources, Student Services Building, 109 University Square, Erie, PA 16541-0001; 814-871-5615; [cline001@gannon.edu](mailto:cline001@gannon.edu).

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The information in this catalog is considered to be descriptive in nature. The University reserves the right to make any changes in the contents of this catalog or in the documented course of study that it deems necessary or desirable. When changes are made they will be communicated to the appropriate students.

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# Gannon: A Closer Look

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## MISSION STATEMENT

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Gannon is a Catholic, Diocesan university dedicated to excellence in teaching, scholarship and service. Our faculty and staff prepare students to be global citizens through programs grounded in the liberal arts and sciences and professional specializations. Inspired by the Catholic Intellectual Tradition, we offer a comprehensive, values-centered learning experience that emphasizes faith, leadership, inclusiveness and social responsibility.

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## ACADEMIC ACCREDITATION

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Academic accreditation is based on accepted qualitative and quantitative standards of excellence for evaluating the quality of education offered at the institution. Evaluation and subsequent accreditation include such areas as the educational objectives and achievements, academic programs, admissions practices, student personnel and welfare services, institutional study, training and experience of instructional staff, financial stability, and laboratory and library resources.

Gannon University is accredited by:

**The Middle States Commission on Higher Education**

3624 Market Street, Philadelphia, PA 19104

(267)-284-5000, FAX (215) 662-5501, [www.msche.org](http://www.msche.org)

The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

Academic Programs of Gannon University are accredited by:

**Pennsylvania Department of Education**

333 Market Street, Harrisburg, PA 17126-0333

(717) 783-3750 FAX (717) 783-0583

**Florida Department of Education**

325 West Gaines St., Suite 1414, Tallahassee, FL 32399-0400

(850) 245-3200, [www.fldoe.org/cie](http://www.fldoe.org/cie)

**ABET, Inc.**

(See individual program descriptions for details on the specific accrediting organizations that apply)

415 North Charles St, Baltimore, MD 21201

(410) 347-7700, FAX (410) 625-2238, [www.abet.org](http://www.abet.org)

**Accreditation Council for Occupational Therapy Education**

4720 Montgomery Lane, Bethesda, MD 20824-1220

(301) 652-2682, FAX (301) 652-1417

**Accreditation Review Commission on Education for the Physician Assistant**

12000 Findley Road, Suite 150, Johns Creek, GA 30097

(770) 476-1244, FAX (770) 476-1738

**Accreditation Council for Business Schools and Programs**

11520 West 119th Street, Overland Park, KS 66211

(314) 872-8481, FAX (314) 872-8495, [www.acbsp.org](http://www.acbsp.org)

**Commission on Accreditation in Physical Therapy Education**

1111 North Fairfax Street, Alexandria, VA 22314

(703) 684-2782 FAX (703) 684-7343, [www.apta.org](http://www.apta.org)

**Commission on Accreditation for Allied Health Educational Programs**

35 East Wacker Drive, Suite 1970, Chicago, IL 60601-2208

(312) 553-9355, FAX (312) 553-9616, [www.caahep.org](http://www.caahep.org)

**Commission on Collegiate Nursing Education**

One Dupont Circle, NW, Suite 530, Washington, DC 20036-1120

(202) 887-6791

**Commission on Accreditation for Respiratory Care**

1701 W. Euless Blvd., Suite 300, Euless, TX 76040-6823

(817) 283-2835, FAX (817) 354-8519, [info@coarc.com](mailto:info@coarc.com)

**Council on Social Work Education at the Baccalaureate Level**

1701 Duke St, Suite 200, Alexandria, VA 22314

(703) 683-8080 FAX (703) 683-8099, [www.cswe.org](http://www.cswe.org)

**The Joint Review Committee on Education in Radiologic Technology**

20 North Wacker Drive, Suite 2850, Chicago, IL 60606-3182  
(312) 704-5300, FAX (312) 704-5304

Gannon University holds membership in the following associations:

**ACPA – College Student Educators International****American College Personnel Association / National Center for Higher Education**

One Dupont Circle, NW, Suite 300, Washington, DC 20036  
(202) 835-2272, FAX (202) 296-3286

**American Association of Colleges of Nursing**

One Dupont Circle, Suite 530, Washington, DC 20036  
(202) 463-6930, FAX (202) 785-8320, [www.aacn.nche.edu](http://www.aacn.nche.edu)

**American Association of Colleges for Teacher Education**

1307 New York Avenue, NW Suite 300, Washington, DC 20005-4701  
(202) 293-2450, FAX (202) 457-8095, [www.aacte.org](http://www.aacte.org)

**American Council on Education**

One Dupont Circle, NW, Suite 800, Washington, DC 20036  
(202) 939-9300, FAX (202) 833-4760, [www.acenet.edu](http://www.acenet.edu)

**ASACCU – Association for Student Affairs at Catholic Colleges and Universities****Siena College**

515 Loudon Road, Loudonville, NY 12211  
(518) 783-2328

**Association of Independent Colleges and Universities of Pennsylvania**

101 North Front Street  
Harrisburg, PA 17101-1405  
(717) 232-8649; Fax (717) 233-8574, <http://www.aicup.org/>

**College Entrance Examination Board (The College Board)**

45 Columbus Ave, New York, NY 10023-6992  
(212) 713-8000

**Middle Atlantic Association of Colleges of Business Administration**

LaSalle University, 1900 W. Olney Avenue, Philadelphia, PA 19141  
(215) 951-1040, FAX (215) 951-1886

**Pennsylvania Association of Colleges and Teacher Educators**

56 South Third Street, Hamburg, PA 19526  
(484) 577-4845

Gannon University is approved by:

**American Bar Association**

321 North Clark Street, Chicago, IL 60654  
(312) 988-5000, [www.abanet.org](http://www.abanet.org)

**State Board of Nursing of the Commonwealth of Pennsylvania**

PO Box 2649, Harrisburg, PA 17105-2649  
(717) 783-7142, [www.st-nursestate.pa.us](http://www.st-nursestate.pa.us)

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## ACADEMIC PROGRAMS

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	Degree	Page
<b><u>College of Engineering and Business</u></b>		
<b>Dahlkemper School of Business</b>		
Business Administration .....	Associate of Science .....	.82
Business Administration .....	Bachelor of Science in Business Administration .....	.81
<i>With majors in:</i>		
Accounting .....	Bachelor of Science in Business Administration .....	.87
Entrepreneurship .....	Bachelor of Science in Business Administration .....	.101
Finance .....	Bachelor of Science in Business Administration .....	.90
Healthcare Management .....	Bachelor of Science in Business Administration .....	.92
International Management .....	Bachelor of Science in Business Administration .....	.94
Management .....	Bachelor of Science in Business Administration .....	.95
Marketing .....	Bachelor of Science in Business Administration .....	.102
Risk Management and Insurance .....	Bachelor of Science in Business Administration .....	.97
Sport Management and Marketing .....	Bachelor of Science in Business Administration .....	.104
Supply Chain Management .....	Bachelor of Science in Business Administration .....	.99
<b>Engineering and Computer Science</b>		
Computer Science .....	Bachelor of Science .....	.105
Electrical and Computer Engineering .....	Bachelor of Science in Electrical Engineering .....	.119
Environmental Science .....	Bachelor of Science .....	.136
Environmental Engineering .....	Bachelor of Science .....	.139
Industrial Engineering .....	Bachelor of Science .....	.148
Information Systems .....	Bachelor of Science .....	.154
Mechanical Engineering .....	Bachelor of Science in Mechanical Engineering .....	.157
Biomedical Engineering .....	Bachelor of Science in Biomedical Engineering .....	.168
Software Engineering .....	Bachelor of Science .....	.172
<b>College of Engineering and Business Minors</b>		
Business Administration .....		.83
Computer Science .....		.119
Earth Science .....		.142
Information Systems .....		.157

*Business Minors are not open to students majoring in Business Administration*

**College of Humanities, Education and Social Sciences****School of Humanities and Social Sciences**

Advertising Communication .....	Bachelor of Science .....	179
Communication Arts, Electronic Media .....	Bachelor of Arts .....	186
Criminal Justice .....	Bachelor of Arts .....	192
Criminal Justice .....	Associate of Arts .....	203
English .....	Bachelor of Arts .....	245
English Teaching Certificate .....	Bachelor of Arts .....	252
Fine Arts .....	.....	256
Foreign Language/Government Option .....	Bachelor of Arts .....	260
Foreign Language/Business Option .....	Bachelor of Arts .....	260
Gerontology .....	.....	270
History .....	Bachelor of Arts .....	271
History/Social Studies Teaching Certificate ..	Bachelor of Arts .....	279
Interdisciplinary Studies .....	Bachelor of Arts .....	280
Interdisciplinary Studies .....	Associate of Arts .....	282
International Studies .....	Bachelor of Arts .....	283
Journalism Communication .....	Bachelor of Arts .....	285
Leadership Studies .....	Bachelor of Science .....	287
Legal Studies .....	Bachelor of Arts .....	289
Legal Studies .....	Associate of Arts .....	294
Legal Studies .....	Certificate .....	291
Military Science .....	.....	294
Mortuary Science .....	Bachelor of Science .....	299
Philosophy .....	Bachelor of Arts .....	300
Political Science .....	Bachelor of Arts .....	304
Pre-Law .....	.....	310
Pre-Law 3/3 Early Admissions .....	.....	311
Psychology .....	Bachelor of Arts .....	313
Psychology .....	Bachelor of Science .....	319
Social Work .....	Bachelor of Arts .....	323
Sociology .....	.....	329
Theatre & Communication Arts .....	Bachelor of Arts .....	336
Theater Design and Technology .....	.....	333
Theater Performance for Media & Theater ..	.....	330
Theology .....	Bachelor of Arts .....	337

**School of Education**

Early Childhood Education PreK-4 .....	Bachelor of Science .....	205
Early Childhood Education PreK-4 and Special Education PreK-8 .....	Bachelor of Science .....	205
Middle Level 4-8 .....	Bachelor of Science .....	205
Middle Level 4-8 and Special Education PreK-8 ..	Bachelor of Science .....	205
Secondary Education 7-12 .....	.....	205
Early Childhood Education and Early Intervention	Associate of Science .....	205

**College of Humanities, Education and Social Sciences Minors**

Advertising Communication .....	183
Archaeology and Culture .....	183
Communication & Rhetorical Studies .....	186
Criminal Justice .....	204
Education .....	232
English .....	255
Exceptional Child .....	233
Fine Arts .....	258

	Degree	Page
French .....		261
German .....		261
Gerontology .....		270
History .....		279
International Studies .....		284
Journalism .....		287
Leadership Studies .....		288
Philosophy .....		303
Political Science .....		309
Pre-Law .....		313
Psychology .....		322
Social Work .....		328
Spanish .....		261
Special Education and Diversity .....		232
Theatre .....		333
Theology .....		341
Training and Development .....		233
Women's Studies .....		341

## **Morosky College of Health Professions and Sciences**

### **School of Health Professions**

Nursing (Villa Maria School of) - BSN .....	Bachelor of Science in Nursing .....	391
Nursing (Villa Maria School of) - RN-BSN Option .....	Bachelor of Science in Nursing .....	399
Nursing (Villa Maria School of) - RN-MSN Option .....	Master of Science in Nursing .....	403
Nursing (Villa Maria School of) - School Nurse Certification .....	Certificate .....	405
Nutrition & Human Performance .....	Bachelor of Science .....	513
Occupational Therapy .....	Master of Science .....	407
Physical Therapy .....	Doctor of Physical Therapy .....	413
Physician Assistant .....	Master of Physician Assistant Science .....	419
Polysomnography .....	Certificate .....	496
Radiologic Sciences .....	Associate of Science .....	489
Respiratory Care .....	Associate of Science .....	494
Respiratory Care .....	Bachelor of Science .....	494
Sport and Exercise Science .....	Bachelor of Science .....	501

### **School of Sciences**

Biochemistry .....	Bachelor of Science .....	343
Biology .....	Bachelor of Science .....	344
Biology Teaching Certificate .....	Bachelor of Science .....	360
Chemical Engineering .....	Bachelor of Science .....	364
Chemistry .....	Bachelor of Science .....	365
CWRU Pre-Dental .....	Bachelor of Science .....	437
Forensic Science .....	Bachelor of Science .....	373
Freshwater and Marine Biology .....	Bachelor of Science .....	358
LECOM Dental .....	Bachelor of Science .....	439
LECOM Medical .....	Bachelor of Science .....	442
Mathematics .....	Bachelor of Science .....	377
Mathematics Teaching Certificate .....	Bachelor of Science .....	382
Medical Laboratory Science .....	Bachelor of Science .....	384
PCOM Medical .....	Bachelor of Science .....	451
Physics .....		428
Podiatry Medicine .....	Bachelor of Science .....	476
Pre-Medical, Pre-Dental, Pre-Podiatry, Pre-Veterinary, Pre-Optometry, Pre-Chiropractic .....		432



	Degree	Page
Pre-Pharmacy .....		433
Pre-Pharmacy (Charleston) .....		473
Pre-Pharmacy (Duquesne) .....		464
Pre-Pharmacy (LECOM) .....		465
Public Health .....	Bachelor of Science .....	485
Qualifications in Pre-Health Professions .....		484
Ross Medical .....	Bachelor of Science .....	454
Ross Veterinary .....	Bachelor of Science .....	479
Salus Optometry .....	Bachelor of Science .....	462
Science .....	Bachelor of Science .....	499
UMHS Medical .....	Bachelor of Science .....	457
<b>Morosky College of Health Professions and Sciences Minors</b>		
Biology .....		363
Chemistry .....		373
Exercise Science .....		513
Mathematics .....		384
Sport Behavior .....		515
Statistics .....		384

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## THE LIBRARY

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The Msgr. Wilfrid J. Nash Library provides resources, services, facilities, and instructional programs in support of the University curricula and the scholarly needs and interests of the Gannon community.

Nash Library's collections contain over 200,000 book volumes and more than 5,000 audiovisual items. Special collections include the University Archives. The library provides online access to over 45 databases, 50,000 periodicals, and 175,000 ebooks. Additionally, reference service and information literacy instruction are integral components of the library's educational mission. Interlibrary loan service is also available.

The library is open 97 hours per week during the Fall and Spring semesters and provides a wide variety of study spaces for individual and group study.

### **LIBR 111: Library Research and Information Skills**

A one-credit course focusing on understanding and utilizing a variety of information sources and formats, both print and electronic. It will include the skills of determining information needed, effective search strategies, critical evaluation of sources of information, using information effectively and the ethical and legal use of information.

*1 credit*

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# Admission to the University

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## ADMISSION POLICY

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Gannon University subscribes to the National Association for College Admission Counseling’s Statement of Principles of Good Practice. Admission policy has been established to protect all students’ rights, privileges and privacy, while providing well-qualified students with an opportunity to enroll at the University. Gannon University reserves the right to deny admission to applicants who have a criminal record or other indications that they could harm or impact the wellness of the Gannon Community.

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## EVALUATION OF CANDIDATE CREDENTIALS

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Admission decisions are based on a variety of factors including high school record, as demonstrated through course selection; grades; and the results of SAT (Evidenced Based Reading & Writing, Math) or ACT Tests. Extra-curricular activities, recommendations, and personal statements also enter into the admission decision.

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## ADMISSION REQUIREMENTS

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Candidates for admission must be graduates of accredited secondary schools, preparatory schools, or present a General Equivalency Diploma (GED). It is recommended that a candidate’s preparation include 16 academic units distributed as follows:

Science & Engineering		Business	
English	4 units	English	4 units
Social Sciences	Any combination	Social Sciences	Any combination
Foreign Language	of 4 units	Foreign Languages	of 4 units
Mathematics	4 units	Mathematics	4 units
Including Geometry, Trigonometry, and Precalculus		Including Geometry, Trigonometry, and Precalculus	
Science	4 units	Science	4 units
Including Biology, Chemistry, and Physics with Labs		Including Biology and Chemistry with Labs	
Humanities		Education	
English	4 units	English	4 units
Social Sciences		Social Sciences	
Foreign Languages	Any combination	Foreign Languages	Any combination
Mathematics	of 12 units	Mathematics	of 12 units
Science		Science	
Health Sciences			
English	4 units		
Social Sciences	Any combination		
Foreign Language	of 4 units		
Mathematics	4 units including up to		
Algebra II and Pre-Calculus			
Science	4 units including Biology and		
Chemistry with Labs			

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## FRESHMAN APPLICATION PROCEDURE/PROCESSING

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Completion of the application sequence includes the following:

1. Submission of a completed Application Form (paper, on-line, or Common Application). All applications are free of charge.

2. Submission of an official secondary school transcript including senior class schedule, and counselor recommendation. All transcripts become the property of Gannon University and cannot be returned, copied, or forwarded to a third party. Gannon can receive transcripts via email from a counselor at [admissions@gannon.edu](mailto:admissions@gannon.edu) or electronically through Common Application or Parchment.
3. Submission of standardized test scores, either SAT or ACT. (It is recommended that you have test scores sent directly from the testing agency).
4. Submission of additional letters of recommendation, personal statement, and a listing of extracurricular activities and accomplishments.

If there is a need for further information, the Office of Admissions will contact you. The Admissions Committee may require a personal interview.

While there is no deadline for filing the application\*, it is recommended that students who plan to live on-campus, complete the application no later than August 1 following their senior year if they plan to start in the fall term. Students planning to start in the spring term (January) should apply no later than December 1 preceding that term. Applications are processed as they are received and offers of admission are extended on a space available basis. In other words, some programs have maximum enrollment quotas that will be filled prior to the beginning of the academic year.

Notification of admission decisions occurs on a rolling basis. Students will be notified within 2-4 weeks once all necessary items to complete an application have been received.

All students who plan to enroll must submit a final, official secondary school transcript verifying graduation.

\*In processing applications for the Fall semesters, the Physician Assistant Program has an application deadline of November 1.

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## DEPOSITS

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An enrollment deposit is requested when a candidate has been accepted. The deposit amount is \$100. The Physician Assistant; LECOM Dental, Medical, and Pharmacy programs require a \$300 deposit.

Most programs for the entering class are filled as the deposits are received. Room assignments are also made according to the date deposits are received in conjunction with completion of appropriate paperwork.

The deposit is refundable until May 1 should a student choose not to enroll. We will delay admission for most programs for a semester or year upon receiving written request for delayed admission. In these cases, the deposit is rolled over to the new admission date.

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## ADVANCED PLACEMENT

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Applicants participating in the College Entrance Examination Board Advanced Placement Program will be considered for credit and placement if the appropriate test scores are sent. See Advanced Placement section.

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## TRANSFER STUDENTS

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### General Requirements

Students in good standing (generally defined as a 2.0 average or better on a 4.0 scale) at accredited institutions may qualify for admission, depending upon various aspects of the entire academic record. Several programs require a grade point average above a 2.0. Of primary interest to the Admissions Committee is the college performance, although the high school record may carry weight in some instances. Additionally, transfer students will be asked to submit a college clearance form (Transfer Applicant Evaluation Form) from the Dean of Students at the current or most recent institution attended. Receipt of this form is required in order for students to complete final registration.

Official updated transcripts from each college/university/institution attended are required before a final admission decision is made. Transfer students with fewer than 30 credits must also provide an official copy of their high school transcript. All students must show proof of high school graduation.

Students on notice of dismissal are not eligible to apply for admission to Gannon University until after the lapse of one academic year. At that time, the Admissions Committee will determine whether or not the student may be admitted.

Applicants on probation or whose records show less than a 2.0 average at their current or most recent school are advised that they will not, except in extraordinary circumstances, qualify for admission to Gannon University.

A grade of "incomplete" is not acceptable on a transcript from a previous college. All "incompletes" must be resolved prior to being reviewed for admission.

Courses taken previously at regionally accredited institutions which have relevance to the academic program to be followed at Gannon University, and in which grades of "C" (2.0) or better have been earned, are eligible for transfer. (Several Programs require grades of "B" or better to be considered for transfer.) The Dean's Office of the college in which the student intends to enroll completes the formal evaluation of transfer credits.

### UPPER DIVISION TRANSFER PROGRAMS (for Associate degree graduates)

#### Next-Step Program

Transfer students may be eligible to use the Next-Step program in order to expedite the completion of a bachelor's degree from Gannon. Students holding the Associate of Arts or the Associate of Science Degree from another regionally accredited institution may qualify for Gannon's Next-Step program. The program enables students to make an easy transition from a two or four year college to Gannon. The program guarantees acceptance of up to 64 credits and allows students to potentially enter Gannon with junior level status. Only courses in which grades of "C" (2.0) or better have been earned are eligible for transfer. At least two years of upper-division full-time study are required to obtain the baccalaureate degree from Gannon.

#### Next-Step Programs

Accounting	Management
Biology	Marketing
Chemistry	Nursing RN-BSN
Communication Arts	Occupational Therapy** (for OTAs only)
Criminal Justice	Political Science
English	Psychology
Entrepreneurship	Risk Management and Insurance
Finance	Science

Health Care Management  
International Management

Social Work  
Sport Management and Marketing  
Supply Chain Management

\*\*May require summer courses.

Curriculum for each major is listed in the Academic Program section of the catalog. (i.e., Biology-Next-Step, See Biology).

Persons who are interested in receiving general information or making application to Gannon should write or call:

Office of Admissions  
Gannon University  
109 University Square  
Erie, Pennsylvania 16541-0001  
(814) 871-7407  
1-800-GANNON-U  
admissions@gannon.edu  
www.gannon.edu

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## INTERNATIONAL STUDENTS

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1. Application - International students should apply as soon as possible for visa issuance purposes. Gannon recommends applying by July 1st for the next fall intake and December 1 for the next spring intake to ensure adequate time for processing.

International students need to send the following:

- a. International Undergraduate Admission Application with the required application fee.
- b. Transcripts and final exam results from all secondary (high school) and/or postsecondary schools attended; English translations are required.
- c. Evidence of language proficiency if native language is not English:
  - TOEFL (Test of English as a Foreign Language) 550 (paper test) or 213 (computer test) or 79 (Internet based - iBT)
  - IELTS (International English Language Testing System) 6.5 (except: Mechanical Engineering, Electrical Engineering, Embedded Software Engineering, Engineering Management, Masters of Business Administration and Masters of Public Administration which requires a minimum of 6.0 overall band.)
  - ELS Language Center level 112
  - PTE (Pearson Test of English) 53
  - English 366
  - Completion of a four-year degree from an accredited US university within the past year
- d. Affidavit of Support Form along with a bank statement showing appropriate funds in U.S. dollars. Gannon University is required by United States immigration law to verify financial resources available for a student's educational and related expenses.
- e. International Transfer Applicant Form- for students who are already in the US. This form is to be completed by the International Student Advisor or designated equivalent at the applicant's current school.

NOTE: Applicants who meet the academic requirements for a specific program, but who do not satisfy the English-language requirement, may be offered admission to the university. These students can meet the language proficiency by enrolling and completing Gannon's English as a Second Language Program (ESL).

2. Residency - All unmarried international students under 21 years of age are required to live in our University housing until they have completed four regular semesters of University study.

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## RE-ADMISSION TO THE UNIVERSITY

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Students who have withdrawn or been separated and wish to return should complete the Undergraduate Re-Admission Application. This application can be completed online or printed at [www.gannon.edu/apply](http://www.gannon.edu/apply). Applications may also be mailed upon request. The Re-Admission application requires a personal statement and a review by the Re-Admission Committee.

Students who left in good standing (2.0 GPA or better) and with a positive conduct history, should be eligible to return. Students who were academically dismissed must wait one full year before being eligible to return.

Academic Forgiveness is a way to encourage capable, mature students who were previously academically unsuccessful with an opportunity for a fresh start in completing their bachelor's degree. Students wishing to apply for academic forgiveness should complete the Re-Admission Application and follow the appropriate directions. For more information about Academic Forgiveness, see that section of the catalog.

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## SPECIAL CONDITIONS WITH PROBATIONARY ACCEPTANCE

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The Admissions Committee may require specific course(s), earned grade point average, and/or an academic contract as a condition of admission/readmission in addition to the minimum requirements of the University. Special terms of admission/readmission will be outlined in the acceptance letter. Students who do not fulfill the special admission conditions will be subject to separation from the University.

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## HIGH SCHOOL DUAL ENROLLMENT PROGRAM

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The High School Dual Enrollment program is an opportunity for high school juniors and seniors to enroll in college courses while in high school. To apply for High School Dual Enrollment status, students must submit the High School Dual Enrollment Application, official high school transcripts, School Authorization Form from his/her high school and a check (made payable to Gannon University) for the full cost of courses. All documents must be submitted together for consideration. There is no application fee for the High School Dual Enrollment Program. To ensure that a student's experience at Gannon University will enhance his/her high school performance, we ask that students work with their high school guidance counselor or principal to avoid any conflict with regular schoolwork while attending classes at Gannon University.

### *Admission Criteria*

**Seniors** with at least a 3.25 cumulative GPA on a 4.0 scale, 1130 (new SAT)/1050 (old SAT) and/or 22 ACT and a rank in the top 25% of his/her graduating class may be eligible for admission as a High School Dual Enrollee. Students applying to take classes starting in their senior year must submit at least five semesters of coursework for review.

**Juniors** with at least a cumulative 3.50 GPA on a 4.0 scale and a rank in the top 25% of his/her graduating class may be eligible for admission. Students applying to take classes starting in their junior year must submit at least three semesters of coursework for review.

In order to enroll in subsequent semesters as a High School Dual Enrollee, students must attain a 2.0 GPA in each class from Gannon University. Students must also submit a new School Authorization Form to the Office of Admissions for each semester.

The tuition cost for High School Dual Enrollees is \$100 per credit hour in addition to any applicable fees and books. This tuition is subject to annual increases.

Registration will be coordinated by the Office of Admissions in conjunction with the Registrar's Office, once a student is accepted as a Dual Enrollee and has paid tuition in full.

Students applying for an upcoming Fall term must apply by the end of May, for the Spring Term by mid-December and the Summer term by the end of March. However, keep in mind that Gannon courses are available on a first-come, first-served basis.

For more information about the High School Dual Enrollment Program, contact the Office of Admissions at (814) 871-7407 or [admissions@gannon.edu](mailto:admissions@gannon.edu).

The application, supporting materials and overview can be found on-line at the High School Dual Enrollment web site: [www.gannon.edu/dual](http://www.gannon.edu/dual).

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## **CENTER FOR ADULT LEARNING**

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The Center for Adult Learning is available to individuals who are interested in starting or returning to college for a variety of individual reasons: career change, job advancement, re-entry into the labor market, professional development, personal enrichment and/or a desire to obtain a college degree. The Center for Adult Learning specifically works with individuals who are pursuing college for the first time (age 21 and over) or part-time undergraduate students. Gannon University does not offer specific adult learning courses, however individuals are welcome to apply to any of the academic programs offered by the university.

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## **ADMISSION THROUGH THE CENTER FOR ADULT LEARNING**

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### **PART-TIME ENROLLMENT**

Those individuals who desire to attend Gannon as part-time students will apply for admission through the Center for Adult Learning. This office is fully equipped to assist students who plan to enroll part-time as a freshman, transfer, summer transient (guest) or returning student.

Part-time study for undergraduate students is considered less than 12 credits per semester (generally taking fewer than four courses per semester).

Admission as a part-time adult student requires verification of high-school graduation or successful completion of the GED. An entrance exam is required of all students unless they have taken the SAT or ACT. Part-time transfer students should review the catalog section regarding policies on academic standing, probation and dismissal to determine eligibility to apply for admission to Gannon University. Admission applications can be completed and in many cases processed in one visit to the Center for Adult Learning.

A copy of transcripts is sufficient for evaluation. However, before a student is accepted, the University must receive an official transcript, mailed directly from the institution of record to the Center for Adult Learning at Gannon. High school records, GED scores, and/or college transcripts (if applicable) must be sent in this manner. A form to facilitate the process is available in the Center for Adult Learning.

Contact the Center for Adult Learning for more information.

### **FULL-TIME ENROLLMENT**

Students 21 years of age or older who have not previously attended a college and are interested in attending Gannon on a full-time basis should apply through the Center for Adult Learning.

Admission as a full-time student requires verification of high school graduation or successful completion of the GED. An entrance exam is required of all students unless they have taken the SAT or ACT.



A copy of transcripts is sufficient for evaluation. However, before a student is accepted, the University must receive an official transcript, mailed directly from the high school. GED students must submit an official transcript showing all years of high school completed as well as a copy of the GED scores.

Several full-time programs have application deadlines and specific entrance requirements. Contact the Center for Adult Learning for more information.

# Financial Facts

## UNIVERSITY EXPENSES

### UNDERGRADUATE TUITION

A **flat rate** for 12 to 18 credits is charged. Students wishing to enroll in more than 18 credits must have written approval from their Academic Dean and are charged a per credit rate for each additional credit.

	Per Semester Flat Rate 12-18 Credits	Per Credit Rate
<b>Programs</b>		
Business	\$ 15,090	\$730
Education	15,090	730
Humanities	15,090	730
Science	15,090	730
Engineering & Computer Science	16,000	785
Health Sciences	16,000	785
RN - BSN	N/A	530

### SPECIAL FEES AND EXPENDITURES:

APB/SGA/Leadership Fee	\$ 101 /semester
Application Fee	25
Audit Fee	150 /credit
CLEP/Challenge	50 /credit
English as a Second Language (ESL)	580 /per course
Graduation Fee	80
High School Dual Enrollment/ Cathedral Prep-GU Scholars Program	100 /credit
Late Fee	50 -100
Non-scheduled course Fee	100 /credit
NSF Check Fee	25
Student Insurance (optional)	Contact Gannon Health Center
University Fee	275 /semester/Full-time 25 /credit/Part-time

### COURSE FEES:

Refer to [www.gannon.edu/fees](http://www.gannon.edu/fees) for a complete listing of all lab and course fees.

### HOUSING RATES (per semester)

One Time Housing Fee	100
GU Connect Fee	165
Alpha Sigma Tau House	Single 3,050 Double 2,750
Bishop Troutman House	Single 3,900 Double 3,285
Delta Kappa Epsilon	Single 3,050 Double 2,750
Finegan Hall	Double 3,100
Freeman Hall	Double 3,300
Harborview Apartments	Single 4,300 Double 3,800
Kenilworth Apartments	Single 4,200 Double 3,300
Lubiak Apartments	Double 3,300
North Hall	Single 4,350 Double 4,050
Phi Sigma Sigma House	Single 2,940
Walker Hall	Single 3,900
Single Apartment	4,200

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Wehrle Hall .....	Single 3,400	Double 2,900
West Hall .....	Single 2,880	
Wickford Apartments .....	Single 3,900	Double 3,285
301 West 5th Street .....	Single 3,800	
305 West 5th Street .....	Single 3,050	Double 2,750
632 Sassafras Street .....	Single 4,200	Double 3,500

*MEAL PLAN RATES (per semester)*

Any student (except a freshman resident) can choose from the plans listed.

Freshmen Resident Plans (Refer to the Residence Life section for plan explanation.)

Golden Knight Plan .....	3,000
Victor E. Knight Plan .....	2,895
Maroon Plan .....	2,470

Other Plans

150 Meals per semester + \$150 GU Gold Funds .....	1,795
75 Meals per semester + \$150 GU Gold Funds .....	975
50 Meals per semester + \$150 GU Gold Funds .....	695
25 Meals per semester + \$150 GU Gold Funds .....	423

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**PAYMENT**

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- Check, Cashiers Check or Money Order
- Cash payments under \$1,000
- On-Line Payment
  - E-Check and Credit Card payments can be made on GUXpress using the “View & Pay Semester Bill” link on the Student Account Center or at [www.gannon.edu/epayment](http://www.gannon.edu/epayment).
  - There is no charge for E-Check transactions
  - A 2.65% service fee is assessed on credit card transactions.
  - Cards accepted: VISA, MasterCard, Discover and American Express.
- Payment Plans
  - Annual Plan  
A TuitionPay Plan is available through Higher One which enables you to pay all or part of your annual costs in ten interest-free payments for a minimal processing fee. More information regarding this plan can be found at [tuitionpaymentplan.com](http://tuitionpaymentplan.com).
  - Semester Plan  
A Deferred Payment plan is available through Gannon’s Cashier Office which enables you to defer up to \$2,500 per semester in three interest-free payments for a minimal processing fee. More information regarding this plan can be found on GUXpress on the Student Account Center.

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**INDEBTEDNESS POLICY**

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A student who is in debt to the University may not register, receive an official transcript, or receive their diploma from the Registrar until the indebtedness has been discharged.

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**PAST DUE ACCOUNTS**

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Past due accounts without satisfactory arrangements with Gannon’s Cashier Office will be turned over to a collection agency. All reasonable collection costs, including attorney fees and other charges necessary for collection, will be the student’s responsibility.

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## REFUND POLICY

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### *Tuition & Fees:*

For 14 week semesters, a percentage of tuition charged will be refunded as follows: 100% during the first week; 80% the second week; 60% the third week; 40% the fourth week; and no tuition refund thereafter. For fees, 100% refund will be given during the first week; and no fee refund thereafter.

There is no financial adjustment for credits dropped between the flat rate (12-18 credits).

After the first week of the semester, there is no financial adjustment when a student drops from full-time to part-time.

### *Housing:*

A 100% refund will be given during the first week of the semester; and no refund thereafter.

### *Meal Plan:*

A meal plan dropped during the first week of the semester will be refunded the full cost of the plan less the equivalent cost of meals consumed prior to dropping the plan. After the first week, a percentage of the meal plan cost will be refunded as follows: 80% the second week; 60% the third week; 40% the fourth week; and no refund thereafter.

### *Federal:*

The Financial Aid Office is required by federal statute to determine how much financial aid was earned by students who withdraw, drop out, are dismissed, or take a leave of absence prior to completing 60% of a payment period or term.

For a student who withdraws after the 60% point-in-time, there are no unearned funds. However, a school must still complete a Return calculation in order to determine whether the student is eligible for a post-withdrawal disbursement.

The calculation is based on the percentage of earned aid using the following Federal Return of Title IV funds formula:

Percentage of payment period or term completed is the number of days completed up to the withdrawal date divided by the total days in the payment period or term. (Any break of five days or more is not counted as part of the days in the term.) This percentage is also the percentage of earned aid.

Funds are returned to the appropriate federal program based on the percentage of unearned aid using the following formula:

Aid to be returned is (100% of the aid that could be disbursed minus the percentage of earned aid) multiplied by the total amount of aid that could have been disbursed during the payment period or term.

If a student earned less aid than was disbursed, the institution would be required to return a portion of the funds and the student would be required to return a portion of the funds. Keep in mind that when Title IV funds are returned, the student borrower may owe a debit balance to the institution.

If a student earned more aid than was disbursed to him/her, the institution would owe the student a post-withdrawal disbursement which must be paid within 120 days of the student's withdrawal.

The institution must return the amount of Title IV funds for which it is responsible no later than 45 days after the date of the determination of the date of the student's withdrawal.

Refunds are allocated in the following order:

- Unsubsidized Federal Stafford Loans
- Subsidized Federal Stafford Loans
- Unsubsidized Direct Stafford Loans (other than PLUS loans)
- Subsidized Direct Stafford Loans
- Federal Perkins Loans
- Federal Parent (PLUS) Loans
- Direct PLUS Loans
- Federal Pell Grants for which a Return of funds is required
- Federal Supplemental Opportunity Grants for which a Return of funds is required
- Other assistance under this Title for which a Return of funds is required (e.g., LEAP)

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## GU GOLD FUNDS

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The student ID card also acts as your GU Gold card. GU Gold funds can be used for a variety of purchases on and off campus. Visit [www.gannon.edu/gugold](http://www.gannon.edu/gugold) to make deposits, view participating merchant locations and additional program details. Deposits can be made any time during the year. Once funds are deposited they cannot be withdrawn as cash, or used to pay balances on a student's tuition account. Funds remain on account from one semester to the next until the student graduates or withdraws. At that time, a refund can be requested. The credit will first be applied to any outstanding balance on a student's tuition account before being refunded.

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## FINANCIAL AID

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In order to bring a Gannon education within the reach of qualified students who could not otherwise afford it through either their own or their families' reasonable efforts, Gannon offers an integrated financial aid program of scholarships, loans, and employment.

The Gannon Early Version Award application (EVA) and Net Price Calculator (NPC) are two resources available for applicants to submit data and receive an early estimate of aid. The EVA application is attached to the paper admissions application or can be downloaded from the Financial Aid web page. Submit the EVA application to the Financial Aid Office for an estimated award letter. The NPC, also located on the Financial Aid web page, is an interactive program that will process the data entered and provide an immediate estimate of aid.

Gannon's Financial Aid program is open to all students attending classes during the nine month period from September through May. Financial aid is not available for summer term courses, although the Financial Aid Office can help students secure outside loans to help with expenses during this period.

### Finalizing Aid

To secure merit and need based scholarships, grants and educational loans all students should complete and submit the Free Application for Federal Student Aid (FAFSA) each year, no later than March 15th.

Need based financial aid is awarded on the basis of established financial need. Need is defined as the difference between the family's relative financial strength and the cost to attend Gannon. All students must file the **"Free Application for Federal Student Aid"** (FAFSA) available on-line at [www.fafsa.ed.gov](http://www.fafsa.ed.gov), from guidance counselors, or the Financial Aid Office. The Expected Family Contribution (EFC) is determined by an analysis of the data submitted. The EFC measures a family's financial strength and determines eligibility for federal student aid. Upon determination of the EFC, a student's need is derived and an aid package is put together.

### *Types of Assistance*

Financial Aid is generally awarded in the form of a package including grant, scholarship, employment, and loan funds. The amount of each type of aid varies according to the University's funds and the student's need. During 2016-2017, about 95 percent of Gannon's students who applied received financial assistance. The financial aid budget including athletics, was over 35 million dollars. Aid awards range from \$500 to the full cost of tuition, fees, room and board. In addition, many Gannon students receive scholarship funds from outside the University.

### *Loans*

Long-term loans are an important financial aid resource available to students who need help and who are willing to pay for part of their current education with their future earnings.

#### *Federal Student Loans*

All students are eligible to apply for a Federal Direct Student Loan. Under this program a student may borrow a maximum amount from \$5,500 to \$7,500 per year subject to a total undergraduate borrowing limit of \$31,000. The interest rate is fixed, and the principal may be deferred while a student is enrolled at least half-time. Repayment may be made over a ten-year period which begins six months after less than half-time enrollment. Interest may accrue immediately.

#### *Alternative Loans*

Alternative loans are loans that can be obtained to help pay for the cost of education. These loans are in the student's name and in most cases require a creditworthy co-signer. This type of loan can also be deferred until after graduation, but interest accrues upon disbursement.

#### *Nursing Student Loan Program*

The Nursing Student Loan Program is patterned after that of Perkins' loans but applies only to those who have been accepted in the nursing program. The program is intended to assist full-time students to achieve careers in nursing by providing long-term, low-interest loans to help meet the costs of education.

#### *Parent loans*

Federal Parent PLUS (Parent Loan for Undergraduate Students) loans can be used to cover college expenses, including tuition, room, board, and fees, minus any other financial aid received. The PLUS loan is not need-based and has a fixed rate.

### *Student Employment*

#### *The Federal Work-Study Program*

The majority of the employment opportunities on campus are reserved for students eligible to participate in the Federal Work-Study Program. This federal program provides students with many interesting opportunities to work with faculty, staff and administrators. Students work limited hours a week and are able to set up their work schedule around the times they attend classes.

### *Scholarships and Grants*

#### *General Scholarships*

Gannon awards scholarships to freshmen and transfer students who meet eligibility standards. The University offers a variety of scholarships, grants and awards in recognition of students' academic and athletic accomplishments, demonstrated need and outstanding talents. In addition, need based aid is considered for students who demonstrate financial need by filing the required applications and adhering to deadlines. Award packages are renewed each year to students that remain in academically good standing and continue to meet the

required eligibility standards for both academic and need based aid. Students need not apply for specific scholarships since they will automatically receive consideration for all funds for which they may be eligible when they submit the FAFSA.

#### *Outside Scholarships*

Candidates for Gannon scholarships are urged also to apply for national, state, and local scholarships for which they may be eligible and which may be used at the institution of their choice. These include National Merit Scholarships and scholarships offered by local foundations, clubs or business organizations. The high school guidance office should be consulted about these awards. All outside scholarships received and applicable at Gannon should be reported to the Financial Aid Office, even if they are received after the FAFSA is submitted or after a Gannon award is made. Federal regulations mandate all resources, including outside scholarships, must be considered in determining need.

***Gannon University reserves the right to adjust all University grants, scholarships, or funds if the student recipient receives additional grants, scholarships, or tuition assistance from any other internal or external source that exceeds regular billable charges and books.***

***The brochure "Important Information Regarding Financial Aid," outlines all financial aid policies in detail, accompanies all final award notifications and is available online. This information should be reviewed regularly.***

#### *Federal Grants*

##### **Federal Pell Grant**

The FAFSA must be filed in order to determine if a student would be eligible for a Federal Pell Grant. Eligibility varies and is based on parent and student income and asset information.

The Teacher Education Assistance for College and Higher Education (TEACH Grant)

Current conditions and eligibility requirements are listed at the Dept. of Education web site at: <https://teach-ats.ed.gov/ats/index.action>

##### **Federal Supplemental Educational Opportunity Grants (FSEOG)**

The FSEOG program was established by Congress to help universities enroll qualified students with exceptional financial need. Gannon has a limited amount of funding to award to undergraduate students who fall into certain need categories.

#### *How to Apply for Financial Aid*

Prospective students who are candidates for financial aid at Gannon University must take the following steps:

1. File a formal application for admission with the Admissions Office.
2. File the Free Application for Federal Student Aid (FAFSA).
3. Pennsylvania residents must file the FAFSA no later than May 1st in order to be considered for State Grant funds. Students from other states should file the appropriate state required form for state grant purposes only.

#### *Army ROTC Scholarships*

The Army ROTC program awards two and three year campus based scholarships to qualified applicants. These scholarships pay full tuition, a book stipend, plus a monthly stipend for 10 months per school year.

GU/ROTC Room and Board — Gannon University offers Room and Board scholarships to all cadets receiving FULL ROTC Scholarship funding.

For additional information, contact the Gannon University Department of Military Science at 814-871-ROTC.

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## **POLICY STATEMENT ON SATISFACTORY ACADEMIC PROGRESS**

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Academic advancement is defined for full-time enrollment as successfully completing a minimum of 24 credits within 2 consecutive semesters. This progress will be checked each semester you are in attendance. If you have not progressed a minimum of 12 credits in the first semester you will be sent a warning letter. Your aid will be continued for the next semester but you will be required to make up any deficiency prior to the next awarding of funds.

Failure to comply with academic advancement will result in the loss of aid for any subsequent term. Students are reminded that progressing at the rate of only 24 credits per year, while meeting the minimum progress requirement, may utilize all of their eligibility for financial aid before completing their program of study.

Part-time students are also required to academically advance in the same manner as mentioned above, except at a reduced rate of 6 credits per semester (12 credits per year) at half-time and 9 credits per semester (18 credits per year) at three-quarter time.

Students enrolled in an educational program of more than two academic years must have a 2.00 Cumulative Grade Point Average prior to the receipt of a 3rd year of financial aid.

Students have the right to appeal academic advancement and GPA policies. Please refer to Gannon's Financial Aid web page under Forms and Documentation for additional policy and procedure information regarding Satisfactory Academic Progress (SAP) for institutional, state and federal grants and loans.

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## **VETERANS ASSISTANCE**

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In an effort to provide veterans with personal support and multiple services, Gannon University maintains an Office of Veterans Affairs. The Veterans Affairs representative offers the veteran current information on the assistance available primarily in the areas of higher education, vocational and technical training. Assistance is also available to explain the wide range of VA benefits accruing to veterans and their dependents as well as guidance in filing the appropriate VA forms.

Benefits currently available to the veteran under the GI Bill<sup>®</sup> can range from \$200 a month to tuition and fees. Many opportunities such as tutoring, counseling, and remedial programs can be explained to the veteran by contacting the Gannon Veterans Affairs Office.

Pennsylvania Veterans' are offered maximum state grant awards. Federal grants and loans are additional sources of financial aid to the veteran.

The Veterans Affairs Office additionally provides a referral service to veterans for federal, state, and county services which are not a part of any veteran's program but are available to the veteran.

Gannon University will take veteran status into consideration in making decisions regarding admission. Up to 6 credits of Military Science can be awarded to the student for his military training. Additionally, many schools attended and training given while in the service allow for the granting of credit for corresponding university courses.



# Student Life and Support Services

## The Gannon Experience

Students are at the center of a vibrant and lively campus! Encouraging students to be actively involved and engaged in their college experience is the primary focus of the Student Development and Engagement division. Staff and student leaders approach and deliver programs that foster a learning environment where students integrate their outside-of-class and in-class learning by participating in and reflecting on events and activities centered on 4 strategic themes: Service, Globalization, Leadership, and Wellness. At the heart of these themes and incorporated into the liberal studies curriculum are nine lifestyle dimensions (intellectual, social, physical, emotional, sexual, life-planning, cultural, spiritual, and political.) An overall learning environment that shares a foundation for holistic personal and spiritual growth challenges students to explore their values, beliefs and attitudes and teaches them valuable lessons and skills needed to be successful in their lives and careers.

Being actively involved and engaged in campus life makes a positive difference in students' lives; therefore, students are expected to participate in a variety of experiences to gain a better understanding of themselves, their interests and what they want to do in life. Leadership programs, volunteering and service-learning opportunities, traveling abroad, intramural sports and wellness programs are just a few examples of interactive, educational and fun programs provided. Students maintain a co-curricular transcript which records their participation in clubs and organizations, significant accomplishments and other actions taken outside the classroom toward their overall growth and development. This document is particularly important to graduate / professional schools and employers when students graduate and move forward in their lives and careers.

Gannon offers a full spectrum of opportunities, services and support to assist students with creating a personalized and successful college experience.

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## COMMUTER LIFE OFFICE

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The Office of Commuter Life provides a "home away from home" for commuter students with a large lounge complete with a sink, microwave, refrigerator and coffee pot for student use. There are also two study rooms attached to the lounge and lockers to sign out. The lounge is a place to meet other students, receive guidance and information from the Commuter Advisers, and learn about opportunities for involvement and leadership on campus. Programming allows students to grow and become more connected to Gannon. Commuter Life also oversees a parking lottery in the summer for all commuters for parking in available ramps and lots around campus.

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## CONCERT BAND

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The Gannon University Concert Band offers performance opportunities for Gannon students of all majors. Band may be taken for credit by wind, brass and percussion players; and each playing member of the ensemble receives a cash award. Rehearsals take place once a week on Wednesday evenings, and the repertoire ranges from classic band literature to new and innovative works. Along with two performances a year, the Concert Band takes a field trip to see a professional performing group in the area. The Gannon University Concert Band is operated under the auspices of the School of Communication and the Arts.

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## HEALTH AND COUNSELING SERVICES

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Health and Counseling Services is committed to providing holistic health and psychological services to the Gannon University community to promote all aspects of wellness. The staff approaches these services in a dedicated, professional, and approachable manner while adhering to state mandates and guidelines appropriate to a university setting. Students are not charged for most services.

### Counseling Services

Counseling services are available to support students with their personal development. Students seek counseling for a variety of reasons, including stress, family issues, depression, anxiety, relationship concerns, eating disorder or body-image concerns, and other life challenges. Goals of counseling include increased awareness about personal values, needs, attitudes, and related behavioral changes. Counseling Services utilizes a brief treatment approach and referrals to community resources are made as needed.

Individual, couples, and group counseling services are provided by licensed psychologists, counselors, or interns/trainees from various academic backgrounds. Counseling Services also provides programming for various groups and organizations on campus. Staff are also available for consultation with faculty and staff regarding student concerns.

### Health Services

Health Services is a minor care facility which strives to promote wellness and conserve the time of the students for their class work and studies by preventing and treating minor illnesses and injuries. A full time nurse practitioner is available at Health Services along with two full-time registered nurses. Students can be evaluated at Health Services during the scheduled academic calendar.

A University Health Examination Form **must be on file** at Health Services in order to receive services from the nurse practitioner. Students who do not submit this required form will be referred to other local health care facilities for services. New students should receive their Health Examination Form in an admission packet after their deposit is paid. Any student who does not receive this form can pick it up at Health Services or call 814-871-7622 to request a form be mailed to them. Each properly registered student may, as needed, receive such medical care as Health Services is equipped to provide at the discretion of the medical staff.

**Please note** that students who are enrolled in Health Science majors may receive a separate health form from their department. It is necessary for these students to have both the academic departmental form and Health Services form filled out and returned to the appropriate offices.

### Health Insurance:

All international students and dependents in J status are required by the Department of State (DOS) to maintain health/medical insurance that meets (DOS) requirements as outlined in the DS-2019. The insurance must cover the entire time period of the exchange experience in order to meet regulatory requirements.

### Student Medical Insurance Plan

We encourage students to be aware of their health insurance plan and the scope of the coverage. If you are covered by your parents' health insurance, coverage may be impacted if you change your academic status from full-time to part-time or withdraw from the University.

Gannon University has a policy that requires all enrolled **international** students to have Health Insurance coverage. Therefore, there will be a charge on their semester bills for the insurance that Gannon has contracted with an independent insurance carrier to provide. If the

International student can provide proof of insurance, they will be permitted to sign a waiver and remove this charge.

This plan is **optional** for all other enrolled students. Students who participate in internships, rotations, clinicals, etc. need to check with their academic departments to see if there is a requirement to show proof of insurance before going on site. This is particularly true for Health Science majors.

Details relating to Gannon Health Insurance coverage, cost, and enrollment instructions can be obtained from Health Services office.

### **Meningitis Vaccine Policy**

All incoming freshmen and transfer students who will reside in University owned housing are required by Pennsylvania state law to obtain a meningitis vaccine before admission to housing will be allowed. A student may request an exemption from this mandate if the student (or parent/guardian if the student is a minor) provides a signature as to the reason, i.e. religious, medical, or other. Enrolled students are encouraged to obtain the vaccine from their primary care provider/clinic and provide the information on the *mandatory university meningitis vaccine/exemption form* prior to obtaining the room key to their housing unit. Information regarding meningitis and the vaccine may be obtained from Health Services.

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## **INTERCOLLEGIATE ATHLETICS**

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Gannon University is dedicated to fostering the harmonious development of the physical, social, intellectual and spiritual faculties of its students. This concern prompts the University to conduct a program of intercollegiate athletics based upon sound educational principles and practice. This practice functions as a proper part of the educational mission of the University and meets the NCAA and PSAC guidelines. The overall welfare of the participant is of primary concern.

The University is committed to providing an athletic program for student-athletes, and to promoting and developing educational leadership, sportsmanship, physical fitness, sports participation as recreational pursuits, and athletic excellence. In order to appeal to individual interests, Gannon provides athletic facilities and maintains a complete schedule of intercollegiate events in basketball, baseball, cross country, football, golf, swimming, water polo, soccer and wrestling for men; and basketball, cross country, golf, lacrosse, swimming, softball, water polo, volleyball and soccer for women. Gannon also provides the opportunity for intercollegiate competition in the women's sports of Acrobatics and Tumbling and Competitive Cheer. These activities afford a healthy social outlet, and their publicity is a stimulus to school spirit and pride.

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## **GLOBAL SUPPORT AND STUDENT ENGAGEMENT**

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The Office of Global Support and Student Engagement (OGSSE) strives to foster an environment in which global students and their families will thrive, as well as, to engage the members of the wider community in cross-cultural dialogue and learning. OGSSE staff seeks to serve the global community through orientation, advocacy, referral to community resources, cultural programming, and immigration advising for F and J visas. The OGSSE welcomes all members of the Gannon community with global interests and backgrounds, offering support, advice and resources.

### **OGSSE Programs and Services**

- Pre-Arrival Correspondence and International Student Orientation Sessions
- Social Media and OGSSE Website

- Cultural Programming, including International Night
- Field Trips and Shopping Shuttles
- Student Organization Support and Advising
- Advocacy, Referral, and International Student and Family Resources

## Maintaining Immigration Status

Staff members of the Office of Global Support and Student Engagement serve as Gannon University's Designated School Officials (DSOs) and Responsible Officers (ROs). They are responsible for student and University compliance with U.S. immigration regulations, as well as reporting required data to the Department of Homeland Security (DHS) through SEVIS. DSO and RO responsibilities include, but are not limited to, the following:

- General Immigration Advising for Students and Dependents
- SEVIS Record Maintenance
- CPT (Curricular Practical Training) Authorization
- OPT (Optional Practical Training) Applications
- Changes to Degree Program Date Authorization
- Address Changes in SEVIS
- Reduced Course Load Authorization
- Reinstatement of Immigration Status Petitions
- Status Form Travel Signatures
- Mandatory Health Insurance Requirements

**Enrollment Requirements:** International students are required to enroll each semester in a full course of study, making steady academic progress toward completing their program of study. For most undergraduates, this is 12 credits per semester. For most graduates, this is 9 credits per semester. If a student needs to drop below a full course load, he/she must consult with the Office of Global Support and Student Engagement prior to dropping a course, or his/her immigration status may be terminated.

### Employment under F-1 Status:

*On-campus employment:* F-1 students are permitted by the Department of Homeland Security to work on campus no more than 20 hours per week while school is in session. F-1 students may work full time during break periods, including summer.

*CPT (Curricular Practical Training):* CPT authorization may be granted for work done on or off campus but only if it is an established curricular requirement of a degree program or track within a degree program or being completed for course credit. For example, nursing students may participate in a required practicum *for pay* as long as the position is authorized in advance by a Designated School Official in the OGSSE. F-1 students are eligible for CPT after completing one academic year, unless otherwise required by their degree program. At Gannon, students may work no more than 20 hours per week on CPT while school is in session, but may work full time on CPT during break periods, including summer.

*OPT (Optional Practical Training):* The OGSSE assists students in applying to the United States Citizenship and Immigration Services (USCIS) for OPT authorization to work in the U.S. Students must attend an information session to learn more about OPT options and regulations before applying.

*Note: Spouses and dependents in F-2 status may not work in the U.S. under any circumstances.*

### Employment under J Status:

Students and their dependents in J status must meet with a staff member of the OGSSE in order to discuss authorization for both on- and off-campus employment.

### Address Changes:

F-1 and J-1 students are responsible for submitting a physical address and any changes to the

OGSSE within ten days of arrival or a move. The OGSSE updates the address in SEVIS in order to comply with reporting requirements.

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## MISSION AND MINISTRY

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The Mission and Ministry Office is charged with overseeing the integration of the University's Mission into all areas of the University, to maintain and promote the University's Catholic Identity, to provide leadership for activities that pertain to pastoral care and sacramental ministry, and, finally, to provide co-curricular and curricular service opportunities.

The Mission and Ministry Office is made up of three areas: Campus Ministry, the Center for Social Concerns and the Associate Vice President for Mission and Ministry. Although each area is distinct, they collaborate together on many projects, and all are under the leadership of the Associate Vice President for Mission and Ministry, who is a Roman Catholic priest of the Diocese of Erie and a member of the President's Staff.

### **Campus Ministry**

The University's Mission is furthered by Campus Ministry through a wide variety of programs that are open to individuals of the various faith traditions in our diverse world. Our team works to develop a community of faith through daily and weekend Masses, monthly ecumenical services and luncheons, retreats, inter-collegiate leadership workshops, faith-sharing groups and a week-long mission trip to Topka Joppa in Tennessee in May. We seek to empower our students to share in the responsibility of their life in the Church through being active at Masses as altar servers, extraordinary ministers of Holy Communion, lectors and music ministers.

Additionally, the Kirk House and The Bishop Donald W. Trautman House offer Gannon students the opportunity to live in and experience Christian community through faith-sharing, community-building and service.

The Campus Ministry team embraces an ecumenical dimension enhanced by the Coalition for Christian Outreach. Our team consists of full-time professionals and resident campus ministers.

### **Center for Social Concerns**

Founded in 1988 and inspired by Catholic Social Teaching, the Center for Social Concerns (CSC) equips students and campus colleagues to engage with Gannon's communities, both local and global, through purposeful service, exploration and action for the common good. CSC programs encourage student leadership and public impact through Knight Vision (a community-based program for incoming first year students), ServiceMore Sophomores (a mentored small group service-leadership opportunity), Alternative Break Service Trips (travel-based immersions offered over Spring and Summer breaks), Community Corps (weekly local volunteer opportunities related to improving food access and supporting youth) and the Social Change Fellowship (an intensive summer service-leadership experience). In cooperation with the other Community Engagement Offices on campus, the CSC also organizes our two annual days of service (GIVE Day and Day of Caring) and works to support student clubs and organizations seeking community service and philanthropy partnerships.

### **Associate Vice President for Mission and Ministry**

The Mission and Ministry Office celebrates the rich heritage of the Roman Catholic tradition through ministries of pastoral care, sacramental celebration, evangelization and service to the Gannon community, and provides specialized community and individual support as needed, including pastoral counseling, spiritual direction and hospital and bereavement visits.

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## NEW STUDENT PROGRAMS

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Gannon recognizes that new students undergo a unique experience and the Office of New Student Programs was established to assist them during this period of transition. This office provides supportive programs and services for new students that enable them to experience a successful academic and personal adjustment to the University environment.

Orientation programs are held to accommodate the needs of a diverse student population. These programs enable new students and parents to explore the programs, services, and opportunities available at Gannon. The most extensive sessions are held during the summer months for traditional incoming Fall freshmen and their parents. Nontraditional (adult) students are included in the Fall orientation program and a special orientation program is provided for transfer students in June. Also, a Spring Welcome/Orientation program for new students is held in January at the beginning of the semester.

Once the semester begins, the Office of New Student Programs continues to provide support for students through programs involving academic advising, freshman four week grades, academic progress, registration follow up, and other first-year experiences.

### First-Year Experience

Gannon University recognizes the importance of connecting all students to the University community during the first year and to laying the developmental foundation for their success both in and out of the classroom. Student success depends upon their effective use of available services and meaningful engagement in the life of the University. First year students who are constructively engaged will have a holistically rewarding experience at the University.

The mission of the First-Year Experience is to assist new students in making a successful transition to the University and to provide them with the foundations for lifelong learning, personal development and engagement in a global community.

Some of the major components of the First-Year Experience include: Summer Orientation, Preview GU, Welcome Mass, Convocation, First-Year Seminar courses, Learning Communities, LIFECORE, College Student Inventory, Freshman Four Week Grades/Fall Advisor Meeting, leadership development and service learning opportunities.

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## RADIO STATION, WERG-FM

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90.5 WERG-FM is Gannon University's 3000-watt over-the-air, student-operated radio station. The WERG studio was relocated and incorporated into the Center for Communication and the Arts in September 2014. The new 90.5 WERG-FM facility boasts an innovative and sophisticated radio station built to accommodate the ever-evolving needs of current and future communications majors of the 21st century. Participation in WERG is open to all Gannon students, regardless of major. WERG provides Gannon University students with a creative and stimulating learning experience in station operation, from the position of on-air announcer to the position of General Manager. Students are placed in charge of day-to-day operations under the supervision of the station's professional Operations Manager: executing airshifts, scheduling program logs, compiling and reading newscasts, sports talk and play-by-play announcing, maintaining the station website, planning and running promotions, recording promotional and public service announcements, and all the other duties that make-up a successful broadcast operation. WERG's over-the-air signal is available throughout the entire tri-state area and southern Ontario at 90.5 FM. WERG's live Internet stream can be accessed through [www.werghm.com](http://www.werghm.com) or with the *Tune-In Radio* app on a smart phone or tablet. WERG is operated under the auspices of the School of Communication and the Arts.

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## RECREATION AND WELLNESS CENTER

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The Recreation and Wellness Center is dedicated to offering a wide variety of activities from fitness classes to club sports for both men and women of all ability levels, including free play opportunity for life-time sports, and providing the ability for special interest groups to achieve their wellness goals. A \$14.5 million project to enhance student wellness and academic research was completed with a grand opening in August, 2014. The new facility features nearly 52,000 square feet of indoor space for year-round athletic, intramural, open recreation and fitness activities; an indoor field house; a Human Performance Laboratory; new locker rooms; and a healthy FRESH Café.

### Intramural Sports

The Gannon Intramural Sports program strives to provide students, faculty, staff, and alumni with a variety of recreational opportunities while providing a fun atmosphere and a positive experience for the university and Erie Community. Engaging in programmed activities provides health benefits and stress release; personal interaction and engagement with others; and the holistic development of character, integrity, and sportsmanship.

Each year, hundreds of Gannon students choose to participate in a variety of sports, with league and tournament participation. Recreational and competitive leagues are offered for men's, women's, residence halls, Greek, and co-recreational groups. Students gather together in the spirit of friendly competition and leave with treasured memories, life-long friends, and a deeper self-understanding.

### Sport Clubs

Gannon University has nine Sport Clubs: Men's Ice Hockey, Sailing -G.U.S.T (Co-Ed), Men's Rugby, Ultimate Frisbee (Co-Ed), Men's Volleyball, Men's Lacrosse, Women's Soccer (Surge), and Women's Rugby, Women's Volleyball and Ju Jitsu.

Sport Clubs are open to Gannon University students of all skill levels and offer the opportunity to compete with colleges throughout Pennsylvania, Ohio, New York, and West Virginia as well as nationally. Sport Clubs are competitive in nature, with an emphasis on participation, skill development, and student leadership. The philosophy strives to support the best elements of competition, instruction and recreation by providing the opportunity for all students to participate and excel in a team setting.

### GOOD FOR U – Gannon University Wellness

*Good for U* is the University's initiative to promote wellness in our campus community. At Gannon, wellness is more than physical health. It is multi-dimensional and includes social connectedness, emotional well-being, intellectual processing, spirituality, and an appreciation of our natural environment. Opportunities to nurture each of these areas of wellness are available to students, faculty, and staff through campus wide programming, wellness challenges, an annual wellness fair, and innovative informational campaigns to promote healthy lifestyle behaviors. State of the art technology like treadmill desks, stress reduction apps, and electronic wellness dashboards are just some of the ways wellness works at Gannon. Students have an opportunity to get involved at every level whether by attending campus related wellness programming, serving as an intern with the recreation and wellness staff, subscribing to the Wellness List Serve, providing feedback on proposed wellness projects as part of a focus group, or as a member of the Wellness Living Learning Community. Ultimately the goal of *Good for U* is to enhance the quality of life for all members of the Gannon Community by nurturing a culture of wellness through shared responsibility and ownership.

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## RETURNING TO EDUCATION ADULT PROGRAM (REAP)

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The Returning to Education Adult Program (REAP) recognizes that adult students face many challenges in balancing multiple roles and responsibilities and is there to provide support to help make the transition into the classroom easier. There is a lounge for adult students which is complete with many amenities such as a microwave, refrigerator and couches. Many students feel the lounge is a “home away from home” and enjoy socializing, studying, and attending programs there. Non-traditional Commuter Advisers are available to provide support, plan activities, and connect students to events going on around campus.

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## SCHUSTER ART GALLERY

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Schuster Art Gallery, located at 700 Peach Street, offers a unique opportunity for regional artists to display their work. Exhibits change four times a year, displaying a variety of media. An Annual Gannon Arts Exhibit is held. The gallery is free and open to the public during designated hours. Please visit the Schuster Gallery page at [www.gannon.edu/visitors-and-community/area-attractions/schuster-gallery](http://www.gannon.edu/visitors-and-community/area-attractions/schuster-gallery).

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## SCHUSTER PROGRAM FOR THE ARTS

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The Schuster Program for the Arts has several components, including: the Music Scholars, Patron Scholars, a Re-Grant Initiative, Studio Art Classes, “Arts Outings”, and the Schuster Fund. Music Awards are available through an audition process and Patron Scholarships are available through an application process. For more information concerning these opportunities, students should contact the Financial Aid Office. The Schuster Re-Grant Initiative is a program Gannon administers, granting funds to local non-profit organizations engaging in cultural activities.

Programming initiatives of the Schuster Program for the Arts encompass a non-credit studio art class program and the “Arts Outings” program. Studio Art experiences are offered each semester in the evening on campus. For a nominal fee, students can enroll in these hands-on classes with professional artists. In the past, classes have been offered in photography, clay, mosaic glass, linoleum block print, painting, drawing and much more! “Arts Outings” is a program where Gannon acquires tickets to local and regional arts events and underwrites the costs to students. For a nominal charge, students can attend cultural and visual art events.

The Schuster Fund is another funding opportunity at Gannon. Faculty and staff can apply to the fund with an idea for an arts opportunity on campus. Students will have direct impact through the fund from coursework to APB Cultural Events. The fund is open to all full-time employees to apply for support.

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## SERVICE-LEARNING

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When community service is done in an academic context, such as a college course, it is called service-learning. This is a form of experiential learning, employed in many Gannon classes across a wide variety of disciplines. Many Gannon faculty design service-learning assignments for their students because it provides them with hands-on opportunities that translate classroom lessons into “real world” settings. Students receive the benefit of rigorous and complex learning experiences, and community partners receive the tangible benefits of the work that students are doing. For example, Gannon nursing students provide health screenings at senior residences, accounting majors prepare income taxes at local community centers, English majors have written grants for neighborhood improvements, and engineering students have designed improvements to medical equipment for use in international health clinics. All first year students have a community-based service-learning assignment in the



First-Year Seminar classes, and many upper-level courses, research projects, capstone courses, and international courses are now enhanced with service-learning assignments as well. Service-learning supports the University's overall mission for a value-centered education through socially relevant courses that prepare students for lifelong community participation.

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## RESIDENCE LIFE

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### Housing Accommodations & Contract

Gannon University and the Office of Residence Life team believe that there are important educational and social interaction benefits in residence halls and on-campus housing programs that support and enhance the overall student experience. Because of this conviction, all undergraduate students, in their first four semesters, whose permanent home address is located outside a 25-mile straight-line radius of campus are required to live in Gannon University operated housing as specified below.

As a student progresses\* through college study, housing accommodations and program offerings widen (\*progress is determined by regular semesters of study completed). The following description of housing facilities and policies is an overview for prospective students and a guide for full-time enrolled students at any point in their years of study, but is not all inclusive. Additional information should be sought through the Office of Residence Life, its external webpage, and/or supplemental information published by the Office of Residence Life.

Please note the following main points:

- All students located outside the radius previously described, in their first two years with the university, are required to live on campus. Essentially, the University requires a four-semester commitment except for those exempt, which is covered further in this section. College credits taken in high school do not apply. Transfer students will have a commitment unless they can prove 60 attempted credits or four (4) semesters at another institution(s).
- The University reserves the right to move any student from one room/apartment to another at any time.
- Any student contracting for Gannon University operated housing, contracts for a nine month housing commitment agreement.
- There is a five hundred dollar (\$500) termination fee for any student who signs this agreement and then discontinues living in University housing.
- Any first through fourth semester student enrolled at the University, who lives outside the 25- mile radius but does not live in University housing as prescribed by policy, will receive a housing assignment to occupy and will be billed for room charges.
- First year and sophomore commuter students must be living at their parent/legal guardian's permanent home address, registered with the University.

Exemptions to the above mandatory housing requirements are granted to:

1. Married students, whose spouse will be residing with them
2. Students who are 21 years of age or older before the first day of classes for the fall semester
3. Veterans
4. Students whose child will be residing with them

## ON CAMPUS LIVING

There are many options for students because of the variety of styles of halls and properties. All students in their first and second semester of study reside in one of Gannon's two residence halls designated for first year students. These are Finegan Hall, a traditional-style residence halls, and North Hall, a suite-style building.

### For First-Year Students

All first-year buildings are staffed by a Resident Director, Resident Campus Minister, and upper-class students who serve as Resident Assistants on each floor. The staff participate in extensive training and contribute to the development of a living-learning environment, true to the mission of Gannon University. The Residence Life staff strive to ensure that a safe and secure environment exists. They also facilitate the growth of each individual student by offering many co-curricular opportunities in the halls and on campus through programs and out of the halls through small group (trips) or excursions.

All first-year residents are required to purchase one of the meal plans designated for first-year students, detailed in other publications and on the Office of Residence Life webpage.

### Into the Second Year

Moving to other halls or apartment buildings on campus is an option in a student's second year. Staying in the same residence hall may also be an option for some students. The Office of Residence Life manages eighteen (18) various buildings including traditional apartment buildings, themed housing in the Bishop Donald W. Trautman House, Greek housing, and Graduate housing. All of these apartment buildings are fully furnished maintaining occupancy of one to five residents in each, with living and dining areas, multiple bedrooms, bathroom(s), and kitchen.

Resident students are required to sign a housing agreement for University Housing and are bound to the length/term of that contract. Students who sign a housing agreement and do not return to the University will be required to pay a termination fee of \$500. Although upperclassmen are not required to purchase a meal plan, various different options are available to them. The academic year housing commitment in University operated housing facilities is a nine month contract. Summer housing is available through a separate agreement with applicable summer rates.

As is the case with the Residence Halls, most upperclass communities are staffed with a Resident Director and Resident Assistants. The Bishop Donald W. Trautman House is staffed by a Resident Campus Minister.

### Junior, Senior, and Graduate Students On-Campus

We encourage Juniors, Seniors, and Graduate students to live in on-campus housing by participating in the Housing Registration Process each spring prior to the start of the next academic year or through a new application if coming in as a new student at any point in the year. Two special options are available for upperclassmen in either Greek organizations or those interested in the Kirk House, a community connected to Gannon by the Church of the Covenant. More information about living in these communities can be obtained through the Office of Residence Life. Graduate students work directly with the Graduate Admissions regarding housing and deposit details in the initial stages and then contract with Residence Life.

Any student whose academic program ends midyear (ex: internships or graduation), or is no longer taking classes due to withdrawal, is exempt from the contract termination fee.

### **Off-Campus**

Apartments are available in the surrounding area and may also provide housing for students who choose to move out of campus housing. Students contracting housing with area landowners enter into legal obligations in all aspects of rental and at their own risk.

### **ON CAMPUS DINING**

The University, through its food service provider, offers a number of meal plan options to the student body. Meal plans are purchased and managed through the Office of Residence Life. As there is the potential for meal plans to undergo slight changes from year to year, additional information should be sought through the Office of Residence Life, our external webpage, and/or supplemental information published by the Office of Residence Life.

In addition to the main dining hall in Beyer, there are multiple food service locations on campus to provide convenience and variety. Options include Doc's Landing and Knights Cove in the Waldron Center, InterMetzo in the Palumbo Academic Center, 900 State in the Center for Business Ingenuity, and the Courtyard Café in the Morosky Academic Center. There is a convenience store with coffee shop and grab n' go items in North Hall and all students can request card access to the lobby for shopping and eating in that location. All dining facilities offer a variety of options meeting many palates and dietary needs. Students are encouraged to communicate any allergens, special needs, or prep accommodation with the cooks or management so that excellent service can be provided.

The last scheduled meal served before a break is lunch on the last day of classes. The first meal back will be dinner on the day before classes start.

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### **Sexual Assault and Violence Education (SAVE)**

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The University understands that the threat of sexual violence is a reality on college campuses. *SAVE* strives to expand and enhance Gannon University's response to sexual violence including sexual assault, intimate partner violence, stalking by ensuring a comprehensive and lasting violence program. This is achieved through a collaborative continuum of services, specifically focusing on education and training for the bystander, healthy relationships and avoidance of risky behavior. Partnerships with campus and community resources advocate for the safety of victims and assist with procedures to hold offenders accountable for their actions.

*SAVE* supports the mission of the University by offering leadership opportunities for involvement that inspire both students and adults on campus to take an active stand against violence and promote a safe living and learning community. A wealth of resources addressing sexual violence is available as well as counseling and health services.

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### **STUDENT CONDUCT**

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Each student is expected to adhere to established standards of behavior for members within the University community. Students are required to abide by all federal and local laws as well as all of Gannon University's policies and regulations. Upon admission to the University, students acknowledge their awareness and agree to adhere to the policies and regulations outlined in the Student Handbook which can be found online.

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### **LEADERSHIP DEVELOPMENT & CAMPUS ENGAGEMENT**

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The campus engagement area is committed to ensuring that every student who walks onto Gannon's campus has an exceptional experience. Once students are engaged, they are exposed to transformational experiences of self-discovery, personal development, and

organizational leadership. Specific opportunities include small group initiatives, StrengthsFinder training, the Lead365 national student leadership conference, and Leadership X, a year-long small group experience devoted to self-discovery and creating change in the community.

The Office of Student Organizations works in collaboration with faculty and staff to create involvement opportunities and environments that inspire students to become active members of the campus and community.

### **Activities Programming Board (APB)**

The Activities Programming Board (APB) provides a wide variety of educational and social activities for the student body. This board is comprised of 16 student representatives who plan various activities through the year using funding from the student activities fee. Programs are presented throughout the year to meet the interests of students. Some of these programs include Homecoming, Family Weekend, Little Siblings Weekend, comedians, hypnotists, trips, as well as cultural and social events. The APB office is located in Beyer Hall.

### **Clubs and Organizations**

Gannon University houses approximately 97 recognized clubs and organizations, which offer a wide variety of opportunities to its students. Gannon has clubs in each of the following categories: academic & profession-related organizations; governing & programming organizations; media organizations; greek letter and honor societies; special interest clubs; club sports; and social fraternities and sororities. There is a club or organization for almost any interest, and if not, the Office of Student Organizations will guide students through the process of forming a new club or organization.

### **engage U Transcript**

The **engage U** Transcript allows students to showcase their areas of involvement, learning experiences, and overall outstanding achievements. A printed record of their involvement history, memberships, interests, service and volunteer hours becomes a particularly useful tool when applying for jobs and graduate schools.

### **Fraternities and Sororities**

Social Greek-letter organizations (fraternities and sororities) have played an integral role in the campus community as well as the greater Erie community since 1954. Fraternity and sorority membership provides opportunities for interpersonal and social development, philanthropic and community service endeavors, leadership skill training, as well as recreational and spiritual pursuits. Gannon currently has 5 sororities and 7 fraternities.

### **Student Government Association**

The Student Government Association (SGA) is a student-run governing body that represents all full-time undergraduate Gannon students and acts as a liaison between the students, faculty, staff, and administration. It strives to maintain a healthy academic and holistic experience by: a) serving as the official voice and administrative unit of the undergraduate student body; b) working to advance the student intellectually and developmentally; c) fostering a spirit of friendship, companionship and pride throughout campus.

The SGA General Assembly consists of an eight member executive board, nine representatives elected from each class, and representatives from other student constituencies. Throughout the year the SGA actively engages with and has voting rights on most University standing committees to ensure that students needs are addressed. For example, there is SGA representation on the Board of Trustees and University committees such as Academic Affairs, Liberal Studies, and Budget Advisory Committee.

The SGA encourages students to voice their ideas and opinions about University policies, facilities and events. There are several SGA committees in which students can participate such as GUTS (Gannon University Team Spirit) and the Student Engagement Committee. Students may also give input by attending the Students' Voice section of an SGA General Assembly meeting, attending any open forum, and visiting the SGA office located in Beyer Hall.

In addition to being the main voice for the students, the SGA allocates funding for the student activities fee to recognized clubs and organizations and student projects, co-sponsors a Merit Scholarship for engaged students, and facilitates student leadership opportunities open to all undergraduate students.

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## SCHUSTER THEATRE IN SCOTTINO HALL PRODUCTIONS

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For actors, designers, technicians and theatre lovers, Gannon offers a diverse main-stage season in the Schuster Theatre in Scottino Hall on Sassafras Street across from the Nash Library. Enjoyed by students, faculty, staff, friends, family, and Erie theatregoers, our campus productions are open to participation by anyone in or associated with Gannon. Open auditions are held for each semester's production during the first week of classes. The theatre program, which offers degrees in Theatre and Communication Arts, Theatre Performance for Media and Stage, and Theatre Design and Technologies, is a part of the School of Communication and the Arts.

Student theatre artists who show outstanding achievements and ability in the theatre arts may be eligible for election to the Kappa Beta Chapter of the national dramatic honor fraternity, Alpha Psi Omega. Membership is awarded on the basis of merit points accumulated through participation in our theatre productions and related activities.

Each year, the theatre presents a variety of classical and modern plays, including musicals, improvisations, and student directed/written work. The theatre is also host to guest artists, and is a regular invitee of the International Collegiate Theatre Festival at the Edinburgh (Scotland) Festival Fringe.

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## THE GANNON KNIGHT, Campus Newspaper

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Students with an interest in journalistic writing, editing, page design, photography and web design can sharpen their skills at *The Gannon Knight*, Gannon University's weekly newspaper. *The Gannon Knight* office features modern and newly revamped production facilities located in the Center for Communication and the Arts, housed within the School of Communication and the Arts. *The Knight's* facilities are progressive and sophisticated, allowing students access to modern newspaper equipment and procedures that help facilitate a deeper and more meaningful understanding of media in all of their capacities. *The Knight* focuses on the areas of news, opinions, features, entertainment and sports. The award-winning publication, a presence on campus since 1946, is open to all students, regardless of their major. Staff members can pursue roles as writers, section editors or assistant editors, copy editors, photographers, web editors and advertising sales people. Scholarship funds are available for editorial board positions. In addition to producing a weekly newspaper, which has a circulation of 1,500 copies, student journalists are responsible for operating a companion website, [www.gannonknight.com](http://www.gannonknight.com), and interacting with readers via social media outlets including Facebook and Twitter.

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## THE KNIGHT CLUB

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During the academic year, The Knight Club features a full menu of delicious appetizers, sandwiches, wraps, salads, burgers, pizza, side dishes, desserts, and refreshing beverages. Open exclusively to the Gannon community, students experience great food, live music and

comedy, video karaoke, movie nights, pool tables, air-hockey, video game tournaments, cards, and board games in a relaxed, safe, on-campus / non-academic setting. The Knight Club provides opportunities for student employment and academic engagement, and students create and produce a full calendar of special events. The Knight Club is an on-campus hangout where students can establish connections with each other and with the University, and build positive memories that will last a lifetime. Ask about our Café Club 15 & 30 meal bundles. GU Gold is accepted!

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## **FRESH CAFE**

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Located within Gannon University's Recreation and Wellness Center, Fresh Café offers a great space for preparation, organization, and restoration while advocating all around wellness. Fresh Café's made-to-order menu features juices and smoothies made from fresh fruits and vegetables, a variety of hand-crafted salads, wraps, panini, fresh fruit and healthy desserts. Ask about our Café Club 15 & 30 meal bundles. Fresh Café also accepts GU Gold!

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## **WALDRON CAMPUS CENTER**

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The Waldron Campus Center, named for John E. Waldron, provides a wide variety of programs and services that give students an outlet for relaxation, recreation and co-curricular learning. The WCC provides meeting space and promotional opportunities for clubs and organizations, APB events, Late Night Study, and other social activities. The Center also boasts a game room, ballroom, several lounges, food courts, 'TV lounge', meeting rooms and a computer lab which is also a late night study room. The WCC is centrally located and serves as a vital resource for information and programming which encourages increased engagement and the holistic development of Gannon students.

The Waldron Campus Center supports a variety of University events and department functions and hosts summer conferences, alumni events and other special events as a resource for the Erie community.

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## **STUDENT SUCCESS CENTER**

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The Student Success Center (SSC) includes the Academic Advising Center, Career Exploration and Development, Commuter Life and REAP, Disability Support Services (ADA/504), New Student Services, Science Technology, Engineering and Mathematics (STEM) Center, Student Support Services (SSS) Program, and Writing and Research Center. Each of these areas offers specific support services offered in an integrated team approach. The SSC is located on the first floor of the Palumbo Academic Center (PC 1025). The STEM and Writing and Research Centers have extended evening hours and all of the other departments offer services from 8:00 a.m. to 4:30 p.m., Monday through Friday, but will make appointments for students that cannot meet during normal business hours.

### **Academic Advising Center**

Gannon University utilizes the faculty-based advising model. Application of this model allows for the advisor and advisee to develop a deeper rapport. The advisor can assist the advisee in course selection, career planning and furthering their academic studies. The successful implementation of this model helps to achieve greater student satisfaction and retention. The Academic Advising Center (ACC) is assisting faculty to increase their knowledge of advising through a variety of workshops, webinars, and guest speakers.

The Academic Advising Center has a variety of other functions. The AAC collaborates with several groups of students to assist them in reaching their academic goals. The AAC serves as

a supplement to the student's advisor in helping those students who have received some form of academic action (probation or caution). The College Student Inventory (CSI) is used with all freshman students to identify obstacles that might hinder their transition to college. The AAC staff provides services to students referred to them through the Early Alert Referral System (E.A.R.S.). The E.A.R.S. system allows faculty or staff members to refer students to the AAC, who are having academic or transitional issues that are impacting their classroom performance. The General Studies and the Undeclared Program are other programs that are coordinated by the AAC. The AAC overall objective is to assist with the undergraduate retention effort.

### **General Studies Program**

Gannon University established the General Studies Program in recognition of the diversity of students and the importance of providing them academic/personal support. The General Studies Program provides support to students who have been identified as being at risk for retention and successful completion of a degree, but who demonstrate that they have the motivation and determination to be successful. The Program offers an opportunity to receive personalized assistance that will help them achieve academic success and acceptance into a specific major.

Assistance to General Studies students is provided in a variety of academic areas, including transitional issues. Students are able to sign up for tutoring and receive through the STEM Center and Writing and Research Center. Students are advised by the Director and academic advisors within the Academic Advising Center. Their primary responsibility is to assist them in the areas of career development, personal development, academic advising related to curriculum concerns and course scheduling.

Students remain in the General Studies program for a minimum of one semester or a maximum of three semesters. Students are permitted to enroll in their academic major after achieving the prescribed GPA, demonstrating competency in related courses, and being recommended by the Director of the Advising Center, with final approval by the College Dean and/or the Program Chair. The General Studies Program is designed to enable students to complete degree requirements within the standard time frame for their major. Bachelor degrees may be completed in four years. However, some students may take longer based on their needs and the length of time spent in the program. Course requirements and sequencing of the program in which the student intends to major may also affect graduation dates. Most students will graduate with their class, and others are not expected to take more than an additional semester or two.

The purpose of the General Studies Program is to develop the skills necessary to assure academic success and make college a positive experience. The Program is uniquely designed to help motivate and empower students with the knowledge that they are capable of college work and endeavors to inspire them with confidence in their ability to become contributing members of their community, society and church.

### **Undeclared Program**

The Undeclared Program at Gannon University is a student advising centered program that offers students the time to complete some intense college major/career exploration, while taking both liberal core classes and courses of interest.

Undeclared Program students represent a significant proportion of the entering student body at Gannon University as well as at other universities and colleges. Many other students who begin their university studies in declared majors will change their majors at least once before they graduate.

Making a decision about a major without adequate knowledge of course content and career options can hinder the student's progress in the long run. If in doubt about major selection, it is better to remain flexible during the first few semesters so the student can learn more about him/herself and what opportunities are available at Gannon University. Students interested in Health Science majors need to fully explore those programs before choosing the Undeclared major.

To assist in career exploration and college major selection, students may be enrolled in a specific First-Year Seminar and will meet regularly with their advisor. Students will meet with their advisor to address questions about curriculum, degree requirements, and course selection. Students are expected to make a successful transition into the correct choice of major during the freshman or early sophomore year.

## **Career Exploration and Development**

The career center is a resource for students, alumni, faculty, staff, employers and other community partners. The team interacts with students and graduates from all academic disciplines and supports individuals interested in learning about the world of work and exploring possible destinations. Whether one is undeclared, undecided, focused in a major, launching into or across the workforce, and/or planning on attending graduate/professional school, the career team is available to provide strategies and support centered on action plans linked to potential outcomes.

Through career education initiatives, the team presents on career exploration and readiness topics in partnership with faculty, students and other members of the community. All students and alumni are invited to engage in one-on-one meetings with advisors and participate in both on and off-campus career events including employer visits and job/internship fairs. Beginning freshman year, students are encouraged to leverage the career team to: explore career options; develop career development objectives; learn how to articulate transferable skills and knowledge gained from academic and co-curricular experiences; develop resumes and other essential documents; build shadowing/observation, internship, co-op, and networking plans; identify skills needed to seek and obtain meaningful employment; and pursue graduate studies – among other subjects! There are also many supplemental resources available for students and alumni including job, internship and co-op opportunities.

A common starting point is to connect in-person with the team located within the Student Success Center on the first floor of the Palumbo Academic Center. Many first-time visitors request a meeting with an advisor and then complete a self-assessment to help better identify and articulate interests, values and potential pathways. There are also online resources available and accessible at any time for students. These include the College Central Network portal and the MyPlan platform; both are found on the department's MyGannon pages.

## **Disability Support Services (ADA/504)**

Gannon University, in compliance with Section 504 of the Rehabilitation Act, the Americans with Disabilities Act (ADA) of 1990, and related state and federal legislation, is dedicated to providing responsible advocacy, reasonable accommodations, and support services to students with disabilities who present current and proper documentation of disability to the Office of Disability Support Services. Services may include extended test time in a distraction-limited environment, readers/scribes as indicated in a student's documentation, and guidance as needed. Students may contact the Coordinator of Disability Support Services by calling 814-871-5522 or in person by visiting the Student Success Center in the Palumbo Academic Center (PC 1025).



## Early Alert Referral System

The Early Alert Referral System (E.A.R.S.) is a referral program designed to help identify students early in the semester who are experiencing problems that may hinder their academic performance. Faculty or staff should complete the brief on-line form which is forwarded to the Student Success Center (SSC). The form is located on the Gannon Portal under GUXpress/Faculty Information or Health & Well-Being links. Faculty/staff members are encouraged to discuss the referral with the student prior to forwarding the form. The student will receive an email from the staff of the SSC asking them to schedule a meeting to determine the appropriate referral to resolve the student's issues. The SSC staff member will advise the referring faculty member and the student's advisor of any actions taken on the student's behalf. Examples of reasons for referral would include academic performance (received a D or F grade on test/assignment or is not turning in assignments), attendance (missed 2 or more classes), career satisfaction, or financial issues. If the student requires personal counseling a referral to BIT (Behavioral Intervention Team) can also be made through the Gannon portal.

## STEM Center

The STEM (Science, Technology, Engineering, and Mathematics) Center provides free one-on-one and group tutoring opportunities for courses within the Morosky College of Health Professions and Sciences and the College of Engineering and Business, and also supports related coursework from the College of Humanities, Education, and Social Sciences. (Specific areas include mathematics, statistics, physics, chemistry, biology, health professions, engineering, and business.) The STEM Center also provides more intensive support for traditionally difficult courses through the STEM-PASS (Peer Assisted Study Scheme) initiative, which includes tutor attendance and participation in the target classes and facilitation of several extra help sessions each week. Additionally, the STEM Center seeks input and involvement from faculty and other campus stakeholders in order to evolve and create services that assist students in their efforts to meet course and program learning outcomes. General hours of operation are Sunday through Friday, with extended hours Monday through Thursday. Students are directed to visit <https://my.gannon.edu/stem> for more information and to schedule appointments, which may be experienced either in-person or online. The STEM Center is staffed by a director and trained peer consultants.

## Student Support Services (SSS/TRIO)

Student Support Services (SSS), a federally funded TRIO program, is designed to enhance students' skills and foster success in higher education. Working in collaboration with other offices at Gannon University, the program guides and supports 150 eligible Gannon University undergraduates in four-year degree programs and helps prepare them for each new challenge through the receipt of their bachelor's degree. The goal of SSS is to increase participants' college persistence, support them through graduation and facilitate the transition from one level of higher education to the next.

To be eligible for services, a student needs to be officially admitted and enrolled at Gannon University, a U.S. citizen or eligible for Federal Aid, and meet at least one of the following criteria:

- Low-income student: a student whose family meets federal income eligibility guidelines
- First generation student: Custodial parent(s) did not complete a four-year college degree
- Student with a documented disability

Interested students should complete the required forms to verify eligibility for services. These forms can be downloaded from [www.gannon.edu/ss](http://www.gannon.edu/ss)

## Writing and Research Center (WRC)

The Writing & Research Center (WRC) is staffed by professional and trained peer consultants who reflect our respect for the individual writer. The Writing & Research Center team has a strong commitment to service and regards language as fundamental to the holistic development of the student. We offer one-on-one conferencing, both in-house and online, for students of all abilities, including speakers of other languages. Undergraduate and Graduate students should visit the Writing & Research Center at any stage of the writing process, from any discipline. In addition, the WRC provides tutoring for all CHESS courses, as well as support for the college of Communication and the Arts. The WRC also houses the CHESSMate Program, which aims to foster academic engagement and reinforce learning outcomes in CHESS courses through embedded peer mentorship and supplemental sessions. To schedule an appointment, students can visit <http://gannon.mywconline.com>.

# Degree Requirements, Academic Awards

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## GRADUATION

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Degrees are conferred three times per year, in December, May, and August. Attendance at Commencement ceremonies, which are held in December and in May, is highly recommended, since graduation is such an important and joyous occasion in the life of academic institutions. An undergraduate student is eligible to participate in the May ceremony if all requirements are expected to be completed in May or August of the same year. An undergraduate student is eligible to participate in the December ceremony if all requirements are expected to be complete in December of that year.

Prospective graduates must complete an application for graduation by November 15 for May or August graduation and by May 31 for December graduation. The application, which is available in the offices of the Dean, Registrar, Center for Adult Learning and on GUXpress, must be submitted to the Registrar's Office. Prior to the deadlines, the Dean will audit the student's record to determine eligibility for graduation on the date indicated, and will supply a copy of the audit to the student. No application will be accepted without the Dean's verification of eligibility. If the application is completed by the appropriate deadline, the graduation fee will appear on the fall bill for December graduates and on the spring bill for May and August graduates.

Failure to apply for graduation by the appropriate deadline may result in the loss of such privileges as participation in the ceremony, senior awards, and name listed in the commencement program. Payment of the graduation fee must accompany late applications.

It is the student's responsibility to apply for graduation at the appropriate time and to meet all requirements for graduation.

### Bachelor Degree Requirements

The following list indicates minimum University requirements for the baccalaureate degree. Please note that some programs specify additional requirements beyond these minimums. See descriptions of individual programs for any additional requirements.

1. At least 128 hours of academic work must be completed by the student, with an overall quality point average of not less than 2.0. Courses numbered below 100 are not used to meet the requirement.
2. The specific course requirements must be fulfilled as stipulated in each academic program. A cumulative grade point average of 2.0 in the field of concentration is required. A cumulative grade point average of 2.0 is also required for a successful completion of the minor.
3. At least two thirds of the upper level courses in the field of concentration, including required seminars, and the final thirty credit hours of degree requirements, must be taken at Gannon University. Exceptions to these specific requirements have been granted to students who are enrolled in approved accelerated programs. Other students with special circumstances may request a waiver of these degree requirements, with the approval of the Academic Dean and Provost of Gannon University.
4. All courses specified for the fulfillment of requirements for the field of concentration and cognate fields must be completed within a time span not to exceed ten years.

5. A course failed in the field of concentration may be repeated once. If not successfully passed, the student is not permitted to continue in that field of concentration.
6. A student is not permitted to continue in a field of concentration in which ten or more semester hours have been failed, or in which more than six semester hours have been failed in one semester.

### Dean's List

To honor excellence in academic performance, Gannon University names to the Dean's List **students who have completed 12 credits or more with a letter grade for each and a grade point average of 3.50 or higher for the semester.** A student who makes a failing grade is disqualified in that semester for the Dean's List. Dean's list is not awarded to a student with an incomplete grade.

### Academic Honors

**Students who have consistently achieved academic distinction receive the following graduation honors:**

Cum Laude — a cumulative grade point average of at least 3.50.

Magna cum Laude — a cumulative grade point average of at least 3.70.

Summa cum Laude — a cumulative grade point average of at least 3.90.

With Academic Honors — Associate Degree students with a cumulative grade point average of at least 3.50.

No student with a failing grade in his/her field of concentration will receive honors at the time of graduation.

Transfer students to be eligible for honors at graduation must have completed 64 semester hours (32 semester hours for Associate degree majors) at Gannon University. Their average will be computed on the basis of their four or two year program. No higher honors will be given than are earned by the semester hours completed at Gannon University.

### Senior Awards

Notable accomplishment of all-inclusive nature or in a specific field is recognized by the following awards:

The Gannon University Medal of Honor

*Presented to the graduating Senior who in the opinion of the faculty and the student's own classmates has done the most to further the interests of the University, to foster loyal college spirit, and to carry out the ideals of the Christian life.*

The Archbishop John Mark Gannon Award

*For general scholastic excellence including transfer courses.*

Individual Achievement Awards:

The Monsignor Wilfrid J. Nash Award

*For Excellence in Christian Service*

The Reverend Charles Drexler Award

*For Outstanding Leadership in Faith, Worship, Community, and Service*

The Doc Beyer Award

*For Outstanding Achievement in Scholarship and Athletics*

The Joe Luckey Award

*For Dedication to the University*

The Educational Opportunity Program Award

Academic Awards for Excellence may also be awarded in each of the undergraduate disciplines.

# Academic Policies and Procedures

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## ACADEMIC FORGIVENESS POLICY

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Gannon University's undergraduate Academic Forgiveness policy applies to former Gannon students whose prior academic performance was unsatisfactory. Gannon University students who apply for readmission as undergraduates through the Office of Admissions after at least five years away from Gannon may request Academic Forgiveness. The policy allows the student to have all previous grades dropped from the cumulative grade point average. Courses with grades of C or higher will be treated as transfer courses and can be used toward a degree.

## ACADEMIC INTEGRITY POLICY

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Gannon University considers the maintenance of academic integrity of utmost importance and stresses that students are responsible for thoroughly understanding this code.

Absolute integrity is expected of every Gannon student in all academic undertakings; the student must in no way misrepresent his/her work, fraudulently or unfairly advance his/her academic status, or be a party to another student's failure to maintain integrity.

The maintenance of an atmosphere of academic honor and the fulfillment of the provisions of this code are the responsibilities of the students and faculty of Gannon University. Therefore, all students and faculty members shall adhere to the basic principles of this Code. Each student will receive the *Code of Academic Integrity* publication of Gannon University during Freshman Orientation or entrance into the University. Upon review of the publication, the students will be invited to sign a pledge to uphold the Academic Integrity of their work and the work of their peers.

### I. Forms of Academic Dishonesty

#### A. Plagiarism

Plagiarism is the inclusion of someone else's words, ideas or data as one's own work. When a student submits work for credit that includes the words, ideas or data of others, the source of that information must be acknowledged through complete and accurate documentation, and specific footnote references, and, if verbatim statements are included, through quotation marks as well. By placing his/her name on work submitted for credit, the student certifies the originality of all work not otherwise identified by appropriate acknowledgments.

A student will avoid being charged with plagiarism if there is an acknowledgment of indebtedness.

**EXAMPLES** (Including but not limited to)

1. Whenever one quotes another person's actual words.
2. Whenever one paraphrases another person's idea, opinion or theory; and
3. Whenever one borrows facts, statistics, or other illustrative materials, unless the information is common knowledge.
4. Downloading or purchasing material from Internet without identifying appropriate acknowledgement.

#### B. Fabrication

Fabrication is the use of invented information or the falsification of research or other findings with the intent to deceive.

**EXAMPLES** (Including but not limited to)

1. Citing information not taken from the source indicated.
2. Listing sources in a bibliography not used in the academic exercise.
3. Inventing data or source information for research or other academic exercise.
4. Submitting as your own any academic exercise (e.g., written work, documentation or legal document [e.g., patient charts, etc.], painting, sculpture, etc., etc.) prepared totally or in part by another.
5. Taking a test for someone else or permitting someone else to take a test for you.

**C. Cheating**

Cheating is an act of deception by which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered.

**EXAMPLES** (Including but not limited to)

1. Copying from another student's test paper and/or other assignments.
2. Actively facilitating another student's copying from one's own test paper/other assignments.
3. Using the course textbook or other materials such as a notebook not authorized for use during a test.
4. Collaborating during a test with any other person by receiving information without authority.
5. Using specifically prepared and unauthorized materials or equipment during a test, e.g. notes, formula lists, notes written on student's clothing, etc.
6. Reporting a clinical visit completed when it was not.
7. Falsifying reports of clinical visits, laboratory exercises, or field experiences.

**D. Academic Misconduct**

Academic misconduct is the tampering with grades, or taking part in obtaining or distributing any part of a test not administered.

**EXAMPLES** (Including but not limited to)

1. Stealing, buying or otherwise obtaining all or part of an unadministered test.
2. Selling or giving away all or part of an unadministered test including answers to an unadministered test.
3. Bribing any other person to obtain an unadministered test or any information about the test.
4. Entering a building, office file or computer/computer system for the purpose of changing a grade in a grade book, on a test, or on other work for which a grade is given.
5. Changing, altering, or being an accessory to the changing and/or altering of a grade in a grade book, on a test, a "change of grade" form, or other official academic records of the University which relate to grades.
6. Entering a building, office, file, or computer/computer system for the purpose of obtaining an unadministered test.
7. Hiding and/or mutilating library/classroom books and/or equipment.

**II. Procedure****Formal Procedure**

1. If an instructor suspects that a student has violated Gannon University's Code of Academic Integrity, he/she will promptly notify the student involved as well as the department chair responsible for the course in question. At no time during the investigation or appeal process are students permitted to withdraw from the course. Within 10 calendar days of the discovery of the alleged violation the instructor will notify the student of the allegation and invite the student to meet to review the matter and to explain the alleged violation. If the student chooses to meet with the instructor

to contest the allegation, this meeting shall be scheduled within 7 calendar days of the notification.

2. If the student is cleared of the allegation, the matter will be dropped. If not, then the instructor will inform the Dean's Office of the violation. (The Dean's Office to be notified is the one responsible for the course.) This Office shall then inform the instructor of the student's number of previous violations of the academic integrity policy, if any. In consultation with the department chair the instructor will then impose a sanction upon the student. A letter detailing the sanction will be sent to the student from the instructor and copied to the three College Deans. The letter shall be sent within 10 calendar days from the date the Dean was notified. The student should be aware that admission of guilt does not eliminate or lessen the sanction imposed by the instructor.
3. The student may appeal the instructor's decision to the Dean of the College in which the course resides. Appeals must be made within 7 calendar days of the date of the instructor's decision. Students are expected to continue to attend class during the appeal process.
4. A hearing will be scheduled within 10 calendar days of the Dean receiving the student's appeal. The hearing will include the Dean, the instructor, and the student. The instructor will present pertinent evidence and the student will be given the opportunity to challenge the evidence and present a defense. The student may have one guest present during the hearing, but the guest is not allowed to speak during the hearing unless permitted by the Dean.

The Dean will issue a finding based upon the evidence presented. If the Dean determines that insufficient evidence has been presented, the matter will be dropped. If the Dean finds the student in violation of the Code of Academic Integrity, he/she may support the academic sanction originally imposed by the instructor. The Dean also has the power to issue administrative sanctions [i.e., separation from the University]). In considering the penalty to be imposed, the Dean shall take into account the evidence of the appeal proceeding as well as any documented previous infraction(s). A letter detailing the sanction will be sent to the student from the Dean and copied to the other two College Deans.

5. Following the Dean's decision, the student has 7 calendar days to make a final appeal to the Provost with respect to the fairness of the proceedings and/or the appropriateness of the sanction. The Provost will issue a decision within 7 calendar days of the appeal. Students are expected to continue attending class during the appeal process. A final letter will be sent to the student from the Provost and copied to the three College Deans.  
(Note: At the Dean's or Provost's discretion, exceptions to the calendar day requirements can be made for unusual circumstances such as Christmas or summer breaks).
6. Once all appeals are exhausted and a final decision has been made the Dean's office responsible for the course will report the finding of academic dishonesty to each of the other Academic Deans.

### **Academic Dishonesty Sanctions**

Any student found guilty of academic dishonesty will be subject to penalties, which, depending on the gravity of the offense, may include the following:

1. A grade of "zero" for the assignment involved (as imposed by the instructor in consultation with the department chair). This penalty will generally be applied in the case of a student's first offense. However, the instructor has the right to impose a more severe penalty based on the circumstances of the offense.
2. Failure of the course (as imposed by the instructor in consultation with the department chair). This penalty will generally be applied in the case of a student's



second documented offense. However, the instructor has the right to impose a lesser penalty based on the circumstances of the offense.

3. Subject to review and approval of the Dean responsible for the course, separation from the University. This penalty will generally be applied in the case of a student's third documented offense. However, the Dean has the latitude to apply a lesser penalty depending on the circumstances of the offense.

### **Review and Expunging of Records**

1. Records of completed disciplinary proceedings are destroyed if the student is acquitted.
2. Records of the completed disciplinary proceedings are maintained by the Dean's Office if the student is found guilty. The records are maintained for a period of three years after the student leaves or graduates from the University.

### **III. Policy of Professional Integrity**

All students have an obligation to maintain ethical behavior in relationship to their profession.

#### **Professional Behavior**

Those behaviors reflecting status, character, and standards of the given profession.

#### **Ethical Behavior**

Those behaviors in accordance with the accepted principles of right and wrong that govern the conduct of a profession.

Any student of Gannon University who engages in unprofessional or unethical conduct is subject to disciplinary action which could include reprimand, probation, separation and expulsion from the University.

### **IV. Sources**

Robert M. Gorell and Charlton Laird, *Modern English Handbook*, 6th Edition (Englewood Cliffs, NJ, Prentice-Hall, 1976), p. 71.

*Campus Rules and Moral Community; In Place of In Loco Parentis* by David A. Hoekema. Lanham, Maryland: Rowman & Littlefield Publishers, Inc., 1994.

The format and definitions for the policy on Academic Integrity were adapted from the "Academic Honesty and Dishonesty" brochure produced by the College of Health Sciences, Gannon University, Erie, PA 16541.

The format and definitions for the policy on Academic Integrity were adapted from the School of Hotel Administration, Code of Academic Integrity, Cornell University.

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## **ACADEMIC PROBATION AND SEPARATION POLICY**

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Academic Probation is a serious warning that the student has failed to meet the University's minimum academic standards. Students are expected to work well above the minimum, both for their individual benefit and for the good of the entire academic community. In fact, students are expected to achieve the highest quality of academic work of which they are capable.

Probationary status is a conditional permission for a student to continue studying at the University until he or she regains good academic standing or is separated from the University for having failed to regain good standing. The Academic Probation and Separation Policy is as follows:

1. All full-time students who fail to achieve a minimum 1.00 semester grade point average will be separated.
2. Full-time freshmen (less than 24 credits attempted) who have failed to achieve a semester grade point average of 1.80 (but greater than a 1.0) will be placed on academic probation for the subsequent semester and assigned to a mandatory academic advisement program. If the student achieves a semester GPA of a 2.0 but less than a 1.8 cumulative GPA in the subsequent semester they will be placed on continued academic probation and continue on a mandatory academic advisement program.
3. Full-time freshmen (less than 24 credits attempted) who have greater than a 1.80 semester GPA but less than a 2.0 semester GPA will be issued a cautionary letter and be assigned to a mandatory academic advisement program.
4. Students who have earned more than 24 credits, after matriculation to the university, must have a semester GPA of 2.0 and an overall cumulative GPA of greater than 2.0. Students with less than a semester GPA of 2.0 will be placed on probation, and must participate in a mandatory academic advisement program. Students will be granted no more than two consecutive semesters of probation at end of which they must have a both a semester and a cumulative GPA of 2.0
5. Students who have earned more than 24 credits, after matriculation to the university, must have a minimum cumulative GPA of 2.0. Students with less than a 2.0 cumulative GPA will be placed on probation and must participate in a mandatory academic advisement program. Students will be granted no more than two consecutive semesters of probation. If the student achieves a cumulative GPA of a 1.8 but less than a 2.0 in the subsequent semester they will be placed on continued academic probation and continue on a mandatory academic advisement program. If the following semester the cumulative GPA is less than a 2.0, the student will be separated.
6. Part-time students will be evaluated after attempting their first six credits. Students with greater than 6 credits that achieve a cumulative grade point average of 1.8 but less than a 2.0 will receive a cautionary letter and will be assigned to a mandatory academic advisement program. Part-time students with less than a 1.0 grade point average after attempting 6 credits will be separated.
7. Part-time students who have attempted their first 12 credits will be reviewed following the same policies as full-time students. Subsequent reviews and academic action will be taken upon completion of each additional 12 credits.

The Admissions Committee may require specific course(s) and/or an earned grade point average as a condition of admission/readmission in addition to the minimum requirements of the University. Special terms of admission/readmission will be outlined in the acceptance letter. Students who do not fulfill the special admissions conditions will be subject to separation from the University.

For the implementation of this policy, a full-time student is defined as any student who is taking 12 credits or more at the conclusion of the first two weeks of classes. Classes dropped before this are not reflected on the student's transcript. Dropping a course(s) after the second week of classes does not exempt a student from being evaluated under the Academic Probation and Separation policy.

Appropriate College Deans will notify students who have been placed on academic probation. With follow-up from the student's academic advisor and the Student Success Center, these students will be expected to engage in the mandatory academic advisement program and concentrate their energies on their studies so that they can bring their work up to the required standard.

Except with the written permission of both the Vice-President for Academic Affairs and the Dean of Student Development, students on probation may not hold office in any University organization, participate in any intercollegiate events or programs, or otherwise represent the University lest they further jeopardize their academic standing.

With the permission of the appropriate College Dean, students may use the summer session at Gannon to restore their good academic standing provided that they complete the equivalent of a full semester's work, e.g. 6 credits in a five-week term.

Students who are separated from the University may not enroll in any University credit course for one full year. Applications for readmission will not be reconsidered until the expiration of one year. Readmission is not a right. The Admissions Committee will take favorable action only when it is satisfied that the factors which led to the failure have been rectified. It is the student's responsibility to demonstrate to the committee that he or she has a reasonable prospect for academic success at Gannon. Any student readmitted will be on probation and assigned to a mandatory special advisement program for the first semester following his or her return. If the student is separated a second time, he or she will not be readmitted.

Students who are separated may appeal that separation to their College Dean. Such an appeal would need to cite extraordinary circumstances that adversely affected academic performance. The College Dean will review all such appeals.

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## THE ACADEMIC YEAR

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Gannon University operates on semester academic calendar. This plan divides the academic year into two four-month semesters. Typically, the fall semester begins late in August and ends before Christmas, and the spring semester begins in early January and ends with Commencement in early May.

### Day Sessions

Classes in the Day Sessions are held five days a week, beginning with the 8 a.m. period. Three credit classes meeting on a Monday, Wednesday and Friday (MWF) sequence meet for 55 minutes each day. Those courses meeting on a Tuesday and Thursday (TTh) sequence meet for 80 minutes each day. There is a ten minute break between each class period.

A one credit course meets 55 minutes once a week. A four credit course meets on the MWF or TTh sequence as mentioned above and also meets 55 minutes on an extra class day. A six credit course meets five days a week on MWF for 55 minutes and TTh for 80 minutes.

Laboratories in the day sessions are held five days a week, beginning with the 8 a.m. period. One credit laboratories meet once a week; two credit laboratories meet twice a week. One laboratory credit normally requires not less than three hours of student work. Instructors will determine the best use of laboratory time.

### Evening Sessions

Classes in the Evening Sessions are held Monday thru Thursday with additional classes on Saturday. These classes meet in sequences of one or two evenings per week. Classes held on Saturday usually meet from 9:00 a.m. to 12:00 noon. Those classes meeting Monday through Thursday begin at 4:30 p.m., 6:00 p.m., and 7:30 p.m.

Laboratories in the evening sessions are held Monday through Thursday, beginning with the 4:30 p.m. period.

### **Summer Sessions**

Gannon offers undergraduate summer courses beginning in May. Students may thus enroll in more than one course, and spread out or overlap their courses during the summer months, depending upon the courses they select from the summer session schedule.

Day classes meet five days per week for ninety-five minutes each meeting when offered over five weeks. Evening classes offered for five weeks meet three days per week from 6:00 p.m. to 8:50 p.m.

Courses offered during the summer session cover the same content as those offered during the fall and spring semesters. However, the summer schedule is limited in the variety of courses offered, and students should check GUXpress for the exact courses being taught each summer. Although concentrated into two, five, or ten weeks, the courses meet for the same amount of time and have the same credit value as semester courses.

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### **ADVANCED PLACEMENT PROGRAM**

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Credit will be given to those students who complete the formal College Board Advanced Placement Courses, with a grade of 3 or higher on the exam. Grades 1 and 2 will be given neither credit nor placement.

Please visit the following website to view a complete and current list of Advanced Placement courses: <http://www.gannon.edu/Search.aspx?id=405&searchtext=advanced+placement>

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### **AUDITING POLICY**

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Interested persons may audit most lecture courses offered at Gannon University if there is space available in the course on the first day of class and until the end of the second week of class. Audit forms may be obtained in the Registrar's office after the first day of class and only with the written permission of the instructor. Laboratory courses may not be taken as an audit. Students who enroll in a course for credit may only change to an audit grade during the first two weeks of a semester. Courses that are taken for audit may be changed to credit only during the first two weeks of the semester. After these two weeks no changes are allowed (see note below). Audit applications and registration forms may be obtained in the Office of the Registrar.

Refer to the Financial Facts section for the cost.

Records of the course will be noted on a student transcript with a grade of AU which carries neither credits nor grade points.

**NOTE:** A student who enrolls in a course for credit may withdraw from that course and after withdrawal may continue to attend classes. The grade for such students will be an 'X' and in no case will be assigned an 'AU' grade.

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### **CLASS ATTENDANCE**

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Attendance at all classes and laboratory sessions is expected of all students and all courses are conducted with this understanding. A student's grades are based upon the general quality of work performed in each course and by such factors as prompt completion of all assignments, papers, and readings, by presence for all examinations, and by participation in class discussion. Ultimately, it is the responsibility of each faculty member to set reasonable attendance policies appropriate to individual courses and to publish those policies on course syllabi. When so indicated on the course syllabus, class attendance may directly influence

final grades in a course for upper-class students as well as freshmen. The following policy statements are to assist in a uniform class attendance expectation.

Certain University events, such as athletics or particular extracurricular activities, in which the students represent the University in an official capacity, necessitate excused absences from classes. In such cases, it is inappropriate to penalize a student as a result of their absences resulting from their function as University representative. Faculty then have a responsibility to provide the opportunity to complete any tests, assignments, or other work.

Students should be aware that in the Junior and Senior years of study of some majors such as health science and education majors, it may be extremely difficult for extensive athletic or other types of extra-curricular participation. Students should discuss this with appropriate University officials before selecting a major.

The primary function of Gannon University is the education of its students. Consequently, it is judged to be inappropriate for any arm of the University to request that students excessively absent themselves from regularly scheduled classes in order to function as representatives of the University. Except in emergency situations (e.g., illness or accident), the student is expected to notify the faculty of scheduled course absences one (1) week in advance. Faculty may require verification from appropriate University staff.

Freshmen who absent themselves, *whether it be excused or unexcused*, from a particular course in excess of twice the number of credit hours assigned to that course may be withdrawn from the course, upon recommendation by the faculty member to the Dean of the student's college. This request would typically result from unexcused absences, but a student with excused absences should also try to adhere to this limit. Although the student may not be penalized for excused absences as defined earlier, a combination of excused and unexcused may result in the same requested withdrawal. The faculty member would need to show the Dean that the student, because of the combination of absences, has not been able to show competency in the course and has no chance of doing so. Students who are active in athletics or co-curricular activities must be responsible for their learning and minimize unexcused absence in times such as sickness or emergencies. Missing an 80-minute class period is counted as one and one-half absences. In addition, the Office of New Student Services is interested in knowing which freshmen accumulated the maximum number of absences allowable. The office is prepared to undertake an inquiry aimed at helping the student. Reports on freshmen attendance must be initiated by faculty members, by means of direct contact with the Office of New Student Services.

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## COURSE LEVELS

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### Catalog #

000-099	Credit earned may not be included in the total credits required for a degree.
100-199	Lower division, undergraduate. Designed as basic introductory courses for freshmen.
200-299	Lower division undergraduate. Designed as intermediate courses to be taken primarily in the sophomore year of a major but may be taken by upper level non-majors.
300-499	Upper division, undergraduate. Designed as junior and senior courses.
500-599	Upper division, and graduate. For graduate students primarily but including courses with some seniors.
600-799	Designed for graduate student only.

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800-899	Doctorate students only.
900-999	Doctorate students only (beginning 2001).

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**COURSE NUMBERING**

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Each course number consists of 7 to 10 characters. The letters refer to the Department. The first three numbers refer to the catalog number and course level. The last two numbers or letters refer to the section.

**FULL-TIME STATUS**

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To be considered a full-time student, a person is required to be enrolled for 12 credit hours in the current fall or spring semester. These credit hours may be undergraduate or for seniors in their final semester the 12 credits may be a combination of undergraduate and graduate courses. This policy accords with current practice of admitting graduating seniors to certain graduate courses during the final semester of undergraduate study.

Students are half-time if they are enrolled for 6-11 credits, they are less than half-time if they are enrolled for 1-5 credits.

**GRADES**

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*Description of Grades and Grade Point Average*

A+	Excellent	4.0 grade points	C+	Average	2.3 grade points
A	Excellent	4.0 grade points	C	Average	2.0 grade points
A-	Excellent	3.7 grade points	C-	Below Average	1.7 grade points
B+	Good	3.3 grade points	D	Below Average	1.0 grade points
B	Good	3.0 grade points	F	Failure	0.0 grade points
B-	Good	2.7 grade points			

A grade point average (GPA) is calculated by dividing the algebraic sum of the grade points earned by the sum of the credits to calculate.

I	Incomplete. This grade indicates failure on the part of the student to measure up to minimum requirements on account of absence for sickness or for some other weighty reason. A student who fails to remove the grade of 'incomplete' within 30 days after the grades are due will automatically receive a failure for the course.
P	Pass. This grade is not calculated in the GPA.
X	This grade indicates withdrawal from a course prior to the cut-off date listed in the academic calendar.
AU	Audit. This grade indicates that the course was not taken for credit.

**INTERNATIONAL BACCALAUREATE PROGRAM**

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Gannon University awards credit for courses completed in the International Baccalaureate Program under the following conditions:

1. Three credits will be awarded for each Higher Level course successfully completed.
2. Successful completion is defined as receipt of a grade of "four" or above.

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## LEAVE POLICY

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Gannon University recognizes that a student may need to temporarily interrupt their education and has a procedure to facilitate this situation. The following are examples of categories that might qualify a student for temporary leave:

- co-op/internship
- military (involuntary)
- medical/psychological
- family/personal

The above categories are not meant to be an inclusive list nor do they guarantee that a student will be granted a temporary leave. The student who feels that they have a legitimate reason to request a leave should request a form from the Student Success Center. The request will be reviewed by appropriate officials of the University.

Temporary leave may be granted for a period of one or two semesters following the student's current enrollment. If a student applies for leave in the first two weeks of the semester then the current semester is counted as one of the two eligible semesters of leave.

When the student is ready to return to the University they should follow these steps:

- If there were any restrictions/holds placed on their return those should be dealt with first e.g. in the case of medical/psychological leaves students are required to provide a release from their physician to the Health/Counseling Center. The Student Success Center will notify the Registrar Office staff to release the hold.
- Contact your faculty advisor to discuss your schedule and they will okay you for registration in GUXpress.
- Contact the Registrar for a registration time.

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## MAJOR-CHANGE/DECLARATION

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Students wishing to declare or change their major field begin the process with their advisor or the Student Success Center. After consultation about a major change, the student obtains the signature of their advisor on the Change/Declaration of Major form. Alternatively, the Chair/Director or Dean of the student's present major can sign the form in place of the advisor.

The student takes the form to the Chair/Director of the requested major for approval. The form is then sent to the appropriate Dean's office for final approval. A completed and approved form will be sent to the Registrar's Office for changing official records.

If necessary, the student can be referred to the Student Success Center at any step in the process.

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## MINOR DECLARATION POLICY

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Curriculum for available minors are listed in this catalog after the curriculum for each major. In order to declare a minor, a student must fill out a "Declaration of a Minor" form in their Dean's office.

A minor will not be printed on the transcript until the student is certified for graduation by their Dean. Student must be pursuing a baccalaureate degree.

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## **PASS—FAIL OPTION**

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Students have the option of taking one free elective course per semester on a pass-fail basis. The option excludes required courses in the major or minor field of study, cognate courses and Liberal Studies Core courses. The student is limited to twelve credits of pass-fail courses that count toward the student's degree. If a student elects to take a course on the pass-fail basis, the student must so state to the student's advisor and dean by the date designated in the Academic Calendar. If the dates of the course are different from the regular semester dates, the student must submit the pass-fail form before 60% of the course is complete. Forms are available in their dean's office. The student shall have the option of converting to a letter grade until the date designated in the academic calendar. In any event, the instructor submits a letter grade. The grade is stored in the Registrar's files for future referral. In ascertaining eligibility for inclusion on the Dean's List, a student must present a minimum of 12 credit hours of letter grade courses. A "P" (passing) grade will not be reflected in the grade point average; an "F" (failing) grade, however, will be reflected. Any exception to the rule of one course per semester can be allowed only with the approval of the student's dean.

Courses taken beyond those needed for degree requirements may be taken pass-fail in addition to the twelve credits allowed.

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## **REPEAT COURSES**

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A student may repeat a course. The student is required to take the course at Gannon and submit written notice of a repeated course to the Registrar's Office if he or she wishes to have the repeat noted on the transcript. Forms are available in the Registrar's Office. When a student elects to repeat a course, the letter "R" will be placed in front of the original grade and the original grade will not be calculated in the grade point average (GPA). This policy is limited to 15 credits of course work. Each repeat registration is counted as a course. This policy does not cover the situation when the "repeat" (or subsequent) course was completed prior to fall 1972 semester unless the student is readmitted. Courses repeated beyond 15 credits will have both grades calculated in the GPA. Repeated courses can only be included once in all degree requirements for graduation.

A student may be granted permission to repeat a failed Gannon course at another institution. However, since credits transfer but not grades, the original course cannot be coded as a repeat.

Refer to Bachelor Degree Requirements under the Degree Requirements section of this catalog for additional regulations about failed courses. Some Academic Programs have a more restrictive repeat policy. Contact the Program Director for more information. A course failed in the field of concentration may be repeated once. If not successfully passed, the student is not permitted to continue in that field of concentration.

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## **STUDENT ACADEMIC GRIEVANCE POLICY**

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### **Scope and Purpose:**

1. This policy addresses academic grievances only. An academic grievance is defined as a complaint brought by a student regarding the University's provision of education and academic (only) services affecting their role as a student. Complaints or grievances connected to assigned grades represent a special case to the grievance process. Grading reflects careful and deliberate assessment of a student's performance by a faculty member. As such, the substance of grading decisions may not be delegated to the grievance process. Nevertheless, the University recognizes that in rare cases the process of grading may be subject to error or injustice. Therefore, a student who alleges an error or injustice in the grading process would follow this policy toward resolution.



2. This policy does not apply to student complaints regarding employment or alleged violations of other policies in the student handbook.
3. It is the intent that this policy to provide an efficient process, allowing for both informal and formal resolution of grievances related to academic concerns, complaints or allegations.
4. A student must initiate a grievance as close as possible to the date of the occurrence of the incident and no later than 45 days after the end of the semester in which the alleged grievance occurred. The three summer sessions are considered as one semester.

### **General Guidelines**

Academic grievance procedures should be kept as informal as possible based on principles of mediation and conciliation. Every reasonable effort should be made to resolve any academic grievance at the lowest organizational level possible. In the event that it cannot be resolved informally, the student may seek resolution at the next higher level according to the Formal Resolution procedure.

In the event that the faculty member is no longer employed by the University or is not available within the timelines specified in these general guidelines, the student is to initiate the complaint with the faculty member's immediate supervisor.

The student filing a grievance may have a third-party advisor, such as the University Ombudsperson; attend any meeting at which the student appears. The faculty member involved in the grievance may also have a third-party advisor approved by the University attend any meeting at which the faculty member appears. Legal counsel shall not be used by either party in this grievance process.

### **Informal Resolution Phase**

All academic grievances begin with the informal resolution phase. This first step toward resolution of an academic grievance should begin at the lowest organizational level. The student and the faculty member or University colleague involved should meet to discuss and work toward resolution of the concern. The student should address the grievance to the faculty member or University colleague involved as soon as possible. The student should follow the established protocol regarding the levels of appeal. Formal resolution shall not occur without occurrence of the informal resolution phase.

The student may contact the University Ombudsperson for assistance in initiating the academic grievance process or at any time during the process.

### **Formal Resolution Phase**

The formal resolution phase is used by the student when a satisfactory informal resolution has not occurred.

1. The first step in the formal resolution of an academic grievance is to submit a formal written account of the grievance to the appropriate immediate supervisor. Students may consult the Human Resources office to determine the appropriate supervisor.
  - a. The written account must be submitted to the immediate supervisor within two weeks after the last meeting of the informal resolution phase.
  - b. The written account should include: identification of the grievant, the respondent, the incident - date, time, place, names of witnesses, the existing rule/policy/established practice claimed to be violated and a brief statement of the desired outcome.
  - c. Within three weeks of receipt of all written materials, the appropriate immediate supervisor will fact-find from involved parties and render a decision in writing via registered mail to the parties involved.

2. The second step, if needed, in the formal resolution phase occurs when and if the faculty or student is not satisfied with the immediate supervisor's resolution of the grievance. The student or the faculty member or University colleague involved may then appeal to the next level of the organizational chart by providing a written account of the grievance process and decision.
  - a. A written account must be submitted to the next level of the organizational chart within two weeks of receipt of the decision rendered by the immediate supervisor (Step 1).
  - b. The written account should include: identification of the grievant, the respondent, the incident - date, time, place, names of witnesses, the existing rule/policy/established practice claimed to be violated, a copy of the decision of the immediate supervisor and a brief statement of the desired outcome.
  - c. Within three weeks of receipt of all written materials, the next level of the organizational chart will fact-find from involved parties and render a resolution in writing to the parties involved.
3. The third step, if needed, in the formal resolution process is to appeal to the appropriate College Dean.
  - a. The College Dean shall be given a written account of the grievance process to date. This must be submitted within two weeks of receipt of the resolution decision rendered by the next person on the organizational chart (Step 2).
  - b. The College Dean shall render a decision in writing to the parties involved within three weeks.
  - c. In the event the Dean's resolution of the alleged academic grievance is not satisfactory to either party, the appeal shall be directed to the Provost and Vice President of Academic Affairs.
4. The fourth step, if needed, in the formal resolution process is to appeal to the Provost and Vice President of Academic Affairs. This step must be initiated within two weeks of receipt of the College Dean's decision.
  - a. The Provost and Vice President of Academic Affairs shall review the written appeal and response(s) to make a determination whether or not there are sufficient grounds to hold an appeal hearing.
  - b. If there are insufficient grounds to hold an appeal hearing, the decision of the College Dean will be upheld.
  - c. If there are sufficient grounds to hold an appeal hearing, the Provost shall establish an ad hoc grievance appeal panel.
    - i. A grievance appeal hearing panel would be established on an ad hoc basis and consist of five members for each case. The grievance appeal hearing panel shall be convened by the Provost and Vice President for Academic Affairs. The panel shall be composed of the Provost and Vice President for Academic Affairs, or her/his designee (serves as Chair), two faculty representatives chosen from the Faculty Senate, and two student representatives chosen from the Student Government Association. The Provost and Vice President for Academic Affairs, or her/his designee shall have a vote only in event of a tie.
      1. The panel members shall conduct the business of the appeal in strict confidence, and in private. The meetings and deliberations of the panel shall be closed.
      2. The panel members shall have access to the written appeals and each person involved in the grievance.
      3. The panel decision shall be communicated in writing to the student, faculty member, College Dean and program director.
      4. The decision of the grievance appeal panel must be submitted in writing by registered mail to both parties. This communication should include an opportunity for a member of the panel or the Provost and Vice President for Academic Affairs to debrief or otherwise provide further assistance to either party.
      5. The decision of the grievance appeal panel is final.

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## STUDENTS CLASSIFIED AS “UNDECIDED”

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Choosing a major is one of the most important, and sometimes difficult, decisions to make in college. Often students have a specific interest in a concentrated area, such as science or engineering, but are “undecided” as to which major to pursue. Gannon offers students the option to begin their studies while being classified as “Undecided.” This allows them to complete core courses without making a premature decision. Once a major is decided upon, and the student has received permission from the department, a Change of Major form (available in the Dean’s Office) must be completed and submitted to the respective Dean’s Office. All students must declare a major in order to graduate. No student may graduate as an “undecided” student.

Students classified as *Undecided* may earn no more than 24 credits in that classification. Upon completion of 24 credits the student must select a major and be accepted into that major or they will be removed by the Dean and placed into the Undeclared category and will be referred to Career Development and Employment Services (CDES). A Change of Major form will be completed and processed by the advisor. The Registrar’s Office will be notified of any courses that may need to be dropped. The Registrar’s Office will remove advisor approval for registration until the student has successfully met with the CDES staff and has been advised according to the Undeclared requirements.

If permitted by the program, students who fail to meet minimum academic standards in their major program of study may be placed into an Undecided major for one semester to attempt to raise their GPA and return to their original major. If they remain academically ineligible for their original major after one semester in the Undecided category, they will be administratively moved to Undeclared status and the same process as described above will be followed.

The following is a list of Undecided classifications at Gannon:

- Education
- Business
- Computing
- Engineering
- Health Sciences
- Humanities
- Sciences

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## TRANSCRIPT POLICY

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The student’s authorization and written signature are needed to release a transcript. The student can request the transcript in person in the Registrar’s office, can write a letter addressed to the Registrar’s office, online or can FAX the request.

### To order transcripts online

Gannon has authorized the National Student Clearinghouse to provide transcript ordering via the Web. You can order transcripts using any major credit card. Your card will only be charged after your order has been completed.

- \* To order an official transcript(s), login to the Clearinghouse secure site ([www.studentclearinghouse.org](http://www.studentclearinghouse.org)). Click on orange tab on the right side and select ‘Order or track a transcript.’
- \* The site will walk you through placing your order, including delivery options and fees. You can order as many transcripts as you like in a single session. A processing fee will be charged per recipient.
- \* Order updates will be emailed to you. You can also track your order online.

**Official transcripts must be mailed directly from the Registrar's office to the party requested. All transcripts given directly to the student will be stamped 'Issued directly to the student'.**

Students who need transcripts to submit unopened with applications should request that the transcript be issued to them in a sealed envelope. The transcript is stamped "Issued directly to the student," has the Registrar's signature and the school seal. The envelope is sealed and has the Registrar's signature. The student must submit the transcript in the unopened envelope with the application. If the envelope is opened it is no longer valid as an official transcript.

Transcripts are not released for students with financial holds.

Partial transcripts are not issued. Each transcript includes the complete academic record at Gannon University and work accepted from other colleges.

Official transcripts of credit earned at other institutions which have been presented for admission or evaluation of credit and have become a part of the student's permanent record in this office are not reissued or copies duplicated for distribution. Transcripts from other institutions must be official and received by Gannon University directly from the original institution(s). Copies issued to the students with the college seal will not be accepted. This also applies to high school transcripts.

Transferred credit is not added to the Gannon University transcript unless it is applicable toward a degree at Gannon University. Transfer grades are not put on the Gannon transcript.

**ACCESS TO STUDENT RECORDS** In accordance with the 1975 Family Educational Rights and Privacy Act, the University has established a policy concerning access to student records. The full policy is available upon request from the Registrar's Office. The following items are included here because of their general interest:

1. Grade reports, probation and suspension letters, and other correspondence are sent directly to all students at their home address.
2. Access to student records is permitted only upon receipt of a written release by the student.
3. Students may have access to parental financial records submitted in support of financial aid applications.
4. With certain exceptions, each student has access to his or her personal and academic records.
5. Students may request that directory information not be released to anyone.

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## **WITHDRAWAL FROM THE UNIVERSITY**

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Students who find it necessary to withdraw from the University must fill out a withdrawal form available in the Student Success Center. Students can complete a temporary withdrawal (2 semesters or less) or a complete withdrawal. Students who withdraw for medical or mental health reasons must present appropriate documentation at the time of the withdrawal. These documents will be reviewed by the director of Gannon's Health Center or Counseling Services and could impact any refund as well as conditions for readmission to the University.

The withdrawal process includes an exit interview with staff from the Student Success Center, student's academic advisor, Cashier's office, Financial Aid office, the Registrar's office, and, when applicable, the Office of Residence Life, International office, Health and Counseling Center. Students must complete the withdrawal process within two working days from the date they start the process in the Student Success Center. Forms that do not reach the Registrar's office with all of the required signatures will be considered incomplete and the student will not be withdrawn from the University.

Failure to comply with this regulation may result in the assignment of a grade of 'F' for all courses in which the student is currently enrolled and possible separation from the University. The student may also forfeit any rights of readmission to the University. When students withdraw they should refer to the Academic Calendar for the last day to withdraw from a course in order to receive withdrawal (X) grades. Withdrawal after this date will result in 'F' grades unless permission is granted by the student's Academic Dean.

Every student receiving a federal grant and/or loan who completely withdraws officially or unofficially within the first 60% of the semester will be subject to a **Title IV Return of Federal Funds review**. This review will determine the portion of federal funds the student earned and the portion of federal funds the school must return to the Department of Education. **Please refer to the Refund Policy in the University catalog for complete details.**

Students that receive all F's for a semester, who did not formally withdraw, will be reviewed by the Financial Aid Administrator to establish the students' last date of attendance. If a student ceased attendance for all classes before 60% of the semester was over, that last date of attendance will be used. If a last date of attendance cannot be determined, the Financial Aid Administrator is required to process an "unofficial" withdrawal date using the mid-point of the semester to calculate unearned federal funds that must be returned to the appropriate federal aid program.

Students need to understand that, although they can withdraw from a semester with X grades, the Financial Aid Administrator must review and adjust federal aid disbursements made to any student receiving federal grants and/or loans based on their last date of attendance or unofficial withdrawal date. The student is responsible for any returned federal funds that results in a balance due on their student account. If payment is not made, the student will be liable for all reasonable collection costs, including attorney fees and other charges necessary for the collection of any amount not paid.

# Special Programs

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## UNIVERSITY HONORS PROGRAM

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ANN BOMBERGER, Ph.D., *Director*

### Catalyst for Achievement

We live in rapidly changing times.

The ability to adapt to change, think critically, excel in written and spoken communication, and embrace diversity all are vital to leaders of the 21st century.

Gannon's honors students are academically talented and highly motivated students. Our curriculum prepares them to be ethical, thoughtful, and effective leaders with a global world view.

### Additional benefits:

- Honors classes are capped at 15 students. The classroom setting encourages close contact between students and teachers and facilitates students taking an active role in their learning.
- Some of Gannon's best professors teach in our program.
- Honors students travel to conferences, museums, and other cultural activities as part of the program and have opportunities for international travel.
- Students receive special recognition at the graduation exercises and on their academic transcript.
- Our students have priority registration.
- Honors students are eligible for additional study abroad scholarships.

### Special Features

*Student Advisory Board and the Student/Faculty Honors Committee*

Students are actively involved in the governance of the program through the Student Advisory Board (SAB) and the joint faculty/student Honors Committee. The SAB makes recommendations on policy and is responsible for assisting the director in running the program. The board also oversees the committees that are responsible for providing a variety of social, service, and cultural events. The faculty/student Honors Committee makes curricular and long-term policy decisions.

*Conferences and Travel*

The Honors Program holds memberships in the National Collegiate Honors Council (NCHC) and the Northeast Region of NCHC. Students have participated in conferences sponsored by these organizations in New Orleans, Baltimore, Chicago, St. Louis, Niagara Falls, and Denver.

*University Honors Center*

The Honors Center functions as a hub for the activities sponsored by the program. It features a study lounge with personal computers, printers, a treadmill desk, couches, and a seminar room. The center is a comfortable place, conducive both to studying and socializing with fellow students and faculty members.

### Application Requirements

Admission to the program is based on academic achievement and potential. The following criteria are considered:

- Essay
- High school grade point average of 3.3 or higher
- Courses taken
- SAT/ACT scores
- Class rank
- Participation in extracurricular and co-curricular activities
- Recommendation from a high school teacher

Admission to University Honors for students already enrolled at Gannon University is based on an evaluation of:

- Cumulative Grade Point Average
- Faculty recommendations

To remain in good standing, students must:

- Maintain at least a 3.25 GPA each semester
- Attend monthly honors meetings
- Attend at least 5 events per year
- Complete service hours annually
- Participate in a committee, at least for their freshman year

### **Recognition at Graduation**

#### **Honors Scholars**

At graduation students are designated as Honors Scholars if they

- have maintained good standing in the University Honors Program
- have earned 24 credits in honors courses
- have completed five hours of service per year through the honors program
- have EITHER taken six credits of a foreign language OR completed an additional 15 hours of service per year (for a total of 20 hours of service per year, 5 through the honors program).

#### **Associate Honors Scholars**

At graduation students are designated as Associate Honors Scholars if they

- have maintained good standing in the University Honors Program
- have earned 18 credits in honors courses
- have completed five hours of service per year through the honors program
- have EITHER taken six credits of a foreign language OR completed an additional 10 hours of service per year (for a total of 15 hours of service per year, 5 through the honors program).

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## **SAINT MARK'S SEMINARY**

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Rev. Michael T. Kesicki, *Rector*

Rev. Nicholas J. Rouch, *Vice-Rector*

In cooperation with the Diocese of Erie, Gannon University offers a variety of academic degree programs to students training for the diocesan priesthood in the Formation Program of St. Mark's Seminary. The immediate aim of the college level formation for the candidate for the priesthood is to help him to mature as a liberally educated human person, committed to Christ and to the service of his neighbor.

Bishop Lawrence Persico, Ordinary of the Erie Diocese, responding to the aims and objectives of the United States Conference of Catholic Bishops, continues a 64 year tradition begun by the University's founder, Archbishop John Mark Gannon. The seminarian's academic life at the University is complemented by programs of personal and spiritual development in residence at St. Mark's Seminary.

College seminarians matriculate as full-time students in one of the three colleges of the University. The wide-range of academic programs enables the seminarians to have close contact with their peers and University professors.

Academic Requirements

- A. Seminarians must be full-time students in good standing at Gannon University in a bachelor's degree program or in the two-year pre-theology studies program.
- B. While Philosophy remains a highly recommended major for preparation for graduate studies in theology, some other majors offered by Gannon University are deemed appropriate. The choice of an undergraduate major as well as a change from one to another must have specific approval of the St. Mark's Faculty.
- C. Regardless of major, all seminarians beginning as freshmen are required to include in their four-year programs of study the following courses.

1. Philosophy .....30 credits required as a minimum

- Introduction to Philosophy (LPHI 131)
- Philosophy of God (LPHI 233)
- History of Medieval Philosophy (PHIL 273)
- Logic (PHIL 210)
- Philosophy of Knowledge (LPHI 235)
- Philosophy of Ethical Responsibility (LPHI 237)
- Introduction to Metaphysics (PHIL 350)
- History of Ancient Philosophy (PHIL 271)
- History of Modern Philosophy (PHIL 280)
- History of Contemporary Philosophy (PHIL 286)

Total: 30 credits

2. Theology .....12 credits

- (a.) Sacred Scripture (LTHE 121) 3
- (b.) The Catholic Tradition (LTHE 223) 3
- (c.) Theology of Moral Responsibility (LTHE 227) 3
- (d.) Theology Elective (one course) 3

Total: 12 credits

3. Latin .....12 credits

- (a.) Introductory Latin I (LATN 111) 3
- (b.) Introductory Latin II (LATN 112) 3
- (c.) Intermediate Latin I (LATN 121) 3
- (d.) Intermediate Latin II (LATN 122) 3

Total: 12 credits

- D. All students pre-register twice per year after consulting with the St. Mark Academic Advisor.
- E. All students must be full-time to a maximum of nineteen (19) semester hours unless specific approval for more than nineteen (19) hours or less than fifteen (15) hours is secured from the St. Mark's Academic Advisor. A fifteen (15) hour load is the norm for seminarians.
- F. Students are not permitted to take late afternoon or evening classes without the specific approval of the St. Mark's Academic Advisor. The normal time for all classes to be finished is 3:00 p.m.



### Two Year Pre-Theology Program

A program of studies is designed for each man entering the two year pre-theology program. Consideration is given to his undergraduate degree and any graduate work which he has done and his needs in preparation for theological studies, especially with regard to the minimum hours of philosophy and theology.

### Spiritual Formation

The Formation Program through seminary life at St. Mark's might best be described as both a place and a process for men to explore the possibility that Christ might be inviting them to make a lifelong commitment to priesthood. This decision cannot be made alone. It is the decision of the individual but it is also the decision of the Church. The individual comes together with others who understand and share in that search in a directed way called the Formation Program.

### Information/Application

Inquiries for additional information and/or to apply for seminary status may be directed to:

Rector, St. Mark Seminary  
P.O. Box 10397  
Erie, Pennsylvania 16514-0397  
Day Phone: (814) 824-1200  
Evening: (814) 824-1201

Vocation Director  
P.O. Box 10397  
Erie, Pennsylvania 16514-0397  
Day Phone: (814) 824-1135

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## LEARNING ABROAD

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### Learning Abroad Initiative

Gannon students have the opportunity to go abroad during the fall, spring, or summer semesters, or take a short-term faculty-led travel course for academic credit.

Gannon has established partnerships with the following universities:

- American University of Madaba (Jordan)
- American University of Rome (Italy)
- Australian Catholic University (Australia)
- Mary Immaculate College (Ireland)
- Pontificia Universidad Católica de Valparaíso (Chile)
- Hochschule Osnabrück University of Applied Sciences (Germany)
- Maria Curie – Skłodowska University (Poland) (MBA students only)
- St. Edmund Hall University of Oxford (England)
- Hochschule ESSLINGEN University of Applied Science (Germany)

For those students accepted into these programs, university aid will apply; all state and federal funding, as well as student loans, can be used toward tuition, room, board and fee expenses. Students who meet the minimum GPA requirement of 3.0 are eligible to apply for an additional Learning Abroad Scholarship.

Students have the opportunity to participate in the GIFT (Gannon: Inspired Faculty-led Travel) Program and travel with faculty members while taking courses that fulfill Liberal Studies Core requirements as well as major and minor requirements and electives. Courses offered in the GIFT Program include:

- Global Project Management in Sweden\*
- Occupational Therapy and Nursing in India\*
- Fine Arts in Paris
- Archaeological Excavation in Jordan\*

- Tropical Marine Biology in the Bahamas\*
- Catholic Social Teaching Immersion in Florida
- Leadership Seminar in Thailand\*
- Spanish for Medical Professionals in Puerto Rico\*
- Climate Change in Iceland\*
- Literature Studies in England and Wales
- Field Zoology/Biology in Yellowstone National Park\*
- International Sport, Wellness, and Recreation in China
- Nursing in Mexico
- Poetry and Roman Mythology in Italy
- Business Management in France
- Theological Implications of the Holocaust in Poland/Prague\*

Students who participate in the GIFT Programs marked with an asterisk will receive a guaranteed scholarship of up to \$500.

Any student participating in a faculty-led travel course who meets the minimum GPA requirement of 3.0 is eligible to apply for an additional Learning Abroad Scholarship, even if they receive a guaranteed GIFT scholarship.

Affiliates include:

- American Institute for Foreign Study (AIFS)
- Global Student Experience (GSE)
- CEA Global Education
- Spanish Studies Abroad
- Center for Global Education at Augsburg College
- GlobalLinks: AustraLearn / AsiaLearn / EuroLearn
- Arcadia University

Studying abroad is more than just paying to study outside the United States. It is learning about new traditions and cultures, exploring your academic field in another country, seeing this beautiful planet, and becoming a global citizen.

Imagine studying marine biology in the Bahamas, observing wildlife in their natural habitat at Yellowstone National Park, spending an entire semester in one of Australia's major cities, teaching English to students in Thailand, or wandering the ancient ruins of Rome's coliseum and Roman Forum during a semester in Italy. With Gannon, your possibilities abroad are endless.

Students interested in going abroad should visit [www.gannon.edu/learningabroad](http://www.gannon.edu/learningabroad), fill out an interest form and send it to [studyabroad@gannon.edu](mailto:studyabroad@gannon.edu) or visit the office located on the 3rd Floor of Beyer Hall, Office 305D.

# Liberal Studies Core Curriculum

The Liberal Studies Core Curriculum is one reflection of Gannon University's commitment to its Catholic identity. The Core's design offers students a defined, integrated, shared experience as the foundation for their undergraduate program. The Core balances choice and flexibility with breadth of exposure to multiple disciplines as well as interdisciplinary learning; in-depth cross-cultural understanding through service learning and other activities; a rich first-year experience, including participation in a learning community and engaging in LIFECORE events; the opportunity to develop their leadership skills informed by ethical and moral reasoning; and a culminating senior capstone course featuring an experiential dimension. Thus, the Core provides a sense of immediacy and relevancy of their learning to students' lives.

## Learning Outcomes

Through Gannon's Liberal Studies core curriculum, students will achieve two overarching goals. First, they will apply to their personal and professional lives Gannon's core values—respect, service, community, sacramentality, and the dialogue between faith and reason—as expressed in the Gannon University document, *On Catholic Identity*. Second, they will be engaged learners now and throughout their lives, demonstrating intellectual curiosity and holistic academic skills. In order to meet these goals, students:

1. Synthesize their learning in academic disciplines with their learning outside the classroom and apply the knowledge gained to their personal and professional lives.

The Liberal Studies Core Curriculum is designed to assist students as they answer the question, "How shall I live my life?" To do so, students should synthesize rather than compartmentalize their learning. The learning in one academic discipline should be connected to their learning in others and their in-class experiences linked to their out-of-class lives. The LIFECORE Program helps students understand that people are multidimensional by addressing nine areas: spiritual, intellectual, cultural, political, social, emotional, sexual, physical, and life-planning.

2. Read and listen actively and write and speak with clarity, originality, and persuasiveness across a variety of contexts.

In order to become more effective communicators, students should strengthen their skills in reading, writing, speaking, and listening. They should identify, find, understand, evaluate, and use information from a variety of sources and convey that information to others effectively and responsibly.

3. Reason aesthetically, quantitatively, and scientifically.

Students should develop a range of approaches for analysis and evaluation. They should appreciate beauty and develop criteria for making aesthetic judgments both about works traditionally considered "artistic" and about works not traditionally considered "artistic." They should understand how others quantify information and be able to do so themselves. They should understand and apply scientific approaches used in a variety of disciplines.

4. Demonstrate appreciation for and apply their understanding of diverse religions, cultures, societies, and individuals.

Students should go beyond simply recognizing that difference exists and reciting characteristics that distinguish one group or person from another. Instead, they should

engage with and appreciate multiple personal, cultural, and social perspectives regarding such issues as race, nationality, spirituality, gender, age, sexual orientation, and disability. They should understand that appreciation in this context does not imply unqualified approval; rather, it means seeking the expressions of truth, goodness, and beauty found in diverse religions, cultures, societies, and individuals.

5. Collaborate effectively to practice leadership based on principles of ethics and social justice.
- Students should develop a repertoire of leadership skills and learn to use those skills responsibly in the various communities to which they belong. Ethical and social justice teachings provide rich traditions from which students can draw lessons about responsible leadership.

These competency-based learning outcomes derive from the development and demonstration of knowledge. Students know:

1. Fundamental terms, theories, principles, and concepts of the following types:
  - a. Theological
  - b. Philosophical
  - c. Cultural/interpersonal
  - d. Scientific
  - e. Historical/political
2. Vocabulary and strategies related to the following activities:
  - a. Communicating
  - b. Analyzing and evaluating art
  - c. Determining a need for, locating, evaluating, and using information
  - d. Mathematical reasoning
  - e. Developing strategies for personal well-being
  - f. Leadership
  - g. Using technology effectively

**Overview of Liberal Studies Core Curriculum**

The Liberal Studies Core Curriculum consists of three primary components: the Foundational Core, the Developmental Core, and the Intensive Core. The Foundational Core provides students with knowledge and competencies appropriate to Catholic higher education and serves as the basis for their learning in other courses and in their lives outside the classroom. The Developmental Core courses are linked to foundational courses and thus provide students with a sequence of coherent, integrative learning experiences designed to foster analysis and synthesis. The Intensive Core provides students with breadth of learning across multiple disciplines.

**Foundational Core**

- |            |   |
|------------|---|
| 6 credits: | Theology  |
|            | <ul style="list-style-type: none"><li>• Introduction to Sacred Scripture (LTHE 121)</li><li>• Second course chosen from multiple options (see list below)</li></ul> |
| 6 credits: | Philosophy  |
|            | <ul style="list-style-type: none"><li>• Introduction to Philosophy (LPHI 131)</li><li>• Second course chosen from multiple options (see list below)</li></ul>       |
| 3 credits: | Theology or Philosophy ethics course (LTHE 227, LPHI 237, or met in major)  |
| 3 credits: | History Without Borders (LHST 111)  |
| 6 credits: | Writing   |
|            | <ul style="list-style-type: none"><li>• College Composition (LENG 111)</li><li>• Critical Analysis and Composition (LENG 112)</li></ul>                             |

**Developmental Core**

- 2 credits: First-year Seminar (may be met in major)  
 1 credit: Leadership Seminar (may be met in major)  
 3 credits: Senior Capstone (LBST 383 or met in major)

**Intensive Core**

- 3 credits: Speech (SPCH 111, 113, 115 or met in major)  
 3 credits: Fine Arts (see list below or met in major)  
 3 credits: Literature (see list below or met in major)  
 3 credits: Social Science (see list below or met in major)  
 3 credits: Mathematics (see list below or met in major)  
 3 credits: Science (see list below or met in major)

**Literature Series Options/LENG**

ENGL 352	Modern/Contemporary Drama	LENG 249	Women Writers
LENG 241	Prose Literature	LENG 250	Fantasy and Science Fiction
LENG 243	Drama	LENG 251	Literature and the Healing Arts
LENG 245	Poetry	LENG 252	Reading Autobiography
LENG 247	Introduction to Literature	MLED 201	Adolescent Literature/Practicum

**Fine Art Series Options/LFIN**

EDCR 302	Expressive Arts	LFIN 253	Introduction to the Visual Arts
ENGL 250	Introduction to Photography	LFIN 254	Art of Film
FINA 390	American Architecture	LFIN 310	Music in Medicine
LFIN 250	Theatre and Culture	MUSC 231	Beethoven and Influence
LFIN 251	Introduction to Music	MUSC 250	Music and Psychology
LFIN 252	Women in Photography	MUSC 251	Music in Advertising and Mktg.

**Philosophy II Series Options/LPHI**

LPHI 233	Philosophy of God	PHIL 250	Comparative World Philosophy
LPHI 235	Philosophy of Knowledge	PHIL 271	History of Ancient Philosophy
LPHI 239	Philosophy of Science	PHIL 273	History of Medieval Philosophy
LPHI 240	Philosophy of Education	PHIL 280	History of Modern Philosophy
MGMT 360	Ethical Social Responsibility	PHIL 286	History of Contemporary Philosophy
PHIL 210	Logic	PHIL 290	Philosophy & Law
PHIL 225	Philosophy of Communication	PHIL 345	Philosophy of History
PHIL 233	Philosophy of God	PHIL 350	Introduction to Metaphysics
PHIL 235	Philosophy of Knowledge	PHIL 365	Modern Existentialism
PHIL 238	Business Ethics	PHIL 383	American Philosophy
PHIL 239	Philosophy of Science	SPCH 225	Philosophy of Communication
PHIL 240	Philosophy of Education		
PHIL 248	Women in Western Philosophy		

**Speech Options/SPCH**

SPCH 111	Public Speaking	SPCH 115	Presentational Strategies
SPCH 113	Human Communication & Society		

**Theology II Series Options/LTHE**

LTHE 223	Catholic Tradition	THEO 334	The Theology of John and Paul
LTHE 225	Protestant Tradition	THEO 342	Jesus Christ: Yesterday, Today and Forever
LTHE 228	Vatican II and the Catholic Tradition		
LTHE 265	Good-Evil: Reconciling the Holocaust	THEO 344	The Theology of Church
LTHE 255	Jesuit Tradition	THEO 345	The Theology of Worship
LTHE 265	Good & Evil: Reconciling the Holocaust	THEO 346	Women and the Pilgrim Church
THEO 240	Faith, Revelation and Theology	THEO 347	The Theology of Marriage
THEO 320	Hebrew Bible I: Torah	THEO 361	Christianity & World Religions: Western Tradition
THEO 321	Hebrew Bible II: Prophets		
THEO 322	Hebrew Bible III: Writings	THEO 362	Christianity & World Religions: Eastern Tradition
THEO 333	The Synoptic Gospels		

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**Theology/Philosophy III Series Options/LTHE or LPHI**

LPHI/PHIL 237 Philosophy of Ethical Responsibility

LTHE 227 The Theology of Moral Responsibility

**Social Science Options**

ARCH 201	Archaeology and History of Ancient Near East	POLI 111	U.S. Government and Politics
ARCH 302	Becoming Human-Becoming the World	POLI 122	Public Policy Analysis
BCOR 111	Principles of Microeconomics	POLI 133	Introduction to International Relations
BCOR 112	Principles of Macroeconomics	PSYC 111	Introduction to Psychology
ECON 285	Project Economics	SCWK 212	Social Problems, Services and Solutions
EDCR 101	Psychology of Learning and Teaching	SCWK 221	Human Behavior Social Environment I
HIST 110	Foundations of Western Heritage	SOCI 110	Basic Sociology
HIST 221	or higher	SOCI 120	Individual, Culture and Society
HIST 302	Becoming Human-Becoming the World	SOCI 292	Cultural Anthropology

**Science Options**

ARCH 202	Archaeology Methods and Lab	CHEM 111	General Chemistry I
BIOL 103	Environmental Issues	CHEM 121	Introduction to Nanotechnology
BIOL 383	Tropical Marine Biology	CHEM 166	Issues in Science and Technology
CHEM 102	Introduction to Organic and Biochemistry	ENG 201	Engineering and Biological Wonders of Panama
CHEM 103	Chemistry of Life I	PHYS 101	Concepts in Physics

**Mathematics Options**

CRJS 360	Criminal Justice Statistics	MATH 115	Business Calculus
MATH 103	Quantitative Literacy	MATH 135	Precalculus
MATH 105	Fundamentals of Mathematics	MATH 140	Calculus 1
MATH 110	Mathematics in Human Progress	MATH 141	Calculus 2
MATH 111	College Algebra	MATH 213	Applied Statistics
MATH 112	Trigonometry	PSYC 211	Psychological Statistics I
MATH 114	Business Algebra	SOCI 351	Statistics for the Social Sciences

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**COURSE DESCRIPTIONS**


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**Liberal Studies/First-Year Seminar**

The First-Year Seminar is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECore, to assist in the transition from high school to university life, and to encourage development of academic, personal and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered.

(Freshman are expected to complete the First-Year Seminar during the first semester at Gannon. If not, the student must complete the requirement prior to the sophomore year.)

*2 credits***First Year Seminars:**

BIOL 100	First-Year Seminar	LHPS 101	First-Year Seminar
CIS 103	First-Year Seminar	LIBR 100	First-Year Seminar
COMM 161	First-Year Seminar	MATH 100	First-Year Seminar
CRJS 108	First-Year Seminar	NURS 101	First-Year Seminar 1

EDCR 104	First-Year Seminar	NURS 102	First-Year Seminar 2
ENG 100	First-Year Seminar	OCCT 108	First-Year Seminar
ENGL 100	First-Year Seminar	PHAS 100	First-Year Seminar
FRSH 110	First-Year Seminar	PSYC 101	First-Year Seminar
HIST 100	First-Year Seminar	SPRT 101	First-Year Seminar
LEGL 100	First-Year Seminar	THEO 100	First-Year Seminar
LHES 101	First-Year Seminar	UNDL 100	First-Year Seminar

### **Liberal Studies/Leadership Seminar**

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in the various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for students' leadership development as reflected both in this course and in the co-requisite Theology or Philosophy III course.

*1 credit*

### **Leadership Seminars:**

CIS 303	Leadership Seminar	LHES 241	Leadership Seminar
COMM 240	Leadership Seminar	LHPS 240	Leadership Seminar
EDCR 240	Leadership Seminar	ME 300	Leadership Seminar
ENGL 240	Leadership Seminar	NURS 320	Leadership Seminar
HIST 299	Leadership Seminar	OCCT 208	Leadership Seminar
LCEB 240	Leadership Seminar	PHAS 300	Leadership Seminar
LHES 240	Leadership Seminar		

### **Liberal Studies/ARCH 201: Archaeology and History of the Ancient Near East**

This course will offer a basic survey of the archaeological culture and history of the ancient Near East, including the Biblical Lands of Israel and Transjordan and contemporary societies in neighboring Mesopotamia and Egypt. The purpose of this particular course is specifically to introduce the student to a broad sweep of civilizations, peoples, and ancient life ways, dating primarily to the Bronze and Iron Ages (4th - 1st millennia BCE roughly).

*3 credits*

### **Liberal Studies/ARCH 302: Becoming Human—Becoming the World**

This course intends to study culture continuity and change by concentrating on the most important turning points and developments in Asia, Europe, Africa, and the Americas, covering the time span from Human Origins to the edge of the Renaissance. The orientation is global, the themes integrative, the overall goal being to show interconnections in the development of civilization(s), along with divergence across cultural and societal boundaries. The course stresses the archaeological and textual evidence. Some of the over-arching themes that express both culture and cultural diversity in antiquity include: becoming human, first states, nomadic movements, empires, and universal religions.

*3 credits*

### **Liberal Studies/BCOR 111: Principles of Microeconomics**

This course focuses on an understanding of basic economics from a microeconomic standpoint. The specific topics explored will be scarcity, supply and demand, cost-production decision making, the operation of the firm in the product market under varying assumptions of competition, monopolistic competition, monopoly, oligopoly and the operation of the firm in the factor market.

Prerequisite: High School Algebra

*3 credits*

### **Liberal Studies/BCOR 112: Principles of Macroeconomics**

This course seeks to develop an understanding of macroeconomic issues and theory and their application to current problem areas such as unemployment, economic growth and inflation. Additionally, the role of money, financial institutions, and the effectiveness of economic policy regarding control of the macroeconomy are explored.

Prerequisite: High School Algebra

*3 credits*

**Liberal Studies/BIOL 103: Environmental Issues**

This course is a study of our environment and some of the interactions between humans and their surroundings. The course analyzes through an interdisciplinary approach how humans and their social institutions interact with physical and biological systems of the environment. The course surveys the most urgent environmental health problems facing humanity today. *3 credits*

**Liberal Studies/BIOL 383: Tropical Marine Biology**

This course is open to all students regardless of major and fulfills the Liberal Studies Core Science requirement. The course is offered over spring break in the Bahamas, where students investigate ecological systems such as coral reefs, mangroves, beaches, tidal pools, and inland habitats. *3 credits*

**Liberal Studies/CHEM 166: Issues in Science and Technology**

Designed to present the principles of science, particularly chemistry, to enable one to better understand the world. It is also designed to not only improve the student's ability to understand current problems, but also provide the basis for understanding future developments in the area of science and technology as they relate to the environment. *3 credits*

**Liberal Studies/ECON 285: Project Economics**

This course develops the techniques necessary for understanding economic price theory, the time-value of money, and the basic issues surrounding organizational architecture. These include issues surrounding supply and demand, cost-production, decision making and market models. In particular, the course focuses on the application of these economic theories to projects, including issues surrounding risk analysis and triage, budgeting, planning, and scheduling necessary to the successful completion of a project.

Prerequisite: High School Calculus (MATH 140 or MATH 115 or equivalent) *3 credits*

**Liberal Studies/ENGL 352: Modern/Contemporary Drama**

A critical approach to significant drama from Ibsen to the present and to the intellectual forces and assumptions that contribute to their development.

Prerequisites: LENG 111, LENG 112 *3 credits*

**Liberal Studies/HIST 110: Foundations of Western Heritage**

The most important ideas, issues, problems, and developments that mark the changing fortunes of the West from the Ancient World to the end of the Wars of the Reformation (ca.1648).

*3 credits*

**Liberal Studies/HIST 302: Becoming Human–Becoming the World: World History I**

This course intends to study culture continuity and change by concentrating on the most important turning points and developments in Asia, Europe, Africa, and the Americas, covering the time span from Human Origins to the edge of the Renaissance. The orientation is global, the themes integrative, the overall goal being to show interconnections in the development of civilization(s), along with divergence across cultural and societal boundaries. The course stresses the archaeological and textual evidence. Some of the over-arching themes that express both culture and cultural diversity in antiquity include: becoming human, first states, nomadic movements, empires, and universal religions. *3 credits*

**Liberal Studies/LBST 383: Senior Seminar**

The Liberal Studies Program includes an Integrating Seminar to be taken in the senior year. The primary objective of the seminar is to provide the student with an opportunity to integrate the concepts and methodologies presented in earlier Liberal Studies courses. *3 credits*

**Liberal Studies/LHST 111: History Without Borders**

The most important ideas, issues, problems, and developments that mark the changing fortunes of the West's interaction with the world from the Seventeenth Century to the present. *3 credits*

**Liberal Studies/LENG 111: College Composition**

The principles of logic, rhetoric, and language and their use in written discourse. Application



of these theories to numerous reading and writing assignments. Much attention to basic writing skills.

*3 credits*

**Liberal Studies/LENG 112: Critical Analysis and Composition**

Development of the reading, research, and writing skills needed to use library resources to solve problems in a variety of disciplines, and relate these solutions to appropriate audiences.

Prerequisite: Liberal Studies/LENG 111

*3 credits*

**Liberal Studies/LENG 241: Prose Literature**

This course helps students develop an appreciation, understanding and evaluation of prose literature as it reflects human experience in diverse cultural contexts.

Prerequisites: Liberal Studies/LENG 111, 112

*3 credits*

**Liberal Studies/LENG 243: Drama**

This course helps students develop an appreciation, understanding and evaluation of drama as it reflects human experience in diverse cultural contexts. It includes an examination of tragedy, comedy, and tragicomedy from their cultural origins to the present.

Prerequisites: Liberal Studies/LENG 111, 112

*3 credits*

**Liberal Studies/LENG 245: Poetry**

This course helps students develop an appreciation, understanding and evaluation of poetry as it reflects human experience in diverse cultural contexts.

Prerequisites: Liberal Studies/LENG 111, 112

*3 credits*

**Liberal Studies/LENG 247: Introduction to Literature**

This course helps students develop an appreciation, understanding and evaluation of literature as it reflects human experience in diverse cultural contexts. The course focuses on the essential elements of prose, drama, and poetry.

Prerequisites: Liberal Studies/LENG 111, 112

*3 credits*

**Liberal Studies/LENG 249: Women Writers**

This course helps students develop an appreciation, understanding, and evaluation of literature written by women as it reflects women's experiences in diverse cultural and historical contexts. The course focuses on the essential elements of prose, drama, and poetry.

Prerequisites: LENG 111, LENG 112

*3 credits*

**Liberal Studies/LENG 250: Fantasy and Science Fiction**

This course enables students to develop an appreciation and understanding of fantasy and/or science fiction literature and its relationship to human experience in a variety of historical periods and/or cultural contexts. The class will also explore the differences among science fiction, fantasy literature, and other types of literature, like magical realism, that contain fantastic elements. Selected texts vary but will always include a mix of older and contemporary literature, as well as authors of different genders, ethnic backgrounds, and nationalities.

**Liberal Studies/LENG 251: Literature and the Healing Arts**

Literature and the Healing Arts is an interdisciplinary course that uses literature as a means for examining humanitarian issues related to illness and the practice of medicine. Poetry, fiction, memoir, and creative nonfiction written by doctors, nurses, and patients provide the framework for exploring the health care worker-patient relationship and its accompanying moral and ethical issues, historical approaches to healing and their implications for modern medical practices, the effects of illness and disease on the individual's sense of identity and personhood, cultural, racial, and ethnic dimensions of patients and health care, and the emotional and mental challenges of health care workers. This course will benefit students planning careers in medicine, nursing, medical technology, or health administration, but it will also appeal to students of any major with interests in excellent literature or the implications of health care for themselves or their families.

**Liberal Studies/LENG 252: Reading Autobiography**

Students in this course will explore “autobiography” (as literally “self-life-writing”) in a variety of forms. More specifically, students will investigate the cultural and ethical implications of self-life-writing as it has evolved in the past fifty years. Beginning by looking at traditional self-life-writing and ending with a survey of self-life-writing in the digital age, students in the course will analyze, interpret, and evaluate the cultural self-locating performed by autobiographical subjects.

**Liberal Studies/LFIN 250: Theatre and Culture**

An exploration of theatre as an art form. Particular attention is given to examining the role of theatre in culture, focusing on the human being as the creator and consumer of the theatrical experience. *3 credits*

**Liberal Studies/LFIN 251: Introduction to Music**

The aim of this course is to guide the student to a more perceptive and meaningful enjoyment of the art of music. After having been acquainted with musical materials and procedures, the student will be introduced to selected works characteristic of different style periods. *3 credits*

**Liberal Studies/LFIN 252: Women in Photography**

This course examines photography by women in a variety of photographic genres and critical perspectives written by women about photography. Concentration will be on the historical, cultural, stylistic, and aesthetic aspects of selected works. *3 credits*

**Liberal Studies/LFIN 253: Introduction to the Visual Arts**

An introductory examination of the nature and history of the Visual Arts (i.e., painting, sculpture, and architecture). The goal of the course is twofold: (a) to increase the student's appreciation of the intrinsic elements found in works of art, and (b) to make the student more conscious of the various extrinsic conditions which have had an influence on the long history of the visual arts. Class sessions will be devoted to analysis of projected images of selected artworks. *3 credits*

**Liberal Studies/LFIN 254: Art of Film**

The components of film art, primarily as seen in short films; analysis of techniques and meaning of experimental, documentary, animation, and other types of film. *3 credits*

**Liberal Studies/LFIN 310: Music in Medicine**

This course explores the impact of music in the area of medicine and the ways that music can be and is used as a benefit to the patient's medical treatment. Reasons for responses to various types of musical elements and stimuli used in treatment(s) will also be discussed and researched. *3 credits*

**Liberal Studies/LPHI 131: Introduction to Philosophy**

An introduction to the study of philosophy. Beginning with the dawn of philosophical awareness among the ancient Greek philosophers, the course surveys both traditional and modern approaches to the philosophical understanding of the human condition. *3 credits*

**Liberal Studies/LPHI 233: Philosophy of God**

An introduction to the philosophical study of religion, based largely on the tradition of Christian philosophy. Some of the topics include: the concept of God; the evidence for God's existence; the meaningfulness of religious language; analysis of God's attributes, such as omnipotence and omniscience; the possibility of miracles; life after death; the problem of reconciling divine foreknowledge and human freedom; and the problem of reconciling the existence of a loving God with the world's evils.

Prerequisite: LPHI 131

*3 credits*

**Liberal Studies/LPHI 235: Philosophy of Knowledge**

A study of the possibility and validity of human knowledge, together with the criteria of truth. Prerequisite: LPHI 131 *3 credits*

**Liberal Studies/LPHI 237: Philosophy of Ethical Responsibility**

The subject matter of ethics is “the good life and how to live it.” Students will examine a variety of influential approaches to ethics, and will gain skill in applying ethical theory both to practical ethical issues in daily life, and to some of the urgent ethical issues in contemporary society.

Prerequisite: LPHI 131

*3 credits*

**Liberal Studies/LPHI 239: Philosophy of Science**

A historical and philosophical survey of the various understandings of science and scientific method from ancient times to the present. Students will examine the role philosophy has played in formulating and critiquing models of scientific investigation, and will pay attention to the impact science has had in each historical period on religion, society, and views of human nature.

Prerequisite: LPHI 131

*3 credits*

**Liberal Studies/LPHI 240: Philosophy of Education**

A critical examination of the goals and methods of education, especially as they relate to ethics and politics. Readings will be drawn from historical philosophers, such as Plato, Aristotle, Rousseau and Dewey as well as contemporary philosophical analysis of educational institutions.

*3 credits*

**Liberal Studies/PHIL/SPCH 225: Philosophy of Communication**

An analysis of the epistemological foundations underlying all forms of communicative processes from individual gestures to the electronic world-wide media. The course considers philosophical theories used to analyze, describe, and interpret the process of communication. Basic philosophical assumptions of traditional and contemporary philosophers of communication are examined. This course emphasizes the nature of persons, consciousness, and social exchange related to human communication.

Prerequisite: LPHI 131

*3 credits*

**Liberal Studies/PHIL 250: Comparative World Philosophy**

An introduction to the classics of world philosophy. Students will have a survey of some of the greatest contributions of both Western and Non-Western approaches to the major questions concerning issues like the good life, the self, theories of knowledge, reality versus appearance, and philosophical theology. Students will also compare and contrast the answers of these major questions, using a unified standard of critical thought and a unified goal of seeking insight into answers to these major philosophical issues. This course fulfills the Philosophy II Series requirement.

Prerequisite: LPHI 131

*3 credits*

**Liberal Studies/LTHE 121: Introduction to Sacred Scripture**

A study of the Christian concept of God's self-revelation in the history of Israel and climactically in the person and redemptive work of Jesus Christ.

*3 credits*

**Liberal Studies/LTHE 223: The Catholic Tradition**

A study of some of the basic Roman Catholic beliefs concerning Jesus Christ, the Church, Worship and Sacrament.

Prerequisite: LTHE 121

*3 credits*

**Liberal Studies/LTHE 225: The Protestant Tradition**

A study of the development of Christianity with special emphasis on the Protestant Reformation and the thinking of significant contemporary Protestant theologians.

Prerequisite: LTHE 121

*3 credits*

**Liberal Studies/LTHE 227: The Theology of Moral Responsibility**

A study of Christian ethical response based on God's Word in Revelation and in the teachings of the believing community.

Prerequisite: LTHE 121

*3 credits*

**Liberal Studies/LTHE 255: The Jesuit Tradition: Ignatius to Pope Francis**

A study of some of the basic Catholic beliefs concerning Jesus Christ, the Church, worship and sacrament through an Ignatian (Jesuit) lens. This course fulfills the Theology II Series requirement.

Prerequisite: LTHE 121

*3 credits*

**Liberal Studies/MGMT 360: Ethical and Social Responsibility**

This course explores the nature of various interrelationships within the environment of the firm, particularly the relationship with societies and governments, including the effects of globalization of the firm. The responsibilities the firm has when pursuing its objectives and critically assessing the ethical issues associated with managerial decision making are the major focus of the course.

Prerequisite: Junior or Senior status

*3 credits*

**Liberal Studies/POLI 111: U.S. Government and Politics**

The primary goal of this course is to help students understand politics and the political process of the American National Government. It covers the standard features of U.S. politics—the Constitution, federalism, interest groups, political parties, Congress, the presidency, the courts. Students also learn how to analyze political events and how to relate their own values to politics.

*3 credits*

**Liberal Studies/POLI 122: Public Policy Analysis**

Designed to introduce students to public policymaking at the national level of government and acquaint students with the political dynamics of the policy process. Emphasizes the importance of political institutions and their formal procedures, with particular stress on the budget process and presidential agenda setting. Social justice, social welfare, and health and labor policies are also emphasized.

*3 credits*

**Liberal Studies/POLI 133: Introduction to International Relations**

Introduction to the nature of international relations, focusing on the role of the state and international institutions; the role of ideology and culture in international affairs; and the nature of the world economy and the process of globalization.

*3 credits*

**Liberal Studies/PSYC 111: Introduction to Psychology**

A survey of the use of psychological analysis to understand behavior in a variety of domains. Standard introductory topics include: Methodology; Physiological Foundations; Development; Sensation-Perception; Learning; Motivation/Emotion; Social Psychology; Personality and Abnormal Behavior.

*3 credits*

**Liberal Studies/SOCI 110: Basic Sociology**

This course is intended as a general introduction to sociology, i.e., a scientific focus on society, groups, and social behavior. Its purpose is to develop in the student a greater capacity to interpret and evaluate the social world.

*3 credits*

**Liberal Studies/SOCI 120: Individual, Culture, and Society**

The purpose of this course is to present students with conceptual and practical means for recognizing the roles of social structure, culture, and the individual as contributing elements of diversity.

*3 credits*

**Liberal Studies/SPCH 111: Public Speaking**

This course introduces both the theory and the practice of public speaking in a variety of contexts. Students will develop the communication skills necessary to analyze verbal discourse and perform effectively in a variety of public speaking situations.

*3 credits*

**Liberal Studies/SPCH 113: Human Communication & Society**

This course introduces both the theory and the practice of public speaking in a variety of professional contexts. Special emphasis is given to public presentations, interviewing and interacting in group meetings.

*3 credits*

**Liberal Studies/SPCH 115: Presentational Strategies**

This course introduces both the theory and the practice of public speaking in a variety of technologically mediated contexts. Special emphasis is given to students interested in the fields of media and/or performance who wish to develop their performance skills in mediated presentational environments.

3 credits

**Liberal Studies Component of Two Year Programs**

	First-Year Seminar	2
LENG 111	College Composition	3
LTHE 121	Introduction to Sacred Scripture	3
LPHI 131	Introduction to Philosophy	3
SPCH 101	Introduction to Speech	1
	Social Science	<u>3</u>
Total		15

**Liberal Studies Component of Next Step Program**

Students admitted to Gannon with an Associate's degree, Bachelor's degree, or equivalent international degree will be required to complete the following Core courses:

LTHE 121	Sacred Scripture	3
LPHI 131	Introduction to Philosophy	3
LENG	Literature Series	3
LFIN	Fine Art Series	3
	Leadership Seminar	1
LTHE/LPHI	Theology/Philosophy III Series	3
LBST 383	Senior Seminar or approved capstone	3

Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series, and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

Students who have received an Associate Degree from Gannon must fulfill all Liberal Studies Core requirements and do not qualify for the Next Step Program.

# College of Engineering and Business

WILLIAM L. SCHELLER II, PH.D., *Dean*

The College of Engineering and Business is composed of the School of Engineering and Computer Science and the Dahlkemper School of Business. The curriculum of each program within the college builds upon strong analytical skills and emphasizes the application of theory and technology to problem solving in industry and society. Graduates have the necessary knowledge, skills, and values to compete in a global market. All of the programs within the college build upon the mission of Gannon University and provide the foundation for life-long learning.

## **Mission Statement**

The College of Engineering and Business prepares our students to be leaders by teaching theory, problem-solving skills, and socially responsible decision-making. Our students and faculty collaborate with external organizations in design projects, internships, and research projects to promote excellence in education, practical knowledge, and life-long learning.

## **Vision Statement**

The College of Engineering and Business will be regionally recognized for its:

- 1) Outstanding faculty who are scholars as well as innovators in the classroom
- 2) Excellent and motivated students who excel through active and collaborative learning
- 3) Service to the local and global community through classroom projects, research, and internships
- 4) Cutting-edge curriculum that involves external partners to build practical skills with an emphasis on entrepreneurship, and renewable and alternative energy
- 5) Interdisciplinary research that contributes new knowledge to the field.

**The CEB holds the following values:**

1. Respect for others
2. Integrity and honesty in all actions
3. Commitment to continuous improvement
4. Creativity in finding solutions
5. Working collaboratively

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## DAHLKEMPER SCHOOL OF BUSINESS

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### **Mission Statement**

Our mission is to serve as a center of business entrepreneurship and innovation, to provide an excellent education in all areas of business from a values-centered and global perspective and to develop leaders to transform the world of business.

### **Vision Statement**

Our vision is to become a leading school of business thought, practice and action by developing a reputation for preparing business leaders to transform business and make the world a better place to work and live.

**Core Values of the Dahlkemper School of Business**

- The DSB provides and promotes excellence in teaching, scholarship and service.
- The DSB provides values-centered learning experiences and promotes and recognizes ethical and socially responsible behavior in business.
- The DSB promotes, practices and recognizes leadership in business.
- The DSB promotes, practices and rewards entrepreneurship, innovation and creativity in business.
- The DSB promotes the lifelong pursuit of knowledge and understanding by both the faculty and students through continued learning and development.
- The DSB recognizes a strong relationship with the community that recognizes our mutual interests.

**Dahlkemper School of Business Honor Code**

Inspired by the Catholic Intellectual Tradition, the faculty and students of the Dahlkemper School of Business at Gannon University are dedicated to the promotion of ethical, legal, socially responsible and professional behavior. They believe in engaging at all time with honesty, integrity, respect, trustworthiness and superior work ethics.

**Unique Characteristics of the Dahlkemper School of Business**

- Gannon University offers a unique combination of the Dahlkemper School of Business (DSB), the Small Business Development Center (SBDC) and the Erie Technology Incubator (ETI) within the Center for Business Ingenuity (CBI). The Center for Business Ingenuity is designed to look and operate like a corporate headquarters with a focus on meeting and satisfying the needs of our students and the business community. This collaboration allows our students and faculty to put into practice the knowledge, skills and abilities taught in the classroom.
- Students learn in the new, state-of-the art classrooms, Business Information Systems Laboratory (BISL) and by collaborating with ETI and SBDC companies and clients operating within the CBI.
- High percentage of DSB faculty are doctorally qualified with real world business experience.
- The DSB is fully accredited by ACBSP (Accreditation Council for Business Schools and Programs). ACBSP accreditation emphasizes excellence in teaching business. There is a rigorous and ongoing process to earn and maintain this accreditation.
- The DSB faculty are student and community focused.
- Opportunities for international internships, travel and study abroad as a result of partnerships developed with international universities.
- Small classes taught by DSB faculty and not graduate teaching assistants. DSB faculty know their students by name.
- Students are advised and mentored by the DSB business faculty and staff.
- The CBI is located in the heart of the central business district of Erie, Pa.
- Gannon DSB students are engaged in community service learning projects.
- The DSB has been offering cutting edge business programs for over 70 years. The DSB boasts a world-wide network of alumni.
- Opportunity to earn a double major in business within four years. For example, a student has an opportunity to earn a double major in areas such Entrepreneurship and Marketing;

Accounting and Finance or Management and Marketing. The more skills students learn, the more value they are to future employers and society.

- Opportunity to complete a Bachelor's degree in business and a Master's degree in five years through the accelerated Masters of Business Administration or the Masters of Public Administration program.
- Graduates from the Dahlkemper School of Business have the knowledge to succeed in business and the motivation and values to make the world a better place.

The business curriculum reflects current practices and issues in the business arena, including the importance of critical thinking, communication, analytical skills and problem solving. Global business issues and communication skills are integrated through the business core curriculum. Students will learn the application of business theories and principles to ethically conduct business on a Global basis.

The BSBA majors consist of 1) **the liberal studies** curriculum (required of all Gannon undergraduates) which enables a student to acquire and apply the knowledge and skills necessary to be a significant contributor to an organization, a community, and society; 2) **the business core curriculum**, composed of a series of courses which integrates the broad range of decisions business managers encounter. The Business core curriculum focuses on the essential functions of a business, and the skills managers must develop to be successful in an increasingly technical and analytical environment; finally, the student will choose 3) a **major** which provides greater depth for a career in a specific business function or industry.

**Students seeking the Bachelor of Science in Business Administration must complete the lower division (100- and 200-level business requirements) before they are admitted to the upper division (300- and 400-level courses). Each lower division course must be completed with a minimum grade of C (excludes C-) and the student must achieve junior-standing before admission to the upper division.**

### Academic Standards

- 1) All lower division and prerequisite courses must be completed with a minimum grade of C (this excludes the grade of C-) in each course;
- 2) Each business core course must be completed with a minimum grade of C;
- 3) Students must complete the capstone course (BCOR 485) at Gannon University;
- 4) Students must have a minimum business GPA of 2.00 and a minimum overall GPA of 2.00 to qualify for graduation.

### Program Outcomes

- DSB students will demonstrate critical thinking, analytical and problem solving skills to identify, analyze, evaluate and solve business problems and capture business opportunities.
- DSB students will have the oral and written communication skills to effectively interact with their stakeholders.
- DSB students will understand the importance of ethics, integrity, inclusiveness and social responsibility and the need to apply and promote that understanding in their decisions and actions.
- DSB students will demonstrate an understanding of global business concepts and practices that embrace the opportunities and challenges of diverse and multicultural environments.



- DSB students will be able to integrate knowledge across the functional areas of business and utilize leadership and team-building skills to manage resources and achieve goals and objectives.

The following is the curriculum plan for **all BSBA majors**.

### Bachelor of Science in Business Administration Curriculum Plan

(Numerals in front of courses indicate credits)

<b>FRESHMAN YEAR</b>	
<i>Fall Semester</i>	<i>Spring Semester</i>
3 Found. of the Bus Ent./BCOR 105	3 Prin of Microeconomics/BCOR 111
3 Appl Math for Bus/MATH 115	3 Public Speaking/SPCH 111
3 College Composition/LENG 111	3 Critical Analysis & Composition/ LENG 112
2 First Year Seminar	3 Principles of Systems/CIS 195
3 Sacred Scriptures/LTHE 121	3 Intro to Philosophy/LPHI 131
3 Business Technology/CIS 150	
<hr/> 17	<hr/> 15
	32 <i>Freshman Year Total</i>
<b>SOPHOMORE YEAR</b>	
<i>Fall Semester</i>	<i>Spring Semester</i>
3 Princ of Macroeconomics/BCOR 112	3 Prin of Accounting II/BCOR 215
3 Principles of Accounting I/BCOR 214	3 Mktg in the Global Environment/ BCOR 220
3 Intro to Statistical Analysis/BCOR 220	3 Mgmt Theory & Practice/BCOR 250
3 History Without Borders/LHST 111	3 Fine Arts Series/LFIN
3 Literature Series/LENG	3 Theology II Series/LTHE
3 LS Natural Science	
<hr/> 18	<hr/> 15
	33 <i>Sophomore Year Total</i>
<b>JUNIOR YEAR</b>	
<i>Fall Semester</i>	<i>Spring Semester</i>
3 International Elective Course	3 Legal Env of Business/BCOR 303
3 Financial Management I/BCOR 311	3 Advanced Business Elective Course
3 Philosophy II Series/LPHI	3 Major Course 2
3 Free Elective 1*	3 Major Course 3
3 Free Elective 2*	3 Free Elective 3*
3 Major Course 1	
<hr/> 18	<hr/> 15
	33 <i>Junior Year Total</i>
<b>SENIOR YEAR</b>	
<i>Fall Semester</i>	<i>Spring Semester</i>
3 Operation & Supply Chain Mgmt./ BCOR 440	3 Global Policy & Strategy/BCOR 485
3 Theo/Philo III Series/LTHE/LPHI	3 Major Course 5
1 Leadership Seminar	3 Major Course 6
3 Major Course 4	3 Free Elective 6*
3 Free Elective 4*	3 Free Elective 7 or Accounting Major Course 7*
3 Free Elective 5*	
<hr/> 16	<hr/> 15
	31 <i>Senior Year Total</i>
<b>Program Total 128</b>	

\*Free electives may be used to earn a second business major.

\* A minimum of 20 free elective credit hours are required to meet the 128 credit hour graduation requirement. Non-accounting students take six major courses and will have seven free electives. Accounting students take seven major courses and will have six free electives.

**Associate Degree Program - Business Administration**

(Numerals in front of courses indicate credits)

FIRST YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Critical Anal. & Comp./LENG 112
3	Business Technology I/CIS 150	3	Sacred Scriptures/LTHE 121
3	College Algebra/MATH 111	3	Business Technology II/CIS 250
3	Foundations of the Bus Enterprise/ BCOR 105	3	Prin of Microeconomics/BCOR 111
2	First Year Seminar	3	Intro to Philosophy/LPHI 131
14		3	Intro to Psychology/PSYC 111
		18	
		32	<i>First Year Total</i>
SECOND YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Prin of Macroeconomics/BCOR 112	3	Prin of Accounting II/BCOR 215
3	Principles of Accounting I/BCOR 214	3	Theology or Philosophy III Series/ LTHE or LPHI
3	History Without Borders/LHST 111	3	Mktg in the Global Environment/ BCOR 240
3	Bus/Professional Communications/ ENGL 212	3	Management Theory & Practice/ BCOR 250
3	Introduction to Statistical Analysis/ BCOR 220	3	Public Speaking/SPCH 111
3	Basic Sociology/SOCI 110	3	
18		15	
		33	<i>Second Year Total</i>

**Program Total 65**

**THE NEXT STEP PROGRAM IN BUSINESS**

**Baccalaureate Degree Program for Graduates of an Associate Degree in Business - for all BSBA majors**

(Numerals in front of courses indicate credits)

PRE-SENIOR YEAR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Sacred Scripture/LTHE 121	3	Legal Env of Business/BCOR 303
3	Foundations of the Bus Enterprise/ BCOR 105	3	Advanced Business Elective Course
3	Financial Management I/BCOR 311	3	Intro to Philosophy/LPHI 131
3	International Elective Course	3	Major Course 2
3	Principles of Systems/CIS 195	3	Major Course 3
3	Major Course 1		
18		15	

SENIOR YEAR	
<i>Fall Semester</i>	
3	Operation & Supply Chain Mgmt/ BCOR 440
3	Major Course 4
3	Major Course 5
3	Literature Series/LENG
3	Theology/Philosophy III Series/ LTHE/LPHI
1	Leadership Seminar
16	
<i>Spring Semester</i>	
3	Global Policy and Strategy/ BCOR 485*
3	Major Course 6
3	Free Elective 1 or Accounting Major Course 7**
3	Free Elective 2
3	Fine Arts Series/LFIN
3	Public Speaking/SPCH 111
18	

\* *Fulfills LBST 383, Senior Seminar*

\*\* *Non-accounting students take six major courses and will have two free electives. Accounting students take seven major courses and will have one free elective.*

Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

### Prerequisites:

Students enrolling in the Next Step Program in business are required to have completed the following courses or their equivalent, typically found in an Associate degree program in business, prior to matriculation. If the following courses, or their equivalent, have not been completed in the Associate degree program, the student will be admitted as a regular transfer student. The required prerequisite courses are:

*Accounting (BCOR 214 & 215)*  
*Economics (BCOR 111 & 112)*  
*Business Technology I (CIS 150)*  
*Composition (LENG 111 & 112)*

*Applied Mathematics for Business (MATH 115)*  
*Marketing (BCOR 240)*  
*Management (BCOR 250)*  
*Statistics (MATH 213, BCOR 220, or PSYC 211)*

### BUSINESS MINORS

**BUSINESS ADMINISTRATION MINOR** (18 credits) Offered *only* to **non-business** majors.

(Numerals in front of courses indicate credits)

- (All prerequisites must be satisfied including minimum grade requirements)
- 3 BCOR 105 Foundations of the Business Enterprise
  - 3 BCOR 111 Principles of Microeconomics or ECON 285 Project Economics
  - 3 BCOR 214 Principles of Accounting I
  - 3 BCOR 240 Marketing in the Global Environment
  - 3 BCOR 250 Management Theory and Practice
  - 3 Business elective from any business concentration or  
BCOR 112 Principles of Macroeconomics

**ECONOMICS MINOR (18 Credits)** Offered to all majors

BCOR 111 Principles of Microeconomics

BCOR 112 Principles of Macroeconomics

*And four additional Economics courses from the below list:*

ECON 285 Project Economics

ECON 311 Intermediate Microeconomic Analysis

ECON 312 Intermediate Macroeconomic Analysis

ECON 351 Managerial Economics

ECON 401 Monetary Theory

ECON 421 Forecasting Methods

ECON 427 Economic Methods

ECON 431 Public Finance

ECON 441 International Economics

ECON 442 Economic Development

ECON 443 Comparative Economic Systems

ECON 453 Environmental Economics

HCMG 340 Healthcare Economics

**The Accelerated BSBA/MBA and BSBA/MPA Programs**

The accelerated Bachelor of Science in Business Administration/ Master of Business Administration program and the Bachelor of Science in Business Administration/Master of Public Administration program are designed for qualified students to earn an undergraduate business degree and a graduate degree in business in five years or public administration in five and one-half years rather than six or more.

## THE BUSINESS CORE CURRICULUM:

FOR STUDENTS ADMITTED FALL 2014 OR LATER

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### COURSE DESCRIPTIONS:

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#### **BCOR 105: Foundations of the Business Enterprise**

This is the gateway course to the business program and helps students to gain a solid understanding of the components of a business, its external environment, and the interactions between them. Students will engage in decision making and problem solving in that setting. Ethics, leadership, employee empowerment, the impact of technology, and the global market are topics of discussion. Students will develop critical thinking, written and oral communication, and team skills through case-based learning and a term project.

Prerequisites: None

*3 credits*

#### **BCOR 111: Principles of Microeconomics**

This course develops the techniques necessary for an understanding of basic economics from a microeconomic standpoint. The specific topics explored include the fact of scarcity, concepts of supply and demand, cost-production decision making, the operation of a firm in the product market under varying assumptions of competition, monopolistic competition, monopoly, and oligopoly, plus the operation of the firm in the factor market. This course is approved as a Social Science course for the Liberal Studies Core.

Prerequisite: None

*3 credits*

#### **BCOR 112: Principles of Macroeconomics**

This course develops tools for an understanding of macroeconomic issues and theory, including the application to current social issues such as unemployment, economic growth, and inflation. The role of money and financial institutions are also examined. The use and effectiveness of economic policy to control the macroeconomy is explored. This course is approved as a Social Science course for the Liberal Studies Core.

Prerequisite: None

*3 credits*

#### **BCOR 214: Principles of Accounting I**

This course introduces the main aspects of the accounting structure. The fundamental accounting principle is presented in the form of the balance sheet equation and is followed by the logical development of the subject of debits and credits, journal entries, special journals, and specific account classifications. The course provides a thorough review of how accounting transactions affect the financial statements and analysis of financial statement information.

Prerequisites: BCOR 105

*3 credits*

#### **BCOR 215: Principles of Accounting II**

This course continues the focus on the application of accounting principles inside the enterprise, i.e., the proprietorship, the partnership, and the corporation. An additional focus is the use of accounting information to better aid in the planning, controlling, and evaluation of company performance. These additional topics include budgeting, job costing, and break-even analysis.

Prerequisites: Minimum grade of C in BCOR 214

*3 credits*

#### **BCOR 220: Introduction to Statistical Analysis**

This course introduces the student to the statistical tools used in business decision-making. Course topics include the use of descriptive statistics to explore data; elements of probability theory, including basic probability concepts and Bayes's theorem; and the major discrete and continuous probability distributions all within the context of business applications. Populations/samples, parameters/statistics, sampling and sampling distributions, and hypothesis tests for means and proportions are also introduced. Emphasis is placed on understanding the concepts underlying the computations and the ability to communicate the meaning of computed values.

Prerequisites: Minimum grade of C in MATH 115 or MATH 140 and CIS 150

*3 credits*

**BCOR 240: Marketing in the Global Environment**

This course helps students to understand and apply the fundamentals of marketing from a global perspective. The major strategic decisions of marketing are covered including capturing marketing insights, connecting with customers, shaping market offerings, delivering and communicating value, and creating successful long term growth. These topics, along with the examination of buyer behavior, marketing research, marketing planning, and the societal, consumer and ethical issues of marketing are examined through readings, experiential exercises, class discussions, and a comprehensive marketing planning project. The marketing planning project calls for each student to apply marketing research and planning skills by creating and presenting a marketing plan for the successful marketing of a specific product to a specific target market in the global business environment.

Prerequisites: BCOR 105

*3 credits*

**BCOR 250: Management Theory and Practice**

This course will introduce students to the principles of management. From the organizational and behavioral aspects to process and management techniques of everyday business, this course is designed to give students a social, historical, legal, economic, and environmental knowledge and understanding of today's complex business world. The crux of management can be summed up as the combination of interpersonal skills, work competence, specific tools and methods (e.g., Project Management, Quality Management), understanding of business processes, their measurement and interdependency as well as the ability to successfully cope within an ambiguous setting. This is a seminar style course and not a lecture. This puts the onus on students to be prepared and to engage in relevant discussion.

Prerequisites: BCOR 105

*3 credits*

**BCOR 303: Legal Environment of Business**

This course addresses the global, political, social, environmental, and regulatory legal issues confronting businesses. Students will explore important topics in business law, including entity formation, corporations, contracts, agency, Sarbanes-Oxley, the UCC and other topical areas. Because decision making at all levels in the firm must take legal consequences into account, the study of the legal environment requires and develops critical thinking skills, logic, and reasoning.

Prerequisites: BCOR 105

*3 credits*

**BCOR 311: Financial Management I**

This course introduces the financial and economic concepts necessary to understand, analyze, and resolve corporate investment, financing, and dividend decisions. The course also establishes the goal of the firm, the ethical behavior appropriate for the achievement of this goal, an elementary knowledge of financial markets and instruments, and insight into the international aspects of these topics.

Prerequisites: Junior Standing, BCOR 111, BCOR 112, BCOR 215, and BCOR 220

*3 credits*

**BCOR 440: Operations and Supply Chain Management**

This course studies the processes required to create and distribute goods and services which are increasingly taking place outside the boundaries of the traditional enterprise. Students will learn how to analyze processes, ensure quality, create value, and manage the flow of information, products, and services across a network of customer enterprises and supply chain partners. Case studies give students a hands-on experience with analytical models and require cogent written analysis.

Prerequisites: BCOR 311

*3 credits*

**BCOR 485: Global Business Policy and Strategy**

This is a comprehensive capstone course requiring students to integrate previous analytical skills and knowledge in analyzing socioeconomic and environmental issues in the context of the global economy and business. This course is designed to introduce, emphasize, reinforce, and assess students' ability to think and analyze holistically. That is to say, a business and/or

economy do not exist in a vacuum; in order for business and economies to be successful, societies and the individuals within them must also be successful. The complexity of issues facing senior management in the decision making process has increased dramatically since the advent of the industrial revolution and the impacts of the decisions made have become just as multifaceted. Economic theory as a philosophical basis for policy making has created a plethora of social, economic and environmental problems which can only be solved via intrinsic cooperation between business/economy and politics. The emphasis throughout the course is that of top management and an integrative, multi-functional perspective with emphasis on ethics and responsibility to society. This is a seminar style course and requires proactive involvement of and preparation by the students in a discussion forum.

Prerequisites: Senior Standing and a minimum grade of C in BCOR 440.

3 credits

**Advanced International Elective Course – See your academic advisor for options.**

**Business Elective Course – See your academic advisor for options.**

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## DEPARTMENT OF FINANCIAL & ECONOMIC ANALYSIS

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Richard P. Hauser, Ph.D., *Department Chairperson*

FACULTY: *Associate Professor:* Gary Mahan. *Assistant Professor:* Renee Castrigano, Richard Hauser, Terry Holmes, William McAndrew, M. Garrett Roth. *Instructor:* Blase Nicolai.

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## ACCOUNTING (BSBA)

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The accounting major is as much concerned with the personal development of the individual as a member of today's society as with that person's technical competence. The curriculum places emphasis on the concept that the business decision making process is not just a mere application of accounting theory and techniques; rather, it is a blending of this technical ability with sound ethical principles.

The faculty is student oriented and readily available for student contact both within and outside the classroom. The faculty is interested in the students as individuals and is concerned with their intellectual and professional development. The aim of the major is to develop a sound understanding of accounting theory and practice, as well as the ethical principles necessary to prepare students for professional careers in public accounting, business, or government. The accounting major prides itself on bringing practical knowledge into the classroom based on personal professional experience.

The five-year MBA program meets the needs of the public accounting profession on a national basis in support of the 150-hour education requirement initiated by the American Institute of CPA's and many state boards of accountancy. All students are expected to complete the BSBA in accounting in four years. Students who have elected the five year track can then proceed to complete the MBA over a fifth year.

A measure of the success of the department is graduating students' placement in appropriate career entry positions. Large public accounting firms, the Naval Audit Service and other federal, state, and local governmental agencies, and many industrial firms regularly recruit our graduates on campus. Presently, substantial numbers of our graduates are not only advancing their own careers in these organizations but are returning to Gannon as recruiters for these companies. Comments from these recruiters give more than adequate testimony to the quality of the preparation for our students in accounting.

Some students choose not to enter the business world immediately upon graduation but rather elect to further their education in graduate studies. Our program provides an excellent base for graduate work in Accounting, Business Administration, Law, or related fields.

The following courses must be completed to satisfy the requirements for the BSBA in Accounting:

ACCT 305/Intermediate Financial Accounting I  
 ACCT 313/Accounting Information Systems  
 ACCT 315/Intermediate Financial Accounting II  
 ACCT 320/Intermediate Managerial Accounting  
 ACCT 415/Advanced Financial Accounting  
 ACCT 420/Income Taxes  
 ACCT 440/Financial Auditing

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## COURSE DESCRIPTIONS:

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### **ACCT 305: Intermediate Financial Accounting I**

An in-depth investigation of accounting theory and practice through the examination of major financial statement accounts. Specific topics include a study of the conceptual framework of accounting, income determination, reporting and financial statement presentation, and evaluation of sustainable and transitory earnings components.

Prerequisite: BCOR 215

*3 credits*

### **ACCT 313: Accounting Information Systems**

A theoretical and practical discussion of the process and procedures for accounting information systems analysis, design, and implementation with emphasis on the organizational decision making inherent in a broad range of computerized systems applications. A computer lab is included to examine an automated accounting system.

Prerequisite: BCOR 215

*3 credits*

### **ACCT 315: Intermediate Financial Accounting II**

An in-depth investigation of accounting theory and practice through an examination of major financial statement accounts. Specific topics include a study of accounting for investments, liabilities, leases, shareholders' equity changes, earnings per share and preparation of the statement of cash flows.

Prerequisite: ACCT 305

*3 credits*

### **ACCT 320: Cost Management**

This course provides in-depth study of theory and practice of cost accounting. It emphasizes internal accounting reporting and managerial use of cost accounting data for planning, controlling and decision making. Topical coverage includes: cost behavior, product costing, budgeting, performance measurement, cost-volume-profit analysis, and managerial decision making.

Prerequisite: BCOR 214, BCOR 215

*3 credits*

### **ACCT 375: Organizational Internship**

Selected students will be able to spend a period of time (50 hours per credit hour) working as an Intern with a local organization. During this period the student will maintain a journal, will meet regularly with a faculty member, and with a supervisor to provide continuing evaluation of quality and progress of the student's work. At the conclusion of the experience the student will submit a paper to the supervisor and faculty member and make an oral presentation.

Prerequisite: Junior standing

*1-6 credits*

### **ACCT 415: Advanced Financial Accounting**

The course covers advanced accounting topics about partnerships accounting, parent and subsidiary accounting, consolidation and mergers, foreign transactions and translations, and government and non-profit accounting.

Prerequisite: ACCT 315

*3 credits*



**ACCT 420: Income Taxes**

This course is a study of the Federal Income taxation of individuals, partnerships, and some consideration of estates and trusts. This course includes an introduction to income tax research and places an emphasis on effective tax planning.

Prerequisite: BCOR 215

*3 credits*

**ACCT 431: Advanced Taxes**

Taxation of corporations, partnerships, S corporations, estates and trusts, and tax accounting issues. Additional coverage includes an examination of the sources of tax laws and related tax research and planning. This course involved a service learning component in which the students participate in the Internal Revenue Service's Volunteer Income Tax Assistance (VITA) program and prepare individual tax returns at a local community center. This component is required and may, at the option of the student, be used for one credit under ACCT 375 Organizational Internship.

Prerequisite: ACCT 420 Income Taxes

*3 credits*

**ACCT 440: Financial Auditing**

This course introduces the theory and practice of auditing, duties and responsibilities of the auditor, and standards, procedures, internal control and management services performed by public accountants.

Prerequisites: ACCT 313 or ACCT 315

*3 credits*

**ACCT 490: Special Topics**

Prerequisite: BCOR 215

*1-3 credits*

## **ECONOMICS (COURSE DESCRIPTIONS:)**

**ECON 199: Selected Topics in Economics**

A comprehensive study of a specific topic in economics

*1-3 credits*

**ECON 285: Project Economics**

This course develops the techniques necessary for understanding economic price theory, the time-value of money, and the basic issues surrounding organizational architecture. These include issues surrounding supply and demand, cost-production, decision making and market models. In particular, the course focuses on the application of these economic theories to projects, including issues surrounding risk analysis and triage, budgeting, planning, and scheduling necessary to the successful completion of a project.

Prerequisites: MATH 140 or MATH 115

*3 credits*

**ECON 311: Intermediate Microeconomic Analysis**

An intermediate level course in the methods of microeconomic analysis, emphasizing supply and demand analysis, elasticity, production and cost principles, and pricing and output decisions under different market structures.

Prerequisites: Minimum grade of C in BCOR 111

*3 credits*

**ECON 312: Intermediate Macroeconomic Analysis**

An intermediate level course in the methods of macroeconomic analysis emphasizing national income determination and monetary and fiscal policy.

Prerequisites: Minimum grade of C in BCOR 112

*3 credits*

**ECON 351: Managerial Economics**

An application of economic and statistical methods to managerial decision making.

Prerequisites: BCOR 111, BCOR 220, CIS 150 or the equivalent

*3 credits*

**ECON 401: Monetary Theory**

The influence of the quantity of money on prices, growth and employment and its relation to the central banking system's control of the money supply.

Prerequisites: Minimum grade of C in BCOR 112

*3 credits*

**ECON 421: Forecasting Methods**

A study of forecasting methods and their application. Topics covered include data collection, time-series decomposition, moving average, exponential smoothing, correlation and regression.

Prerequisites: BCOR 220, CIS 150 or the equivalent

*3 credits*

**ECON 427: Economic Methods**

A study of the application of statistical methods to estimation and analysis of economic models.

Prerequisites: BCOR 220, CIS 150 or the equivalent

*3 credits*

**ECON 431: Public Finance**

An application of microeconomic theory to the study of how government policies influence the economy. The course emphasizes the study of how government tax and expenditure policies affect the allocation of resources, the distribution of income, and the welfare of the citizens.

Prerequisites: Minimum grade of C in BCOR 111

*3 credits*

**ECON 441: International Economics**

A study of the basis for trade between nations, balance of payment problems and the influence of national policies in dealing with trade, monetary problems and the multinational business firms in the global economy.

Prerequisites: Minimum grade of C in BCOR 111 or BCOR 112

*3 credits*

**ECON 442: Economic Development**

A study of the economics of growth as applied to less developed nations. There is an emphasis on the prerequisites for growth, the factors which retard growth, and public policies appropriate for achieving the desired rate of growth.

Prerequisites: Minimum grade of C in BCOR 111 or BCOR 112

*3 credits*

**ECON 443: Comparative Economic Systems**

A study of how societies with differing social, political and economic preferences have organized themselves to satisfy human needs with an emphasis on the theory and practice of socialism, capitalism and modern variations.

Prerequisites: Minimum grade of C in BCOR 111 or BCOR 112

*3 credits*

**ECON 453: Environmental Economics**

A study of environmental issues and of policies that propose to address them. Topics include property rights, public goods, externalities, Coase's Theorem, and the institutions and policies designed to address problems associated with the environment.

Prerequisites: Minimum grade of C in BCOR 111

*3 credits*

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**FINANCE (BSBA)**

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The finance curriculum promotes the understanding of financing, business investments, optimal dividend payments, lending regulations, and financial products and services as preparation for a competitive career entry position. In the finance program, students participate in a hands-on stock track simulation that gives them an opportunity to explore investing in real time. Furthermore, the Student Investment Trust allows students to apply investment concepts by investing Trust money in stock and bond markets. Finance graduates are prepared to take a Series 7 brokerage license and the level 1 CFA certification. Finance graduates have also completed the background for preparation for the CFP exam. Coupling your degree in finance with a second major (such as risk management and insurance or accounting) can help you become even more marketable. There are a wide variety of rewarding careers in finance that are in high demand. The career path for most finance majors follows tracks in corporate finance or financial services.

The following courses must be completed to satisfy the requirements for the BSBA in Finance:

FINC 310/Financial Markets and Institutions  
FINC 312/Financial Management II  
FINC 313/Investments  
FINC 420/Security Analysis and Portfolio Management  
FINC 423/Financial Models  
FINC 450/Retirement and Estate Planning

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## **COURSE DESCRIPTIONS:**

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### **FINC 300: Introduction to Risk Management and Insurance**

The primary focus of this introductory course includes the Risk Management Process, the nature of the Insurance Industry and the evaluation of life, health, property and liability risks. The course will place an emphasis on Personal Lines Property and Casualty Insurance Products. Life Insurance, Health Insurance and Financial Planning topics will be outlined at the end of the course. This course is also listed as RISK 300. *3 credits*

### **FINC 310: Financial Markets and Institutions**

This course is an introduction to the relationship between financial markets and the rest of the economy emphasizing the role that financial institutions play in channeling funds from savers to investors. The course includes a survey of the functions of financial institutions (emphasizing commercial banks), securities markets, and financial instruments.

Prerequisites: BCOR 111, BCOR112, BCOR 214, BCOR 215 *3 credits*

### **FINC 312: Financial Management II**

The practical aspects of financial decision-making, including computation of the cost of capital, risk measurement, and capital budgeting under risk. Evaluate the strategic financing decisions of the firm.

Prerequisites: BCOR 311 *3 credits*

### **FINC 313: Investments**

This course is a survey of the characteristics of investments including stocks, bonds, cash, options, futures, and precious metals. Taxation of investment returns is also discussed.

Prerequisites: BCOR 311 *3 credits*

### **FINC 318: International Financial Management**

This course integrates international economics and financial management. The course discusses foreign exchange and money markets and considers theories for the determination of spot and forward exchange rates over time.

Prerequisites: BCOR 311 *3 credits*

### **FINC 330: Entrepreneurial Finance**

Entrepreneurial finance focuses on the issues confronting start-up ventures, and the early stages of company development. A startup venture does not have the same credibility as a well established publicly traded corporation and therefore must raise capital differently. We will address key questions relevant to these companies: how much money can and should be raised; when should it be raised and from whom; what is a reasonable valuation of the company; and how funding should be structured. In this course, these companies will be examined at all phases of their life cycles, from initial generation to the ultimate harvesting of the venture. We will investigate various forms of harvesting, for example, initial public offering (IPO's) or acquisitions and discuss the structural and legal issues of various forms of harvest. This course is also listed as ENTR 330.

Prerequisite: BCOR 311 *3 credits*

### **FINC 375: Organizational Internship**

Selected students will be able to spend a period of time (50 hours per credit hour) working as

an Intern with a local organization. During this period the student will maintain a journal, will meet regularly with a faculty member, and with a supervisor to provide continuing evaluation of quality and progress of the student's work. At the conclusion of the experience the student will submit a paper to the supervisor and faculty member and make an oral presentation.

Prerequisite: Junior standing

1-6 credits

### **FINC 420: Security Analysis and Portfolio Management**

This course is a study of security analysis and portfolio construction using statistical and theoretical analysis.

Prerequisites: BCOR 311

3 credits

### **FINC 423: Financial Models**

The intent of the course is to integrate finance, accounting, statistics and computer skills into activities frequently encountered in finance-related jobs. This course requires the completion of an appropriate theory course, and a familiarity with PC's and spreadsheets.

Prerequisites: BCOR 311

3 credits

### **FINC 450: Retirement and Estate Planning**

This is a comprehensive course consisting of two parts: Retirement Planning and Estate Planning. The practical knowledge needed for choosing the best retirement plan and designing a plan that will meet a client's needs from a tax and retirement standpoint is discussed. Retirement planning topics include qualified plans, non-qualified plans, and IRAs. Estate Planning will include various aspects and strategies of estate and gift tax planning, including the nature, valuation, transfer, administration, and taxation of property. Emphasis is given to a basic understanding of the estate and gift tax system. This course is also listed as RISK 450.

Prerequisites: BCOR 311

3 credits

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## **DEPARTMENT OF ORGANIZATIONAL SYSTEMS**

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Duane R. Prokop, D.S.L., *Department Chairperson*

FACULTY: *Assistant Professor:* Bruce Kibler, Xiangjing Wei. *Instructors:* George Couch, David Smith.

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## **HEALTHCARE MANAGEMENT (BSBA)**

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Healthcare is big business, accounting for 17% of the US economy, and it is changing rapidly in terms of how and where care is delivered, who is providing those services, and how that care is financed. Healthcare management requires talented people to manage these changes taking place. In their roles, healthcare executives have an opportunity to make a significant contribution to improving the health of the communities their organizations serve.

Organizations from large hospitals to long-term care facilities to physician's offices will require managers with broad business skills. This course of study prepares students to step into a wide variety of entry-level managerial positions.

The following courses must be completed to satisfy the requirements for the BSBA in Healthcare Management:

HCMG 305/Introduction to U.S. Healthcare Systems

HCMG 340/Healthcare Economics

HCMG 410/Healthcare Law, Regulation, and Policy

HCMG 450/Healthcare Informatics

MGMT 330/Project Management

MGMT 350/Quality Management

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**COURSE DESCRIPTIONS:**

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**HCMG 305: Introduction to the U.S. Healthcare System**

This course provides an introduction to the evolution and current structure of the US Healthcare system and examines its features in the context of providers (hospitals, integrated delivery systems, long term care, and disease management); payers (sources of spending, managed care, employer-based health insurance, access by the poor, and cost containment); and suppliers (pharmaceutical industry, medical devices, information technology, and biotechnology). Healthcare systems in other industrialized nations are presented to provide comparisons and contrasts.

Prerequisites: BCOR 250

*3 credits*

**HCMG 340: Healthcare Economics**

This course examines health care and healthcare insurance markets and their structures in the context of traditional microeconomic analysis; production functions, marginal analysis, supply and demand analysis, market efficiencies, utility, rational behavior by both buyers and sellers; and the optimum allocation of healthcare. Underlying assumptions, such as the ability of competitive markets to exist in the healthcare sector, are also addressed. The course will also consider social values surrounding healthcare availability and various criteria for evaluating national health insurance plans.

Prerequisites: HCMG 305

*3 credits*

**HCMG 375: Organizational Internship**

Selected students will be able to spend a period of time (50 hours per credit hour) working as an Intern with a local organization. During this period the student will maintain a journal, will meet regularly with a faculty member, and with a supervisor to provide continuing evaluation of quality and progress of the student's work. At the conclusion of the experience the student will submit a paper to the supervisor and faculty member and make an oral presentation.

Prerequisite: Junior standing

*1-6 credits*

**HCMG 410: Healthcare Law, Regulation, and Policy**

This course examines regulation in the healthcare sector through enacted legislation which has been translated into policy. Healthcare policy addresses access to care, quality of care, and financing of care. Public health policy will also be considered within historical, political, and social contexts.

Prerequisites: HCMG 340

*3 credits*

**HCMG 450: Healthcare Informatics**

The application of information technology to patient care has created a sea change in health care management. The Electronic Medical Record (EMR) requirement in the Patient Protection and Affordable Care Act affects many different actors in the health care ranks, from physician practices to hospitals. This course will use case studies to develop an understanding of and appreciation for healthcare analytics and their contributions to the advancement of health care. The intent of this course is not to make the student an expert in analytics; rather it is to demonstrate the power of information derived from data to improve care in clinical settings. The course will assist the non-technical student in developing an understanding of Electronic Medical Records (EMR), how they are created, shared, and stored; and how data mining is conducted. The course is as much a study in change management as it is a study of informatics and the knowledge that can be constructed from the captured data.

Prerequisites: HCMG 410

*3 credits*

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## INTERNATIONAL MANAGEMENT (BSBA)

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The International Management curriculum is designed to prepare students for active participation in international business settings. Although the business management major also prepares students for the globalized business environment, international management involves students in the intricacies of global businesses, from intercultural awareness to specific modes of initiating, executing and/or developing a business internationally/globally, all within an ethical, responsible framework. The international management curriculum and experiences allow students to understand underlying global developmental processes intrinsic to success within an international business framework.

The following courses must be completed to satisfy the requirements for the BSBA in International Management:

FINC 318/International Finance  
 MKTG 330/Global Marketing  
 IMGT 420/Issues in Global Management  
 ECON 443/Comparative Economic Systems or POLI 220/Comparative Government  
 And six credits of an Advanced International Elective planned with the student's advisor

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### COURSE DESCRIPTIONS:

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#### **IMGT 306: Global Business**

This course investigates the international environment. Topics include multi-national organizations, international trade, effects of import/export on balance of trade, exchange rates, the international business environment, international financial markets, multi-national marketing, multi-national financial management. The course will also address the issue of cross cultural sensitivity.

Prerequisites: Junior standing

*3 credits*

#### **IMGT 375: Organizational Internship**

Selected students will be able to spend a period of time (50 hours per credit hour) working as an Intern with a local organization. During this period the student will maintain a journal, will meet regularly with a faculty member, and with a supervisor to provide continuing evaluation of quality and progress of the student's work. At the conclusion of the experience the student will submit a paper to the supervisor and faculty member and make an oral presentation.

Prerequisite: Junior standing

*1-6 credits*

#### **IMGT 382: China Studies**

The purpose of this course is to study in depth the effect on all elements of an international business firm's external environment if it were to do business in China. The geography, level of economic development, economic system, legal system, political system, business environment, culture (including history, language, religion, education, concept of the family, time perception, etc.) and current issues of China are studied. This course is to be open to students of all majors and includes a travel component.

Prerequisites: None

*3 credits*

#### **IMGT 420: Issues in Global Management**

This course explores the management discipline in an international/global context. Specific topics include international/global strategy, international/global human resource management, cross cultural management, historical and developmental processes which have determined the current system of socio-political and economic disparities, international organizations & governance and international/global organizational structure and managing business and government relations in an international/global context.

Prerequisites: FINC 318

*3 credits*

**IMGT 490: Directed Study Abroad in International Management**

This course is designed to allow students to explore areas of management study while at a non-U.S. (geographically) university. The course content must be pre-approved by the fulltime faculty. Topics are chosen in discussions with the faculty member responsible and approved by the faculty member responsible for the management curriculum. This course can be credit bearing from 1-6 credits depending on topic and extent of work. The culminating work for this course is a written paper which must address all aspects of the international management curriculum learning goals. Topics chosen for investigation must be within the framework of international management and also address all of the learning goals of the management curriculum. This work can also be completed at a foreign university under the tutelage of a professor at the foreign institution and with the approval of the responsible Gannon professor.

Prerequisite: Permission of supervising faculty member

*1-6 credits*

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**MANAGEMENT (BSBA)**

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Dramatic and fundamental changes are facing the management profession and the world. The management major prepares students to successfully manage businesses of the future, which will incorporate holistic and systemic thinking into the decision making process, i.e., understanding the societal and environmental impact of business and economic decisions. The demands on the managers of the future to think critically and to analyze systemic impacts will require heavy reliance on analytics (data storage and modeling) and implies a basic understanding of process, measurement, forecasting, functional interdependence, causality, forward thinking, and technology. The inherent networked architecture behind successful thinking and successful companies is basic to management's goals and activities. The opportunity to study abroad and understand the international linkages that constitute our global economy is real and encouraged. Students will learn firsthand how to develop and manage projects for external clients. Essential to this program is the understanding that economic activity was designed and has the duty to positively enhance the human condition.

The following courses must be completed to satisfy the requirements for the BSBA in Management:

MGMT 305/Corporate Social Responsibility and Sustainability

MGMT 330/Project Management

MGMT 350/Quality Management

IMGT420/Issues in Global Management

SCMG 340/Sourcing and Supply Chain Management

Elective Course (3 credits) from the following:

MGMT 375/Organizational Internship

MGMT 490/Directed Studies in Management

MGMT 399/Special Topics in Management

Study Abroad

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**COURSE DESCRIPTIONS:**

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**MGMT 305: Corporate Social Responsibility and Sustainability**

This course delves into the aspects of business and the future critical success factors (CSF) of sustainability and corporate social responsibility (CSR). The basis for sustainability and CSR lie in the growing body of human knowledge and the historical dilemma of Principle Agency Theory, the development and changing aspects of power and institutions within politics, society and the environment. There will be an emphasis on these issues from a historical and international context. This course will also look at alternative political, social and economic approaches to overcoming the many hurdles placed before us by our currently accepted paradigms.

Additionally, students will become familiarized with many international standards and tools being developed or already used in understanding and realizing the CSFs of the future.

Prerequisites: BCOR 250

*3 credits*

### **MGMT 311: Organizational Innovation**

This course examines how individuals and organizations innovate. This is accomplished by studying organizations of all sizes, from garage start-ups to global corporations, to see what can be learned about the creative process of innovation specifically around idea generation, evaluation and implementation. By the end of the semester, students will have identified and evaluated several product, service and non-profit ideas of their own. This course is also listed as ENTR 310.

Prerequisite: BCOR 240, BCOR 250

*3 credits*

### **MGMT 316: Organizational Behavior**

This course examines individual and group behavior in relationships and organizations. Students learn about their own behaviors, to what these are attributed and how to adapt behaviors to meet group needs. Several tools are introduced which can be used to accommodate individual differences with relationships and organizations. This course is approved as a Social Science course for the Liberal Studies Core.

Prerequisites: Junior standing

*3 credits*

### **MGMT 330: Project Management**

A project is a temporary or limited work effort focused on creating a unique outcome or product. This course is an introduction to the techniques for planning, scheduling, reporting, controlling and managing projects. Particular emphasis is given to the project planning process including project life cycle, requirements, and scope. Team roles and responsibilities, risk and contingency, budgeting, resource allocation and scheduling are also introduced. This course includes using a real project and is a preparation course for the examination for the Certified Assistant Project Manager (CAPM) certification from the Project Management Institute (PMI).

Prerequisites: BCOR 220, BCOR 250

*3 credits*

### **MGMT 350: Quality Management**

This course introduces the concepts and practices of quality management (QM). QM is a systems approach to management that aims to always increase value to the customer by designing and continuously improving organizational processes and systems. The approach encompasses all employees and extends backwards and forwards in the supply chain to encompass the entire product life cycle. Coverage specifically includes Six Sigma, Lean Manufacturing, and Statistical Process Control, as well as other improvement methods. The course begins with a historical review of QM.

Prerequisites: BCOR 220, BCOR 250

*3 credits*

### **MGMT 360: Ethical and Social Responsibility**

This course explores the natures of various interrelationships within the environment of the firm, particularly the relationship with societies and governments, including the effects of globalization on the firm. The responsibilities the firm has when pursuing its objectives and critically assessing the ethical issues associated with managerial decision making are the major focus of the course. This course satisfies the LPHI Philosophy II series Liberal Studies Requirement.

Prerequisite: LPHI 131

*3 credits*

### **MGMT 374: Applied Management Science**

This course introduces the concept of model-building and focuses on the application of standard management science models to solve practical business problems. Inventory models, queuing theory, linear programming (and its various applications), probabilistic decision models, and simulation are included. The emphasis is on the reasoning required to formulate problems correctly and the ability to accurately articulate computer-generated results.

Prerequisites: MATH 115, BCOR 220

*3 credits*



**MGMT 375: Organizational Internship**

The student works under faculty mentorship with a for-profit or not-for-profit organization and applies knowledge and skills learned throughout the curriculum. The student will maintain a journal, meet regularly with the mentor, submit a paper reflecting on the work experience in the context of the academic experience, and make a final presentation. Credit is awarded based on the time spent with the organization (50 hours per credit).

Prerequisites: Junior Standing

*1-6 credits*

**MGMT 399: Special Topics in Management**

A specially designed course which consists of topical issues in management. This is not a regularly scheduled course.

*3 credits*

**MGMT 490: Directed Studies in Management**

This course is designed to allow students to explore areas of specific interest under the tutelage of a fulltime faculty member. Topics are chosen in discussions with the faculty member responsible and approved by the faculty member responsible for the management curriculum. This course can be credit bearing from 1-6 credits depending on topic and extent of work. The culminating work for this course is a written paper which must address all aspects of the management curriculum learning goals. This course will serve as a conduit towards more and better undergraduate research. Papers written within the framework of this course should be of a quality to be submitted for publication and/or presentation by the student/professor team at an appropriate forum, e.g. conference, journal. Alternatively, papers can be presented before a panel chosen by the student and/or professor.

*1-6 credits*

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## **RISK MANAGEMENT AND INSURANCE (BSBA)**

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The undergraduate major in risk management and insurance is an innovative course of study providing our students with an overall background in risk management, life and health insurance, property and liability insurance, employee benefits, social insurance, and personal financial planning. Risk management and insurance is a proud profession. Graduates in risk management and insurance find a variety of career opportunities in insurance companies (underwriting, marketing, claims adjusting, rate making, and investment); as risk managers in business; as brokers/agents providing professional risk management/insurance/employee benefits counseling for clients; as consultants and personal financial planners; and in government social insurance programs.

The following courses must be completed to satisfy the requirements for the BSBA in Risk Management:

RISK 300/Introduction to Risk Management and Insurance

RISK 321/Commercial Insurance and Risk Management

RISK 325/Life and Health Insurance: Introduction to Employee Benefits, Retirement, and Estate Planning

RISK 415/Enterprise Risk Management

RISK 425/Insurance Operations

RISK 499/Business Continuity and Emergency Management

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## **COURSE DESCRIPTIONS:**

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**RISK 300: Introduction to Risk Management and Insurance**

The primary focus of this introductory course includes the Risk Management Process, the nature of the Insurance Industry and the evaluation of life, health, property and liability risks. The course will place an emphasis on Personal Lines Property and Casualty Insurance Products. Life Insurance, Health Insurance and Annuity topics will be introduced at the end of this course. **This course is also listed as FINC 300.**

Prerequisites: Sophomore standing

*3 credits*

**RISK 321: Commercial Insurance and Risk Management**

This course examines the major types of commercial property and liability insurance. The structure, scope, and limitations of commercial property and liability contracts are analyzed. The Course will conclude with four on-site commercial case studies in which the student will be expected to apply insurance and other risk management techniques.

Prerequisites: RISK 300

*3 credits*

**RISK 325: Life and Health Insurance; Introduction to Employee Benefits, Retirement, and Estate Planning**

This course includes life and health risk management. It explores the uses of individual, business and group products designed to treat these exposures. It will explore annuity products and provide an introduction to employee benefits and financial planning. Current and pending government insurance programs, will be reviewed to demonstrate their integration into a financial plan.

Prerequisites: Sophomore standing

*3 credits*

**RISK 375: Organizational Internship**

Selected students will be able to spend a period of time (50 hours per credit hour) working as an Intern with a local organization. During this period the student will maintain a journal, will meet regularly with a faculty member, and with a supervisor to provide continuing evaluation of quality and progress of the student's work. At the conclusion of the experience the student will submit a paper to the supervisor and faculty member and make an oral presentation.

Prerequisite: Junior standing

*1-6 credits*

**RISK 415: Enterprise Risk Management**

This course is designed to provide students with a conceptual framework for evaluating and managing an organization's risks using an enterprise-wide, or holistic, approach. The course starts with an overview of an enterprise risk management (ERM) integrated framework, including in depth discussions and exercises on developing business objectives and applying risk assessment techniques to those objectives. Risk control concepts and alternative risk financing techniques are presented next. After making sure that the students have a good understanding of these concepts, the course concludes with several classes dedicated to the practice of ERM and the practical application of ERM concepts. Students will learn and apply these concepts through lectures, exercises, cases, and guest speakers.

Prerequisites: RISK 300, RISK 321

*3 credits*

**RISK 425: Insurance Operations**

This course focuses on the key operational activities of insurance organizations. It specifically covers marketing and distribution systems, underwriting, an introduction to claims adjusting, the principles of ratemaking, reinsurance and financial statement analysis. These functional areas are studied in the context of regulatory and public policy issues. Students will analyze the operational and financial aspects of an insurance company.

Prerequisites: Risk 300

*3 credits*

**RISK 450: Retirement and Estate Planning**

This is a comprehensive course consisting of two parts: Retirement Planning and Estate Planning. The practical knowledge needed for choosing the best retirement plan and designing a plan that will meet a client's needs from a tax and retirement standpoint is discussed. Retirement planning topics include qualified plans, non-qualified plans, and IRAs. Estate Planning will include various aspects and strategies of estate and gift tax planning, including the nature, valuation, transfer, administration, and taxation of property. Emphasis is given to a basic understanding of the estate and gift tax system. This course is also listed as FINC 450.

Prerequisites: BCOR 311

*3 credits*

**RISK 499: Business Continuity and Risk Management**

This course explores the area of Business Continuity and Risk Management in a comprehensive manner to provide for organizational resilience. Particular emphasis is placed on assessing threats which may lead to disastrous events, evaluating control alternatives and implementing strategies. Practical solutions to enable an organization to mitigate risk, to manage crisis and to recover after a disaster are discussed and emphasized. The course is designed to expose the student to all aspects of a holistic Business Continuity and Risk Management program and to determine the most appropriate requirements. This class will involve development of a Business Continuity Plan for a local business enterprise.

Prerequisites: RISK 300, RISK 321

*3 credits*

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**SUPPLY CHAIN MANAGEMENT (BSBA)**

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The supply chain is defined as the “entire system of organizations, people, activities, information, and resources involved in moving a raw material, input, or service from supplier to end user.” Managing a firm’s supply chain is a complex task and requires the firm to plan its own operations in concert with its suppliers’ and customers’ operations. The introduction of just-in-time and continuous flow operations in production facilities has created the need for such intensive planning and control. The supply chain management curriculum includes the study of inventory management, transportation management, enterprise resource planning, sourcing and procurement, and decision modeling.

The following courses must be completed to satisfy the requirements for the BSBA in Supply Chain Management:

MGMT 374/Applied Management Science  
MGMT 330/Project Management  
SCMG 310/Global Logistics  
SCMG 340/Sourcing and Supply Chain Management  
SCMG 415/Supply Chain Risk Management  
SCMG 425/Supply Chain Network Design

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**COURSE DESCRIPTIONS:**

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**SCMG 310: Global Logistics**

Logistics is that activity in the supply chain that focuses on the transportation and storage of materials from supplier to user and represents a significant cost in the value chain. This course examines the implications of globalization, the impact supply chain strategies have for logistics decisions, optimization, information flows and the use of technology. Case studies and service learning will provide the opportunity for applying knowledge to actual problems.

Prerequisites: Junior standing in Business

*3 credits*

**SCMG 340: Sourcing and Supply Chain Management**

The sourcing function in the firm is of critical importance. Purchasing’s task is to provide a continuous flow of the goods and services the firm consumes in the creation of its product. Organization of the sourcing function, process, policy, strategy, supplier selection and relationships, analytical tools, quality, and performance measures are addressed. Case studies will be used throughout the course.

Prerequisites: Junior standing in Business

*3 credits*

**SCMG 415: Supply Chain Risk Management**

Supply chain risk refers to unplanned events, such as piracy and earthquakes, which cause disruption at any point in the supply chain. Integrated supply chains exacerbate risk by affecting multiple operations or inventory points. This course examines supply chain

vulnerability; reviews specific types of risk; considers the relationship between actions that improve efficiency and risk; presents methods for identifying risks; and closes with a comprehensive study of continuity planning.

Prerequisites: SCMG 340

3 credits

#### **SCMG 425: Supply Chain Network Design**

This course will integrate many of the concepts learned in earlier supply chain management courses and the business core. Supply chain design serves an important role in the competitive strategy of the firm. Key concepts and the scientific foundations underlying them are introduced, then, applied in case studies. The course takes a step-by-step approach to model-building, by starting with a simple set of assumptions and adding complexities at each solution stage. This is considered the capstone course in the supply chain management curriculum.

Prerequisites: SCMG 415

3 credits

#### **SCMG 450: Internship in Supply Chain Management**

The student works under faculty mentorship with a for-profit or not-for-profit organization and applies knowledge and skills learned throughout the curriculum. The student will maintain a journal, meet regularly with the mentor, submit a paper reflecting on the work experience in the context of the academic experience, and make a final presentation. Credit is awarded based on the time spent with the organization (50 hours per credit).

Prerequisites: Junior Standing

1-6 credits

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## **DEPARTMENT OF MARKET FOCUSED SYSTEMS & ANALYTICS**

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Duane R. Prokop, D.S.L., *Department Chairperson*

FACULTY: *Professor:* Constantine Kliorys. *Assistant Professors:* Eric Brownlee, Duane R. Prokop, Jinhee Yoo. *Instructor:* Kurt Hersch.

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## **BUSINESS ADMINISTRATION (BSBA)**

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The Business Administration Major offers a strong foundation in business complemented by advanced coursework selected to meet personal, professional and career interests. Studying fields such as accounting, economics, finance, management, risk management, and marketing will enable you to pursue a variety of career options. Whether you pursue employment with a large or small company, non-profit organization or government agency, the knowledge, skills, and abilities acquired through the Business Administration major will allow you to compete successfully in the job market.

The flexibility of the Business Administration major allows students the option of pursuing a variety of advanced courses as opposed to specializing in one field. Careful planning of courses enables students to tailor their curriculum to their particular interests. Students in this program work closely with a DSB faculty advisor in selecting and scheduling advanced coursework.

The following courses must be completed for the Business Administration major:

**Core concentration area:** Student must choose six credits from one of the following core concentration areas: Accounting, Finance, Management or Marketing.

**Two additional concentration areas:** Student must choose six credits from additional concentration area #1 and six credits from additional concentration area #2.

The additional concentration areas may be selected from: Accounting, Economics, Entrepreneurship, Finance, Healthcare Management, International Management, Management, Marketing, Risk Management and Insurance, Sport Management and Marketing and Supply Chain Management.

The core concentration area and two additional concentration areas will total 18 credits.

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## ENTREPRENEURSHIP (BSBA)

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The word entrepreneur came to the English language from the Old French word *entreprendre* which means to undertake or to begin. Another closely related word is *enterprise*...the ability to do difficult things or to solve problems in new ways. Both of these words provide insight into what an entrepreneur is all about. Accepting risk and using initiative, the entrepreneur creates new ideas, products, business ventures, industries, and even markets.

The student who majors in entrepreneurship will take a unique set of courses designed to develop the thought processes and skills required to turn possibility into reality. The core idea that drives the entrepreneur is creating value for the customer by recognizing opportunities and identifying the resources needed to capitalize on them.

The Small Business Development Center (SBDC), housed in the College of Engineering and Business, and the Erie Technology Incubator (ETI), also part of Gannon University, provide a unique opportunity to interact with and complete projects for small business owners and new business creators. You will be qualified for many career-entry positions such as sales, management, fundraising for not-for-profits, and business reporting. All are excellent opportunities to see firsthand how a business is operated and can serve as an arena for you to develop your own creative ideas.

The following courses must be completed to satisfy the requirements for the BSBA in Entrepreneurship:

- ENTR 310/Organizational Innovation
- ENTR 330/Entrepreneurial Finance
- ENTR 410/New Venture Creation
- MKTG 325/Marketing Communications
- MKTG 400/Market Research
- Choose one of the following:
  - ENTR or MKTG elective
  - MGMT 450/Internship in Management

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## COURSE DESCRIPTIONS:

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### **ENTR 310: Organizational Innovation**

Organizational Innovation provides an overview of the entrepreneurial process. In this course, we discuss where entrepreneurs get their ideas and the different types of entrepreneurial opportunities, such as start-ups, franchises and family-owned businesses, which are available to someone wanting to start a business. The two primary focuses of this course are around understanding the process of idea generation/evaluation and providing a complete understanding of the components of a business plan. By the end of the semester, students will have evaluated several start-up companies as well as identified and evaluated original product, service and non-profit ideas of their own. **This course is also listed as MGMT 311.**

Prerequisite: BCOR 240, BCOR 250

*3 credits*

**ENTR 330: Entrepreneurial Finance**

Entrepreneurial Finance focuses on the financial issues confronting start-up ventures. These ventures do not have the same standing as well-established, publicly traded corporations; therefore, a start-up must raise capital differently. We will address key questions relevant to these companies: how financial statements are created and interpreted; how much money can and should be raised; when should it be raised and from whom; what is a reasonable valuation of the company; and how funding should be structured. In this course, start-up companies will be examined at all phases of their life cycles, from initial idea generation to the ultimate harvesting of the venture. We will also investigate various organizational forms, financing options and ways to harvest the venture. **This course is also listed as FINC 330.**  
Prerequisite: BCOR 311 *3 credits*

**ENTR 410: New Venture Creation**

New Venture Creation represents the culmination of the entrepreneurship program. In this class, students integrate all of their knowledge from business core courses, as well as their advanced course work, to create a fully integrated business plan around an original business idea. Throughout the semester, the professor will act as a consultant to various student teams guiding them through the creation of a business plan including the creation of an executive summary, detailed product/service description, market analysis, operations plan and financial plan. At the end of the semester, this information will be presented to an outside group of business executives in the form of a business plan, elevator pitch and business plan presentation where the students will earn their final grade for the class.  
Prerequisites: ENTR 310, ENTR 330 *3 credits*

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**MARKETING (BSBA)**

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Marketing is art and science *and* a core business function. Most simply stated, marketing is the set of processes and activities that identify and create products and services that satisfy the wants and needs of targeted customers. But so much more lies beneath that brief definition...consumer research, communication strategies, product development, branding, selling, packaging, market segmentation, and analytics. Success in this broad and exciting field begins with a firm grounding in the basics provided by the business core curriculum. The study of marketing provides greater depth into the many areas that comprise the marketing discipline. This marketing curriculum is designed to introduce you to the many processes and practices that make up this exciting and changing discipline.

The following courses must be completed to satisfy the requirements for the BSBA in Marketing:

MKTG 320/Professional Selling and Sales Management

MKTG 325/Marketing Communications

MKTG 330/Global Marketing

MKTG 400/Market Research

MKTG 410/Strategic Marketing Management

And three courses of an advanced marketing elective planned with the student's advisor.

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**COURSE DESCRIPTIONS:**

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**MKTG 305: Customer Relationship Management**

This course examines professional selling customer relationship management (CRM) as a key strategic processes within organizations. CRM is defined as the overall process of building and maintaining profitable customer relationships by delivering value and satisfaction to the customer. Focusing on process, strategy and technology, this course leads students from understanding the fundamentals of CRM through the implementation of CRM systems and

analysis of customer data. The course examines the CRM philosophy as well as the systems in place that incorporate and integrate information from sales, marketing and service.

Prerequisites: BCOR 240

*3 credits*

### **MKTG 320: Professional Selling and Sales Management**

A comprehensive survey of contemporary concepts and techniques related to the management of a sales force. The personal selling process of giving an effective sales presentation is examined and applied in the course.

Prerequisite: BCOR 240

*3 credits*

### **MKTG 325: Marketing Communications**

This course examines the process by which integrated marketing communications programs are planned, developed, executed and measured. Emphasis is placed on understanding the role of various promotional methods in the marketing communication program of an organization to achieve effective marketing campaigns based on clear objectives, market segmentation, target marketing and cost and time parameters.

Prerequisites: BCOR 240

*3 credits*

### **MKTG 330: Global Marketing**

This course examines the environment of global marketing by assessing different political, social, cultural, economic and legal contexts. This course also examines the strategic approaches to global markets with specific reference to the global marketing mix of product, pricing, promotion and distribution decisions. The primary goal of this course is to provide students with the tools to effectively market in a competitive and dynamic global marketplace.

Prerequisites: BCOR 240

*3 credits*

### **MKTG 375: Organizational Internship**

Selected students will be able to spend a period of time (50 hours per credit hour) working as an Intern with a local organization. During this period the student will maintain a journal, will meet regularly with a faculty member, and with a supervisor to provide continuing evaluation of quality and progress of the student's work. At the conclusion of the experience the student will submit a paper to the supervisor and faculty member and make an oral presentation.

Prerequisite: Junior standing

*1-6 credits*

### **MKTG 399: Special Topics in Marketing**

A specially designed course which consists of topical issues in marketing. This is not a regularly scheduled course.

*3 credits*

### **MKTG 400: Marketing Research**

This course examines the concepts and techniques used in marketing research as problem-solving aids in managerial decision making. Problem definition, research design, types of information and measurement scales, and evaluation, and utilization of secondary data with an emphasis on electronic access are discussed. Students are trained in the basic methods of primary data collection including structured and unstructured interviews, focus groups, observational techniques, experiments and surveys. Practical and intensive applications on sample size, questionnaire design, data analyses, and interpretation are emphasized.

Prerequisites: BCOR 220

*3 credits*

### **MKTG 410: Strategic Marketing Management**

This capstone course provides an in-depth study of marketing theories, concepts, and practices as they relate to the management of the marketing function in an organization. Emphasis is placed on the managerial aspects of developing, implementing and evaluating a marketing plan.

Prerequisites: MKTG 400, Senior standing

*3 credits*

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## SPORT MANAGEMENT AND MARKETING (BSBA)

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With the proliferation of sports teams and facilities to advance sports and exercise there is a growing need for professionals interested in combining both a passion and talent for the marketing and management of the sport and exercise industries. The Sport Management and Marketing major at Gannon is an interdisciplinary major of the Dahlkemper School of Business and the Sport and Exercise Science Department, where students study the theory and application of business with a focus on the sport and exercise industries. The major provides students the opportunity to combine their dual interests in marketing/management with a specific application to the sport and exercise professions. Students in the major advance their education while drawing on multiple areas of knowledge and skills learned and experienced in the classroom, lab setting and on sports-specific sites on the local, regional and national level. The major seeks to combine a strong foundation in theory and practice in preparing the student for advanced degree programs or entry level careers in a variety of fields including, but not limited to, the marketing and management of professional sports, collegiate sports and administration, recreation and leisure studies, retail, marketing and promotions, sports communications and others.

The following courses must be completed to satisfy the requirements for the BSBA in Sport Management & Marketing:

- SMGT 300/Principles of Sport Management
- SMGT 325/Team Sports Organization and Management
- SMGT 375/Sport Facilities and Event Management
- SMGT 480/Principles of Sport Marketing
- SPRT 460/Sport Ethics
- Electives (3 credits) from the following:
  - SMGT 450/Internship in Sport Business
  - SPRT 420/Sport Psychology
  - ENTR 311/Organizational Innovation
  - SMGT 318/Sport in Society
  - MKTG 400/Marketing Research

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## COURSE DESCRIPTIONS:

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### **SMGT 300: Principles of Sport Management**

The intention of this course is to cover, in detail, the business of sport. Students will be introduced to a variety of sport business topics and complete various experiential learning projects with sports organizations. This class will help students to better understand the unique aspects of the sport business industry and apply traditional business theory and practice to the sport business setting.

Prerequisites: BCOR 250

*3 credits*

### **SMGT 318: Sport in Society**

Examination of social and ethical issues in sport. Part one exclusively discusses Socialization to sport: who plays and why, racism, sexism and classism in sport. Course makes extensive use of mainstream media materials including popular magazines and movies.

Prerequisite: BCOR 250

*3 credits*

### **SMGT 325: Team Sports Organization and Management**

In this course students will learn how to effectively manage sport organizations and events within the context of the rules, principles, and guidelines of sport governing bodies such as the National Collegiate Athletic Association (NCAA) or the National Football League (NFL). Students will also learn about the organizational structures and theories related to the management and governance of a variety of sport organizations. This course has an



international emphasis and students will also learn about the governance and organization of sports across the globe.

Prerequisites: BCOR 250

3 credits

### **SMGT 375: Sport Facilities and Event Management**

This course is a comprehensive investigation of the components of managing athletic facilities and events staged by those facilities. The course combines both theory and real world application in describing the comprehensive and time consuming behind the scenes organization that goes in to the day to day maintenance of and event planning in athletic facilities. Topics include, but are not limited to, liability, facility planning, concessions and merchandising, systems, staffing, budgeting, crowd management and security, and post event analysis.

Prerequisites: BCOR 250

3 credits

### **SMGT 450: Internship in Sport Business**

This is an individually arranged course that combines work experience with a related academic project. The course is intended to afford students an opportunity to apply theoretical classroom information in a real world environment, and develop skills beneficial to students seeking careers in sport management. The course is a culmination of major coursework, allowing students to demonstrate mastery of sport management and marketing content, apply critical thinking skills to an authentic issue, and reflect on accumulated content and experiences. Students are required to complete a minimum of 40 hours of internship experience with a sports organization per academic credit earned.

Prerequisites: Junior Standing

1-6 credits

### **SMGT 480: Principles of Sport Marketing**

This course is designed to acquaint students with comprehensive fundamental theories and issues in sport marketing, grounded within traditional marketing principles, and emphasizing unique application to the sport business industry. This course includes several real-world projects that require a high level of professionalism and mutually benefit the sports organizations and students in the course. BCOR 250

3 credits

### **Dahlkemper School of Business Courses - Prior to Fall 2014**

Other courses were offered for students admitted to a Bachelor of Science program in the Dahlkemper School of Business previous to Fall 2014. Those course descriptions can be located in the 2013-2014 undergraduate catalog or within the Academic Catalogs website at <http://www.gannon.edu/Academic-Offerings/Academic-Catalogs/>

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## **ENGINEERING AND COMPUTER SCIENCE**

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### **COMPUTER & INFORMATION SCIENCE (CIS)**

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BARRY J. BRINKMAN, Ph.D., *Chair*

FACULTY: *Professors:* Stephen T. Frezza, Sreela Sasi. *Associate Professors:* Yunkai Liu, Mei-Huei Tang. *Assistant Professors:* Barry J. Brinkman, Joshua C. Nwokeji. *Instructors:* Mark Blair, Jeremy C. Cannell.

The CIS Department maintains educational labs for teaching and project work, and servers using MAC OS X, WINDOWS and LINUX operating systems. The Mac lab offers the hardware and software environment needed for iOS app development. The general-purpose labs provide interactive environments for design and programming classes. The network lab offers a hands-on exposure to the hardware and software layers of networks. The advanced

systems lab hosts state-of-the-art creation, capture, editing, and synthesis hardware and software for multimedia productions and database functions. A project lab is maintained for faculty research, student work, and on-campus internship work.

A wide-variety of programming environments and application software are available at Gannon University. Specifically within the Department and through its course offerings the following items are presented: Java, C++, Objective -C, C#, and COBOL are core programming environments; Rational Rose™ and VISIO™ as modeling environments, and ORACLE™, SQL Server™, and Microsoft Access as database management systems.

**Programs:**

The Computer and Information Science department offers majors in:

- Computer Science – described below
- Information Systems – described under **Information Systems**
- Software Engineering – described under **Software Engineering**
- Dual Major in Computer Science and Software Engineering – curriculum under **Software Engineering**

A five-year cooperative program is available for these four majors. The student must meet the same requirements as the four-year programs, plus spend a minimum of three semester-equivalents in industry. See the *Computer and Information Science Co-Op Curriculum* section below.

**Department-Wide Outcomes**

The four computing majors managed by the CIS Department are all aimed at helping undergraduate students grow in their abilities to develop computer-based solutions to real problems. As such, all majors share expectations for what every CIS student will know and be able to do by the time they graduate. These department-wide outcomes include:

- Apply problem solving strategies to the development of effective computer based systems
- Comprehend ethical decisions and their ramifications as professionals
- Demonstrate effective communication skills as required for effective professional, and team interactions
- Demonstrate the ability to continue in professional development and expansion of their professional interests
- Maintain a comprehension of the changing technology and its ramifications

**Computer and Information Science Co-Op Curriculum**

Cycles available for Computer Science, Information Systems or Software Engineering:

**Plan A**

Year 1	Fall 1	Spring 1	Summer vacation
Year 2	Fall 2	Spring 2	4 month WP *
Year 3	Fall 3	4 month WP	Summer Courses **
Year 4	4 month WP	Spring 3	4 month WP
Year 5	Fall 4	Spring 4	---

**Plan B**

Year 1	Fall 1	Spring 1	Summer vacation
Year 2	Fall 2	4 month WP	Summer Courses
Year 3	4 month WP	Spring 2	4 month WP
Year 4	Fall 3	Spring 3	4 month WP
Year 5	Fall 4	Spring 4	---

**Plan C**

Year 1	Fall 1	Spring 1	Summer vacation
Year 2	Fall 2	Spring 2	4 month WP
Year 3	Fall 3	4 month WP	4 month WP
Year 4	4 month WP	Spring 3	Summer Courses
Year 5	Fall 4	Spring 4	---

Additional cycle available for Information Systems:

**Plan D**

Year 1	Fall 1	Spring 1	Summer vacation
Year 2	Fall 2	Spring 2	4 month WP *
Year 3	4 month WP	Spring 3	Summer Courses **
Year 4	Fall 3	4 month WP	4 month WP
Year 5	Fall 4	Spring 4	---

\*Work Period

\*\*Liberal Studies Core Courses

**Notes:**

- (1) Fall and Spring follow the regular curriculum schedule for a major.
- (2) For maximum financial aid, 12 credits of Liberal Studies Courses should be taken during the 4-month summer session listed.

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**COURSE DESCRIPTIONS:**


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**CIS 103: First-Year Seminar: Tech Think**

The First-Year Seminar is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life, and to encourage development of academic, personal and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered.

This course explores how scientific and technical professionals approach significant issues such as faith and religion. Students will engage in service learning, as well as discuss and reflect upon aspects of philosophy and theology that relate the typical approaches taken by technically-oriented persons toward issues of belief and spiritual practice. Materials include aspects of Catholic Social Teaching relevant to technical and scientific professionals. The course includes aspects of effective academic planning and study habits, as well as instruction in the use of electronic communication to support learning.

2 credits, Fall

**CIS 150: Business Technology I\***

A hands-on introduction to the application of personal computers in a modern, networked business environment. Introduction to the Windows operating system, use of the Internet, the World Wide Web, and the components of Microsoft Office, with particular emphasis on Word, Excel, and Powerpoint.

3 credits

**CIS 170: PC OS / Internet\***

A detailed discussion of modern personal computers, peripheral devices, operating systems, graphical interfaces, and use of the Internet.

1 credit

**CIS 171: PC Word Processing\***

An introduction to word processing on a personal computer. Both basic and advanced document preparation capabilities are presented. Use of a word processor to facilitate writing efforts is a course objective.

1 credit

**CIS 172: PC Electronic Spreadsheet\***

A detailed discussion of electronic spreadsheet functions and operations. Students receive extensive hands-on experience in creating and editing an electronic spreadsheet. *1 credit*

**CIS 173: PC Database\***

An introduction to relational database processing on a personal computer. Database topics of data dictionary construction, data entry, and queries to the database using SQL, form design, reports and labels, and their connection to tables. *1 credit*

**CIS 174: PC Graphical Presentation\***

A detailed discussion of computer-based graphical presentation software. Students receive extensive hands-on experience creating professional graphical presentations and slide shows. *1 credit*

**CIS 180: Problem Solving & Computer Programming**

The course focuses on problem solving and its relationship to computer programming. The student is introduced to the tools for developing the solution to a problem, and its subsequent implementation as an algorithm in a computer program. Once the introductory concepts of computer algorithm development have been assimilated, the student progresses to creating programs in the Java programming language including sequence, condition, iteration, functional decomposition and object use.

Co-requisite: CIS 181

Prerequisite: High School Trigonometry or equivalent

*2 credits, Fall*

**CIS 181: Problem Solving & Computer Programming Lab**

The course focuses on problem solving and its relationship to computer programming. The student is introduced to the tools for developing the solution to a problem, and its subsequent implementation as an algorithm in a computer program. Once the introductory concepts of computer algorithm development have been assimilated, the student progresses to creating programs in the Java programming language including sequence, condition, iteration, functional decomposition and object use.

Co-requisite: CIS 180

Prerequisite: High School Trigonometry or equivalent

*1 credit, Fall*

**CIS 182: Object-Oriented Programming**

The course is aimed at developing advanced object-oriented programming skills, and assumes a foundation in the basic syntax of Java. The student will explore the basis of software development using the major constructs of encapsulation, polymorphism, inheritance and dynamic binding. Topics include GUI objects, event-driven programming, threading, networking and exception handling.

Co-requisite: CIS 183

Prerequisite: CIS 180 and CIS 181

*2 credits, Spring*

**CIS 183: Object-Oriented Programming Lab**

The course is aimed at developing advanced object-oriented programming skills, and assumes a foundation in the basic syntax of Java. The student will explore the basis of software development using the major constructs of encapsulation, polymorphism, inheritance and dynamic binding. Topics include GUI objects, event-driven programming, threading, networking and exception handling.

Co-requisite: CIS 182

Prerequisite: CIS 180 and CIS 181

*1 credit, Spring*

**CIS 195: Principles of Systems**

An overview course introducing the concepts and value of data, information, and systems to the decision-making and strategic capabilities of an organization.

Prerequisite: CIS 150 or CIS 180

*3 credits, Spring*

**CIS 207: Introduction to Business Programming - COBOL**

A competency-building course focusing on the basic syntax and semantics of the COBOL language. Programming projects are used to introduce the student to system design, documentation, and coordination of programs.

Prerequisite: CIS 180 and CIS 181

*3 credits, Fall*

**CIS 219: Programming in UNIX**

Students are introduced to the UNIX system, shell programming and program development in the UNIX environment. Basic commands and utilities provided through standard UNIX or UNIX-dialect shell are covered. The UNIX command language interpreter and the ability to write routines within its structure are addressed.

Prerequisite: CIS 180 and CIS 181

*3 credits, Fall*

**CIS 220: Data Structures and Algorithms**

An in-depth programming-based study of data structures and of algorithms for their manipulation. Arrays, tables, stacks, queues, trees, linked lists, sorting, searching and hashing are topics considered.

Prerequisite: CIS 182 and CIS 183

*3 credits, Fall*

**CIS 223: Algorithm Development Lab**

This course provides a closer analysis of algorithms introduced in MATH 223 and gives the student an opportunity to implement the algorithms in computer code. Fundamental techniques, searching, sorting, tree, graph and backtracking algorithms are covered.

Co-requisite: MATH 223

Prerequisite: CIS 220

*1 credit, Spring*

**CIS 239: The User Experience**

This course deals with the study of the user experience (UX), and its relationship to human computer interaction. This course includes identifying and assessing usability issues, particularly as they apply to computer-based systems. Includes coverage of UX goals and processes, usability factors and measurements, wireframes and other prototyping technologies, and introductory web implementation. Special attention is given to usability and usability testing.

*3 credits, Fall*

**CIS 240: Web Management and Design**

The course aims at providing an introduction to the tools and knowledge necessary to design and manage a web site on the Internet. Topics include servers and clients, HTML, CGI scripting, languages, business and ethical aspects of the web.

*3 credits, Spring*

**CIS 245: Multimedia Production**

Multimedia software uses text, graphics, sound, animation, and video to entertain, inform or educate its users. This course examines all parts of the multimedia software development process and provides hands-on experience with the use of multimedia software authoring tools.

Co-requisite: CIS 246

*2 credits*

**CIS 246: Multimedia Production Lab**

Interactive lab taken concurrently with CIS 245.

Co-requisite: CIS 245

*1 credit*

**CIS 250: Business Technology II**

A hands-on study of the application of personal computers in a modern, networked business environment. Builds on material covered in CIS 150 Business Technology I. Provides instruction in the use of Microsoft Office components, with particular emphasis on advanced modeling using Excel. Other topics covered will be creation of web pages via HTML and other web authoring tools, integration of various Microsoft Office applications.

Prerequisite: CIS 150

*3 credits, Spring*

**CIS 255: Database Management Systems**

A skills-building course in the fundamentals of database design, creation, and operations. Course topics include the ability to create a project-based database and its associated queries.

*3 credits, Spring*

**CIS 270: Information Technology and Operations**

An in-depth, experiential course focusing on hardware and systems maintenance procedures. Topics include troubleshooting options, system configuration, system recovery, data and network maintenance, and general management capabilities to enable system operations.

*3 credits, Spring*

**CIS 277: Mobile Application Development I**

This is an introductory course into the methods and tools for developing mobile applications for integrated devices such as iOS, Android and other mobile computing platforms. Topics include introduction to the coding and development platforms for one of the major mobile platforms (e.g., iOS or Android), unit testing, source code control, the development of prototype applications, and deployment.

Co-requisite: CIS 287

Prerequisite: CIS 182, CIS 183 and CIS 239

*3 credits, Spring*

**CIS 287: Object-Oriented Design Lab**

An advanced treatment of methods for producing a software design. Includes treatment of the developing Unified Modeling Language (UML) models and their application to software development.

Co-requisite: CIS 277

Prerequisite: CIS 182 and CIS 183

*1 credit, Spring*

**CIS 290: Introduction to Networks**

The theory and techniques of data communications design and analysis are studied. Topics include data communication concepts, terminology, and standards. Error correction and detection, LANs, ISO/OSI layers are also an integral part of this course.

*3 credits, Fall*

**CIS 302: CIS Professional Seminar**

The course focuses on current issues facing engineering and software professionals. Included with the focus, is an introduction to technical speaking as well as a review of trends in the software, computing and other engineering fields, job prospects, political issues, team and workplace behavior.

Prerequisite: Junior status in a CIS or Engineering program

*1 credit, Spring*

**CIS 303: CIS Leadership Seminar**

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in the various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for students' leadership development as reflected both in this course and in the co-requisite Theology or Philosophy Series III course. The course provides an introduction to the practices of ethical leadership for technical professionals as well as a review of trends in the software & computing fields, job prospects, political issues, and team and workplace behavior, including current issues facing technical professionals. This course qualifies as an LS-approved Leadership Seminar.

Co-requisite: LTHE/LPHI III series course

*1 credit*

**CIS 305: Essentials of UNIX Administration**

Essentials of UNIX administration such as account management, file structure, security features are presented.

Prerequisite: CIS 219

*1 credit, Fall*

**CIS 315: Software Engineering**

The course provides an overview of software requirements analysis, the software design process, verification and validation, software maintenance, and documentation. The major emphasis of the course is a project that provides experience in the design and development of a significant software project.

Prerequisite: CIS 277 and CIS 287

*3 credits, Spring*

**CIS 317: Software Maintenance and Deployment**

Introduces the concepts and approaches for the maintenance, refactoring and deployment of software projects, particularly in a rigorous life-cycle process. Focuses on materials associated with software maintenance, process, metrics and quality related to the development, improvement and deployment of high-quality software and systems. The course includes significant project work where students apply a rigorous process to deploy a refactored software product with improved features and quality.

Prerequisite: CIS 277

*3 credits, Fall*

**CIS 318: Software Architecture**

The course focuses on the issues, techniques, strategies, representations and patterns used to implement a software component or a large-scale system. Specifically, it emphasizes the defining architectures that conform to functional requirements and that work within defined constraints including resource, performance, reliability, and security.

Prerequisite: CIS 277 and CIS 287

*3 credits, Spring*

**CIS 320: Analysis & Design of Algorithms**

Focusing on the study of the design, analysis, and complexity of algorithms, fundamental techniques, searching, sorting and order statistics, and basic graph algorithms are reviewed. The course introduces the ideas of time and space complexity. Emphasis is on providing the student with a firm background to be used for further study of algorithms using more advanced techniques.

Prerequisite: CIS 220 and MATH 222

*3 credits, Fall*

**CIS 325: Formal Languages & Automata**

The course presents the abstract models of computers (finite automata, pushdown automata, and Turing machines) and the language classes they recognize or generate (regular, context-free, and recursively enumerable). Topics include Turing machines, recursive functions, Church's thesis, undecidability, and the halting problem. Applications of these models to compiler design, algorithms, and complexity theory are also presented.

Prerequisite: CIS 220 and MATH 222

*3 credits, Fall*

**CIS 326: Formal Methods in Software Development**

Focusing on the issues and techniques needed to apply formal specification methods to the development of software, the course uses mathematical and logical formalism to develop a precise statement of what software is to do.

Prerequisite: CIS 182, CIS 183 and MATH 223

*3 credits, Fall*

**CIS 330: Operating Systems**

An introduction to the study of operating systems. Topics covered include: process manipulation and synchronization, processor management, storage management, security, I/O and file systems, and basic distributed system concepts.

Prerequisite: CIS 220 and CIS 219

*3 credits, Fall*

**CIS 335: Systems Analysis and Design**

An introduction to the role and responsibilities of a systems analyst. Students examine systems by analysis, modeling, and design at the enterprise, process, logical, data, and technology levels. Optionally included topics are feasibility analysis, technology evaluation, project management, object-oriented analysis.

Prerequisite: CIS 180, CIS 181, and CIS 195 or CIS 287

*3 credits, Fall*

**CIS 337: IS Architecture and Deployment**

A project and team-based course emphasizing the practical issues in the design and implementation of information systems. The rational integration of technology options across an enterprise given organizational needs and constraints is emphasized.

Prerequisite: CIS 195 or CIS 287

*3 credits, Spring*

**CIS 340: Multi-Tiered Systems**

A project and team-based course emphasizing the practical issues in implementing distributed and multi-tiered systems at the organizational, function, and user-support levels. Emphasis is placed on understanding the file, network, and data interactions of multi-tiered systems and on managing the systems with respect to reliability, security, and cost.

Prerequisite: CIS 255 and CIS 335 or CIS 287

*3 credits, Fall*

**CIS 350: Requirements and Project Management**

Focusing on the management of software requirements and projects, particularly teams and stakeholders, the course includes coverage of requirements elicitation, analysis, documentation, and negotiation. It also includes the roles and methods of effective technical project management. Typical coverage includes the cost of quality, and its implications for requirements and project management.

Prerequisite: MATH 312 or BCOR 220

*3 credits, Spring*

**CIS 353: Global Project Management**

This course focuses on experiential learning emphasizing software development with remote, multinational teams using an open-ended group project approach. Students participating in this course will be co-developing an IT project with other remote teams, for a project that is primarily sourced in an off-shore location. Students will help to identify the scope of the overall project, as well as the assignment and responsibility for a portion of that project. Project responsibilities, software and team interfaces will all have to be defined and managed by the team members, facilitated by one or more faculty members from the participating institutions. The heart of the experience is on project planning, scope management, and coordination amongst a culturally and linguistically diverse development team. Ultimately, the goal is to produce the requirements for, the planning of, and where appropriate, creation of a prototype system components for use by the off-shore stakeholder per their requirements. Students are required to travel to the off-shore location to meet with the client and the development teams as part of the project launch. This may include a second trip to close out the project with the client.

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in the various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for students' leadership development as reflected both in this course and in the co-requisite Theology or Philosophy Series III course.

Prerequisite: Satisfactory Performance in MATH 312 (Probability & Statistics), BCOR 220 (Business statistics) or equivalent. Junior Standing in CEB programs. Permission of Instructor and agreement to course-deposit policy are required.

Co-requisite: LTHE/LPHI III series course

*4 credits, Fall*

**CIS 355: Dynamic Web Development**

Focuses on the development of web applications with user interface conventions that facilitate viewing, searching, and changing of information stored in a relational database. The student will also learn to set up and configure the development environment for applications requiring a web client, web server, application server and relational database.

Prerequisite: CIS 182, CIS 183 and CIS 255

*3 credits, Fall*

**CIS 360: Comparative Languages**

An introduction to modern computing concepts and computational models as embodied in a



number of different classes of languages. The course includes an introduction to (1) function-based languages such as ML, LISP, Scheme; (2) logic-based languages such as Prolog, Parlog, Strand, OPS; and (3) object-oriented languages such as JAVA, Smalltalk, Eiffel.

Prerequisite: CIS 182 and CIS 183

*3 credits, Fall*

### **CIS 370: Compilers and Language Design**

Introduction to the basic concepts of compiler design and implementation including: lexical, syntactic, semantic analysis, and target code generation. Topics are presented from an implementation point of view.

Prerequisite: CIS 182, CIS 183 and CIS 219

*3 credits, Fall*

### **CIS 375: Server Management**

A lab-oriented class designed to provide students with the information necessary to administer the Windows-based server family. Topics include installation and setup of a domain, along with DHCP, DNS, WINS and other server-related services with replication. Remote administration covered in great detail also.

Prerequisite: CIS 290

*3 credits, Spring*

### **CIS 377: Mobile Application Development II**

A project-based course for developing mobile applications for integrated devices such as iOS, Android and other mobile computing platforms. Includes introduction to the coding and development platforms for one of the major mobile platforms (e.g., iOS or Android), unit testing, source code control, and deployment includes the development of useable applications.

Prerequisite: CIS 277 and CIS 287

*3 credits, Fall*

### **CIS 381: Directed Research**

Directed research and development in software and its applications.

Prerequisite: Permission of the instructor

*1 credit*

### **CIS 382: Directed Research**

Directed research and development in software and its applications.

Prerequisite: Permission of the instructor

*2 credits*

### **CIS 383: Directed Research**

Directed research and development in software and its applications.

Prerequisite: Permission of the instructor

*3 credits*

### **CIS 385: Network Design & Management**

An advanced network design course covering contemporary network computing, including data, voice, multimedia, WAN and intranets. Detailed discussions along with hands-on laboratory experience with various hardware and software components that comprise these networks. Network analysis to monitor traffic flow and to optimize overall network design is included.

Prerequisite: CIS 290 or permission of instructor

Co-requisite: CIS 386

*2 credits, Fall*

### **CIS 386: Network Design & Management Lab**

Interactive laboratory to be taken concurrently with CIS 385.

Corequisite: CIS 385

*1 credit, Fall*

### **CIS 387: System and Network Security**

The course reviews standard computer security for desktop and server-based systems. Coverage includes network security issues and techniques. Ethical hacking and defenses against unethical hacking and other computer and network intrusions are discussed.

Prerequisite: CIS 290 and written permission of the instructor.

*3 credits, Spring*

**CIS 390: Distributed Programming**

An introduction to the fundamental techniques and tools used developing programs that rely on inter-process communication. Topics include TCP/IP, client-server paradigm, daemon programs, client socket calls, server socket calls, concurrent vs. iterative servers, connectionless and connection-oriented server paradigms, advanced topics.

Prerequisite: CIS 182, CIS 183 and CIS 330

*3 credits, Spring*

**CIS 391-396: Special Topics in Computer and Information Science**

Special courses developed from student interest in all areas of computer and information science. A brief description of current content to be announced and may be included in the schedule of classes. The course number may be taken more than once.

Prerequisite: Permission of the Chair of the department

*3 credits*

**CIS 400: Internship**

In conjunction with a local industry or business, the student participates in practical training related to his/her major. Academic requirements specified by the department.

*3 credits*

**CIS 415: Software Testing and Quality Assurance**

The course is concerned with understanding the role of quality assurance in the software development cycle, and applying these techniques to software products. Course topics include test design methods, test planning, automated test support, quality measurement, and quality tracking techniques.

Prerequisite: CIS 315

*3 credits, Fall*

**CIS 438: Human Interface Design & Maintenance**

The course deals with human-computer interaction and covers a wide range of topics, including software tools, usability issues, direct manipulation, command and natural languages, and multiple-window strategies. The course includes identifying and assessing the issues surrounding the maintenance of code, particularly in the context of HCI. Special emphasis is also given to design and maintenance issues for web-enabled systems.

Prerequisite: CIS 355 or CIS 277

*3 credits, Fall*

**CIS 445: Advanced Multi-Media**

The course covers advanced multimedia concepts such as graphics, animation, video and sound; as well as the tools used to create multimedia applications. In addition, the course presents the design principles and management skills needed to develop dynamic, interactive multimedia products.

Prerequisite: CIS 245, CIS 246 or permission of the instructor

*3 credits, Spring*

**CIS 457: Senior Design I**

The Liberal Studies senior capstone is the culminating experience of the Core curriculum and therefore requires students to integrate knowledge and skills from their major study areas, Liberal Studies courses, and co-curricular experiences. The course emphasizes cultural competence, leadership, ethical reasoning, Catholic social teaching, and LIFECORE. CIS 457 is the first class in a 2-semester capstone design sequence with emphasis on working effectively in a team environment. Students review systems design techniques, form teams, and begin the development of an end product. Course topics include systems analysis, language and presentation skills, team building, project management, ethical issues in the digital world.

Prerequisite: Senior status in a CIS Program, CIS 287 or CIS 335, and

LTHE 227 or LPHI 237

*3 credits, Fall*

**CIS 458: Senior Design II Lab**

The completion of the capstone design sequence. Students develop and deliver a completed end product. Emphasis is on working effectively in cross-disciplinary teams. Course topics include organizational behavior, quality assurance, documentation, design process and process metrics, risk management, written and oral presentation skills, ethical issues in the digital world.

Prerequisite: CIS 457

*3 credits, Spring*

**SEECs 101, 102, 201, 202, 301, 302, 401, 402: Professional and Personal Enrichment Seminar**

The series of seminars for SEECs students is built around a curriculum that addresses both the professional and personal growth of the scholars. Each semester of the seminar includes a design component, a professional development component, and a personal development component. Considerable interaction among SEECs students and the faculty members fosters a sense of professional community among the students. Developmental workshops are offered to build academic, career, and social skills. Organizational and leadership skills are developed through team activities, colloquium speakers, and field trips. The course features a project where SEECs students from different academic levels and majors work together along with a community non-profit organization to identify, design, and implement a solution to a technological problem to aid the organization.

**SEECs 101: Professional and Personal Enrichment Seminar**

See course description above

In the first semester the SEECs seminar focuses on preparation for lifelong learning experiences.

Prerequisite: SEECs recipient with Freshman standing at Gannon University      *0 credit, Fall*

**SEECs 102: Professional and Personal Enrichment Seminar**

See course description above

In the second semester the SEECs seminar focuses continues to focus on preparation for lifelong learning experiences.

Prerequisite: SEECs recipient with Freshman standing at Gannon University      *0 credit, Spring*

**SEECs 201: Professional and Personal Enrichment Seminar**

See course description above

This semester the SEECs seminar focuses on the exploration of the roles of STEM professionals, specifically engineers and computer scientists, in society.

Prerequisite: SEECs recipient with Sophomore standing at Gannon University      *0 credit, Fall*

**SEECs 202: Professional and Personal Enrichment Seminar**

See course description above

This semester the SEECs seminar continues to focus on the exploration of the roles of STEM professionals, specifically engineers and computer scientists, in society.

Prerequisite: SEECs recipient with Sophomore standing at Gannon University      *0 credit, Spring*

**SEECs 301: Professional and Personal Enrichment Seminar**

See course description above

This semester the SEECs seminar focuses on the interaction with professionals and society, and preparation for professional practice or advanced education.

Prerequisite: SEECs recipient with Junior standing at Gannon University      *0 credit, Fall*

**SEECs 302: Professional and Personal Enrichment Seminar**

See course description above

This semester the SEECs seminar continues to focus on the interaction with professionals and society, and preparation for professional practice or advanced education.

Prerequisite: SEECs recipient with Junior standing at Gannon University      *0 credit, Spring*

**SEECs 401: Professional and Personal Enrichment Seminar**

See course description above

In the first semester the SEECs seminar focuses on preparation for potential educational and career paths taken after graduation from Gannon University and on personal growth.

Prerequisite: SEECs recipient with Senior standing at Gannon University      *0 credit, Fall*

**SEECs 402: Professional and Personal Enrichment Seminar**

See course description above

In this semester the SEECs seminar continues to focus on preparation for potential educational and career paths taken after graduation from Gannon University, and on personal growth.

Prerequisite: SEECs recipient with Senior standing at Gannon University      *0 credit, Spring*

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## COMPUTER SCIENCE (CS)

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The Computer Science (CS) major is designed to develop the analytical ability and expertise in computer usage, both in software creation and usage, which are necessary in the fields of science, technology, and industry. In addition to the computer courses, the program provides a concentration of mathematics and physics courses which are necessary for the development of scientific applications. The curriculum is oriented towards preparing students for graduate studies or for career opportunities in software development where mathematical and technical skills are necessary to analyze and solve problems.

### **Aims and Objectives:**

The CS major prepares its graduates to achieve significant career and professional accomplishments in four ways: as employable and accountable professionals, competent problem solvers, and selfless contributors.

As employable professionals, CS graduates are well prepared for employment or graduate work in their field, and to continue working in the chosen or related fields. As accountable professionals, the graduates are accountable for their professional roles, and as such, pursue their profession in an ethical manner. This includes the responsibility for, or leadership in research/development projects or teams, aspects of major system components, or business development work. As competent problem solvers, the graduates apply current computing technology knowledge, skills, techniques and methods to develop effective solutions for problems, improve product, process and/or organizational elements, or to innovate. As selfless contributors, the graduates voluntarily give their time, talent, and/or money to their community, profession, church and/or society.

### **Opportunities:**

The field of computer science is one of the fastest-growing employment markets in today's society. Consequently, employment and research opportunities continue to be available to program participants before graduation. Applications of the training provided in the program include a wide range of specialization, including research, statistics, and scientific applications on mobile, workstation and microprocessor computer systems.

### **Program Outcomes:**

Gannon's Computer Science program is accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>. Gannon's Computer Science program has enjoyed a long history of successful students who have learned to design and build software and to apply computer science methods in both development and research domains.

Gannon's Computer Science program has a strong focus on problem-solving beginning with the very first course in computing (*CIS 180 Problem Solving & Computer Programming*) and carried through into the senior design sequence (*CIS 457/458 Senior Design*). Throughout the learning process, students learn how to effectively define and represent both problems and the solutions needed to solve those problems. Throughout the course of study, students learn and practice making ethical decisions.

All students will learn how to utilize information and computer technology, while developing and maintaining a comprehension of the changing technology used in computer-based systems. Through this learning process, we expect students to own a desire for continuous improvement and demonstrate effective verbal, written, and listening communication skills.

Specifically, Computer Science students completing our program learn to:

- **Design and build** software
- **Apply** mathematics, algorithms and CS theory to solve computational problems

### Integration:

One of the hallmarks of Gannon's CS degree is its integration with traditional liberal-studies education. Gannon's CS majors not only learn computing well, but also learn how to synthesize, think critically, and communicate well. In our program, bridging traditional courses like writing, philosophy, theology and ethics begins in the *CIS 103 CIS First-Year Seminar*, and continues throughout the program, culminating in the *CIS 457/458 Senior Design* sequence.

All CIS course descriptions are provided in the section *Computer and Information Science*

### CIS Core Courses

CIS 103	First-Year Seminar	CIS 302	CIS Professional Seminar
CIS 180/181	Problem Solving & Computer Programming and Lab	CIS 303	CIS Leadership Seminar
CIS 182/183	Object-Oriented Programming and Lab	CIS 355	Dynamic Web Development
CIS 219	Programming in UNIX	CIS 457	Senior Design I
CIS 255	Database Management Systems	CIS 458	Senior Design II Lab
CIS 290	Introduction to Networks		

### Computer Science Courses

CIS 220	Data Structures & Algorithms	CIS 330	Operating Systems
CIS 223	Algorithm Development Lab	CIS 360	Comparative Languages
CIS 239	The User Experience	CIS 387	System & Network Security
CIS 277	Mobile Appl. Development I	CIS 390	Distributed Programming
CIS 287	Object-Oriented Design Lab	ECE 337	Computer Architecture
CIS 315	Software Engineering	MATH 310	Number Theory & Cryptography
CIS 326	Formal Methods in Software Development		

### Technical Electives

Students choose two technical electives with approval of their academic advisor. Aside from regular CS courses, the courses typical for CS Technical Electives include:

CIS 207	Introduction to Business Programming: COBOL	CIS 353	Global Project Management
CIS 240	Web Management and Design	CIS 385/386	Network Design & Management and Lab
CIS 245/246	Multimedia Prod. and Lab	CIS 375	Server Management
CIS 270	Info. Tech. and Operations	CIS 391-6	Special Topics in CIS
CIS 317	Software Maint. & Deployment	CIS 400	Internship
CIS 318	Software Architecture	CIS 415	Software Testing & Quality Assurance
CIS 335	Systems Analysis and Design	CIS 438	Human Interface Design & Maintenance
CIS 337	IS Architectures and Deployment	CIS 445	Advanced Multimedia
CIS 340	Multi-Tiered Systems	<i>Other CIS 300- or 400 level course with permission</i>	

Science Electives

Students choose one science elective with approval of their academic advisor. This may not be courses that are prerequisites for other required courses. Science courses with associated labs qualified for majors or minors in that discipline may be used as science electives.

Computer Science Curriculum

FRESHMAN	
<i>Fall</i>	<i>Spring</i>
2 First-Year Seminar/CIS 103	2 Object-Oriented Prog./CIS 182
2 Prob. Solv. & Comp. Prog./CIS 180	1 Object-Oriented Prog. Lab/CIS 183
1 Prob. Solv. & Comp. Prog. Lab/CIS 181	3 Calculus 2/MATH 141
3 Calculus 1/MATH 140	3 Critical Anal. & Comp./LENG 112
3 Introduction to Philosophy/LPHI 131	3 History of the West & the World/ LHST 111
3 College Composition/LENG 111	3 Fund of Physics 1: Mechanics/ PHYS 210
3 Sacred Scripture/LTHE 121	1 Fund of Physics 1 Lab/PHYS 211
<hr/> 17	<hr/> 16
SOPHOMORE	
<i>Fall</i>	<i>Spring</i>
3 Programming in UNIX/CIS 219	3 Database Mgmt. Systems/CIS 255
3 Data Structures & Algorithms/CIS 220	1 Algorithm Dev. Lab/CIS 223
3 The User Experience/CIS 239	3 Discrete Mathematics 2/MATH 223
3 Intro. Networks/CIS 290	3 Mobile Appl. Dev. I/CIS 277
3 Discrete Mathematics 1/MATH 222	1 Object-Oriented Design Lab/CIS 287
3 Project Economics/ECON 285	3 Philosophy II Series/LPHI
	3 Fund of Physics 2: Fluids and Thermodynamics/PHYS 212
<hr/> 18	1 Fund of Physics 2 Lab/PHYS 213
	<hr/> 18
JUNIOR	
<i>Fall</i>	<i>Spring</i>
3 Dynamic Web Development/CIS 355	1 CIS Professional Seminar/CIS 302
3 Formal Methods in Software/CIS 326	1 CIS Leadership Seminar/CIS 303
3 Operating Systems/CIS 330	3 Software Engineering/CIS 315
3 Probability & Statistics 1/MATH 312	3 CIS Technical Elective/CIS
3 Theology II Series/LTHE	3 Theology or Philosophy Series III/ LTHE <i>or</i> LPHI
	3 Computer Architecture/ECE 337
<hr/> 15	<hr/> 14
SENIOR	
<i>Fall</i>	<i>Spring</i>
3 Senior Design I/CIS 457	3 Senior Design II Lab/CIS 458
3 Comparative Languages/CIS 360	3 Distributed Programming/CIS 390
3 System and Network Security/CIS 387	3 Literature Series/LENG
3 CIS Technical Elective/CIS	3 Fine Arts Series/LFIN
3 Science Elective	3 Number Theory & Cryptography/ MATH 310
<hr/> 15	<hr/> 15

**Computer Science Minor Requirements (18 credits)**

- 3 Problem Solving and Computer Programming & Lab/CIS 180 & CIS 181
- 3 Object-Oriented Programming & Lab/CIS 182 & CIS 183
- 3 Data Structures and Algorithms/CIS 220
- 3 The User Experience/CIS 239
- 3 Mobile Application Development I/CIS 277
- 3 Introduction to Networks/CIS 290

18

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## ELECTRICAL and COMPUTER ENGINEERING

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WOOKWON LEE, D.Sc., P.E., *Chairperson*

FACULTY: *Professors:* Mehmet Cultu, Fong Mak, Ramakrishnan Sundaram. *Associate Professors:* Wookwon Lee, Lin Zhao, Qing Zheng, Yong-Kyu Jung. *Instructor:* Donald MacKellar.

**Program Educational Objectives:**

The Electrical and Computer Engineering Program has three options: *Electrical and Electronics*, *Bioelectrical Engineering*, and *Computer Engineering*. The program is designed to guide students to build technical competency, and effective communication and leadership skills. Our program integrates the Liberal Studies Core and emphasizes holistic student development in accordance with the mission of Gannon University. The program educational objectives for the undergraduate program, which leads to a Bachelor of Science degree in Electrical Engineering, are to produce graduates who:

1. Demonstrate *professional ethics* and *personal values* in daily and professional life that exercise informed literary and aesthetic judgments by leveraging diverse cultures and societies
2. Demonstrate *teamwork and leadership qualities* and/or *attainment of leadership roles* in a global work environment
3. Demonstrate *technical competency* in applying comprehensive engineering knowledge throughout their chosen profession
4. Demonstrate *passion for life-long learning* through engaging in the rapidly changing and emerging areas of technology, and/or continued professional development

To achieve these objectives, the ECE Program maintains a modern curriculum, state-of-the-art laboratories and teaching techniques, a well-qualified faculty, and a strong advising system.

**Student Outcomes:**

This program of study has been specifically developed so that students completing our program shall have:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) an ability to function on multidisciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems

- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (i) a recognition of the need for, and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- (l) a knowledge and an ability to apply mathematics including probability, statistics, and discrete mathematics
- (m) an ability to develop systems containing hardware and software components
- (n) an ability to analyze and design complex electrical and electronic devices

**Opportunities:**

Electrical and Computer Engineering covers a wide variety of areas:

- Computer and Digital Systems Engineering
- Telecommunications Systems Engineering
- Hardware & Software Engineering
- Embedded Systems Engineering
- Information Technology
- Power Generation and Distribution
- Power Electronics and Machine Drive/Control
- Electronic Design and Circuit Fabrication
- Biomedical Signal and Processing
- Bioelectronics
- Control Systems Engineering
- Optical Engineering

In these challenging fields there are several areas where engineers contribute:

- Research — Create and prove new ideas.
- Design & Development — Apply research & engineering techniques to the solution of problems.
- Process & Quality Control — Apply analysis skills to improve product and process effectiveness.
- Production — Apply knowledge to manage manufacturing.
- Marketing & Sales — Identify and fulfill the needs of customers and markets.
- Service — Apply engineering skills to maintain products and serve customer needs.

**Facilities:**

The department has laboratories for undergraduate education and research. These include specific laboratories that support:

- circuits and electronics
- communications
- digital logic & microprocessors
- PC/Unix Computing
- power electronics and electric machines



**The Program:**

Electrical Engineering students are required to take a total of 129-130 credits depending on option taken. This includes 39 credits of Liberal Studies Core composed of humanities and social science, 32-37 additional credits of basic science and math, and 54-59 credits of engineering courses. The breakdown of courses in the categories is given in the course descriptions below.

This program leads to a Bachelors of Science degree in Electrical Engineering. This degree is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

There are three technical options in Electrical and Computer Engineering. They are: *Electrical and Electronics Option*, *Bioelectrical Engineering Option*, and *Computer Engineering Option*. The freshmen year is the same for all options. Students should select one of the options by the beginning of their sophomore year. The student can switch options, but this may require additional coursework.

A five-year Electrical Engineering cooperative program is available. The student must meet the same requirements as the four-year program, plus spend a minimum of three semester equivalents in industry. In addition, a five-year Electrical Engineering/MBA program is available. The student must meet the same requirements as the four-year program plus four more semesters (2 summers) completing the MBA.

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**COURSE DESCRIPTIONS:**

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**ENG 100: First-Year Seminar in Engineering**

The First-Year Seminar in Engineering is designed to orient the new student to Gannon University, to introduce engineering as a professional field, to connect with the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life, and to encourage development of academic, personal and spiritual aspects of the student's life. The First-Year Seminar in Engineering will stimulate and enhance the student's interest in and their understanding of engineering.

2 credits

**ENG 101: Introduction to Engineering**

Introduction to Engineering is intended to stimulate and enhance student's interest and their understanding of engineering. Various disciplines will be reviewed. The design process, problem solving and systems approach to engineering design will be presented. Consideration on criteria of economics, environmental concerns, ethics, health and safety will be discussed. The experimental component of the course is intended to review the foundation of scientific experimentation and reporting and introduce various measurement devices and methods used in engineering. The importance of experience, observation and analogies in problem solving will be emphasized. Various skills needed for problem solving in engineering will be discussed and practiced throughout the course. These skills include team skills, perspective of quantity and size, communications skills and basic computer skills.

3 credits

**ENG 364: Engineering Economics**

Basic elements and methods of economy as applied to engineering, elements of economy, cash flow diagrams, economy factors and their use, depreciation and depletion, present worth and cost, benefit/cost ratio, service life, replacement and retirement analysis.

Prerequisite: Instructor's permission and junior standing

3 credits

**ENG 399: Co-op Placement**

For the students in the five year Co-op option. Students register for each full period in industry. Students are evaluated by an engineer in industry and are under the mentorship of the department faculty.

Prerequisite: Permission of the department

0 credit

**ECE 105: Engineering Tools Applications**

This course introduces students to use MATLAB as an engineering tool to solve engineering problems. The emphasis is on a top-down design methodology and uses it consistently throughout problem solving. Topics include essential computer programming skills with good programming practices that provide a strong foundation to other advanced languages. Different applications such as circuit analysis and mathematical algorithms are examples covered in the course.

Co-requisite: ECE 106

*1 credit*

**ECE 106: Engineering Tools Applications Lab**

Laboratory experience to complement ECE 105. Three hours per week. Concurrent with ECE 105.

Co-requisite: ECE 105

*1 credit*

**ECE 111: Introduction to C Programming**

This course is designed for students to build a solid foundation in problem solving with C programming language. Introductory C programming concepts and techniques will be discussed. Contents of the course include: program structure, data types, variables, flow control, functions, I/O's, arrays, strings, pointers, structure and union.

*3 credits*

**ECE 140: Digital Logic Design**

This course introduces fundamental design concepts and processes for digital logic. Boolean algebra and logic gate operations are discussed, followed by combinational network design and sequential network concepts and design. The use of computer-aided design tools to support circuit design is an integral part of the course.

Co-requisite: ECE 141

*3 credits*

**ECE 141: Digital Logic Design Laboratory**

This laboratory course is to be taken concurrently with ECE140. The laboratory provides hands-on experience with logic design that includes the applications of Boolean Algebra, Karnaugh Maps, decoders, multiplexers, and flip-flops. Topics also include combinational network design and sequential network design. The use of contemporary software tools to support the digital design process is an integral part of the laboratory.

Co-requisite: ECE 140

*1 credit*

**ECE 216: Problem Solving with Object-Oriented Design**

This course is designed for students to develop ability in problem solving with object-oriented concepts and programming skills. Introductory C++ syntax and program structure will be discussed. Object-oriented coding style and concepts such as classes and abstraction, inheritance, and virtual functions will be covered.

Prerequisite: ECE 111

*3 credits*

**ECE 217: Data Structure and Algorithm**

This course involves an in-depth programming-based study of data structures, algorithms, and cooperating programming techniques used in real-time and embedded systems. Topics include static and dynamic structures, hashing, searching, signals, distributive and concurrent inter-process communication. Discussions will also cover compiler-linker, multi-core, and other trade-off that impact real-time systems performance.

Prerequisite: ECE 111

*3 credits*

**ECE 228: Circuits I**

This course introduces the basic passive components (R, L, and C) and their terminal voltage and current characteristics. Basic circuit concepts, such as Kirchhoff's laws, linearity/superposition/Thevenin & Norton equivalents, and the max power theorems are established. The analysis of DC and transient circuits including dependent and independent sources is considered along with the use of computer-aided design tools for solution and verification of problems. AC circuits are also studied.

Prerequisite: MATH 140 or permission of Chair.

*3 credits*

**ECE 229: Circuits I Laboratory**

This laboratory course is to be taken concurrently with ECE 228 (Circuits I). The laboratory provides hands-on experience with DC and AC circuits that includes the applications of Kirchhoff's laws, superposition, Thevenin and Norton equivalent circuits. Topics also include operational amplifier circuits and phasor diagrams. The use of contemporary computer-aided design in support of circuit analysis and design is an integral part of the laboratory.

Co-requisite: ECE 228

*1 credit*

**ECE 231: Introduction to Electrical Engineering**

This is a basic course that provides general introduction to circuit theory, electronic circuits and electric machines. This course cannot be taken for credit by Electrical and Computer Engineering students.

Prerequisite: PHYS 214 and MATH140

*3 credits*

**ECE 232: Introduction to Electrical Engineering Laboratory**

This laboratory course is to be taken concurrently with ECE231. The laboratory provides hands-on experience with DC and AC circuits that includes the applications of Kirchhoff's laws, superposition and Thevenin equivalent circuits. Topics also include operational amplifier circuits, phasor diagrams and electric machines.

Co-requisite: ECE 231

*1 credit*

**ECE 238: Electronics**

This course focuses on the system integration skills with design and analysis of electronic circuits at the component, sub-system, and system level. Electronic circuits and design processes are covered through the integration of sub-systems that comprise electronic circuits such as power supplies, voltage regulators, and drive circuits. At the component level, diodes, transistors, and operational amplifiers are also studied. The use of contemporary software and hardware tools for design and analysis of electronic circuits is an integral part of the course.

Prerequisite: ECE 228 & ECE 229

Co-requisite: ECE 239

*3 credits*

**ECE 239: Electronics Lab**

This lab is to accompany Electronics and taken concurrently with it. Lab topics complement closely classroom discussion of various designs.

Co-requisite: ECE 238

*1 credit*

**ECE 240: Circuits II**

This course introduces AC circuits and three-phase circuit analysis. Power concepts are introduced as pertaining to single and three-phase circuit applications. Frequency response characteristics of RLC circuits are studied, including the Fourier Series representation of a periodic signal. Frequency domain tools such as Laplace Transforms and Fourier Transforms are presented and employed in circuit analysis. Modern computer-aided design tools are used for solving homework assignments.

Prerequisite: ECE 228 and 229

*3 credits*

**ECE 241: Circuits II Lab**

This laboratory course is to be taken concurrently with Circuits II ECE 240. The laboratory provides hands-on experience with AC circuits that includes the transient analysis and frequency response applications of first- and second-order circuits. Topics also include Butterworth filter design for frequency response applications. The use of a contemporary computer-aided design tool in support of circuit design is an integral part of the laboratory.

Co-requisite: ECE 240

*1 credit*

**ECE 243: Test and Measurement**

This course introduces tools from the industry-approved National Instruments (NI) software and hardware products. The students will design and build virtual instruments (VIs) using the graphical programming language LabVIEW to acquire, analyze, and present data. They

will develop measurement techniques and understand the limitations of measurement and instrumentation. In addition, sensor and transducer characteristics and their applications will be presented. *3 credits*

**ECE 246: Microprocessors**

This course is designed to give students a basic background in hardware and software aspects of microprocessors. Contents of the course include: a microprocessor architecture, addressing modes, instruction set, assembly language, timers, I/O interrupt handling, mixed C/Assembly programming, finite state machine design, basic peripheral interfaces, UART, ADC and DAC. Microcontroller configuration. Schematic entry and basic PCB design.

Prerequisites: ECE 111, ECE 140, and ECE 141

Co-requisite: ECE 247

*2 credits*

**ECE 247: Microprocessors Lab**

This lab is designed to complement the microprocessors lecture course. Topics include software tool usage, microprocessor architecture, assembly language programming and basic peripheral interfaces.

Co-requisite: ECE 246

*1 credit*

**ECE 311: Embedded Kernel & RTOS**

This course covers basic understanding of embedded kernel and real-time operating system paradigms. Topics include process management, process synchronization, and memory management. Embedded kernel topics will be implemented on an embedded-system platform. RTOS topics will be implemented on commercial real-time operating systems.

Prerequisite: ECE 217

*3 credit*

**ECE 321: Electronics I**

This course focuses on the design and analysis of electronic circuits, devices, and processes at the system and sub-system level. Electronic circuits and processes are explained through the integration of sub-systems comprising electronic devices such as oscillators, voltage regulators, and switching circuits. From a cause-effect standpoint, the electronic devices such as diodes, transistors (BJT and FET), and operational amplifiers are studied. The use of contemporary software tools for electronic circuit/process design and analysis is an integral part of the course. For students admitted prior to fall 2016.

Prerequisite: ECE 228

Co-requisite: ECE 322

*3 credits*

**ECE 322: Electronics I Lab**

This lab is to accompany Electronics I and taken concurrently with it. Lab topics complement closely classroom discussion of various designs. For students admitted prior to fall 2016.

Co-requisite: ECE 321

*1 credit*

**ECE 324: Electric Machines**

This course introduces the fundamental principles of transformers, energy conversion and the operational principles of electric machines. Induction machines, Synchronous machines, and DC machines are discussed including their steady-state characteristics and operations.

Prerequisites: ECE 335

*3 credits*

**ECE 325: Electric Machines Laboratory**

Three hours per week to follow Electric Machines.

Prerequisite: ECE 324

*1 credit*

**ECE 326: Automatic Control**

An introduction to dynamic systems with emphasis on feedback control. Representation of control components in various engineering systems. Steady state and transient specification and stability characteristics to design interdisciplinary engineering systems.

Prerequisite: ECE 330

Co-requisite: ECE 329

*3 credits*

**ECE 327: Electric Drives**

This course uses an integrative to allow examination of all subsystems that make up an electric drive system. The approach requires minimum prerequisites in circuit and system and electromagnetic field theory to understand the essentials of the topics covered. The topics covered include electric machines, power-electronics-based converters, understanding mechanical system requirements, feedback controller design, and interaction of drives with the utility grid.

Prerequisite: ECE 240, ECE 335

3 credits

**ECE 328: Electric Drives Laboratory**

This lab is to follow Electric Drives to give hand-on experience of the subjects covered. It is three-hour per week laboratory

Prerequisite: ECE 327

1 credit

**ECE 329: Automatic Control Laboratory**

Three hours per week to accompany the course material of Automatic Control.

Co-requisite: ECE 326

1 credit

**ECE 330: Signals and Systems**

Signals and linear systems in continuous time and discrete time are studied. Both Time Domain solution methods and Frequency Domain solutions (Laplace Transform and Z Transform) are covered. Fourier Series, Fourier Transform and sampling theory are also studied.

Prerequisites: ECE 228 and MATH 141

3 credits

**ECE 333: Electronics II**

This course focuses on the study, operation, and analysis of electronic circuits, devices, and processes at the component-level. Topics include the "1-V" characteristics, the DC load line and operating point, the AC load line, large signal and small signal analysis of electronic circuits comprising diodes, transistors (BJT, FET), and operational amplifiers. The use of contemporary software tools to analyze the behavior of electronic components is an integral part of the course. For students admitted prior to Fall 2016.

Prerequisite: ECE 321

Co-requisite: ECE 334

2 credits

**ECE 334: Electronics II Laboratory**

This lab is to accompany Electronics II and taken concurrently with it. Lab topics complement closely classroom discussion of various designs. For students admitted prior to Fall 2016.

Co-requisite: ECE 333

1 credit

**ECE 335: Electromagnetic Fields**

This course emphasizes the fundamental principles of electric and magnetic fields with application to transmission lines, wave propagation. Brief introduction to vector analysis is given followed by a thorough introduction to Maxwell's equations. Waves in space and their interaction with media are discussed with analogies to wave behavior on transmission lines.

Prerequisites: MATH 242 and ECE 240

3 credits

**ECE 337: Computer Architecture**

This course is for understanding the interactions between computer hardware and software, Von-Neumann and Harvard architectures, hardware, software and system performance measurement, and instruction-set architecture (ISA). In particular, this course offers students the opportunity to understand and enrich their capability to interface between software (e.g., computer instructions and assembly language programming) and hardware (e.g., computer arithmetic, processor control and data manipulation, memory hierarchy and performance, and I/O subsystems) components. Advanced topics such as Multicore, Simultaneous Multithreading, and other contemporary architecture and parallelisms are also covered.

Prerequisite: either of CIS 182 or ECE 111, and either of ECE 140 or MATH 222

3 credits

**ECE 340: Micro-Controller Applications**

This course introduces the MIPS superscalar architecture (SSA) and implementation. This includes understanding the arithmetic (both scalar and floating point) performance, the data-path and control pipelines associated with the instruction fetch, decode, and register dataflow. This course will also explore the strategies for analyzing and optimize cache performance and will explore the performance tradeoffs of different input/output technologies. Finally we will look at different processor technologies including RISC, CISC, SSA, SMP, MMP, and SMT and the impact it will have on future compute platforms.

Prerequisite: ECE 140 & ECE 141 (or equivalent), and ECE 246 & ECE 247

*3 credits*

**ECE 345: Advanced Digital Design**

Advanced topics in top-down digital design and bottom-up verification are introduced. Combinatorial and sequential logic design, circuit aspects of logic devices, families, and interfaces are reviewed. Topics include the use of CAD tools for schematic- and hardware description language-based design entry for simulation, synthesis, post-synthesis analysis and implementation on a programmable target device. An integrated design and development environment will be used throughout the course.

Prerequisite: ECE 140

*2 credits*

Co-requisite: ECE 346

**ECE 346: Advanced Digital Design Laboratory**

Advanced topics in top-down digital design and bottom-up verification are introduced. Combinatorial and sequential logic design, circuit aspects of logic devices, families, and interfaces are reviewed. CAD tools using schematic and hardware description language based design entry for simulation, synthesis, post-synthesis analysis and implementation on a programmable target device are exposed. Mentor Graphics and Xilinx ISE integrated design and development environment will be used throughout the course.

Co-requisite: ECE 345

*1 credit*

**ECE 347: Embedded Systems Design**

This is a project oriented course. It is designed to deliver the concepts of microprocessor-based design flow and hardware/software design integration. Discussions include CPU architectures, instruction sets, interrupts, peripheral configurations, software development, real-time operating system, as well as hardware-in-the-loop debugging and testing.

Prerequisites: ECE 140 and ECE 246

*3 credits*

**ECE 348: Digital Design with HDL & Lab**

This is a hands-on course for virtual prototyping of digital system design and verification with hardware description language (HDL). Various scales and types of digital systems, including combinatorial and sequential logic circuits, FSM designs, and memory and bus systems, are reviewed. Hands-on HDL programming skills in advanced-level are exercised by performing representation, simulation, verification and synthesis of the digital systems with extensive lab practices and assignments. Xilinx ISE integrated design and development environment will be used throughout the course lab exercises.

Prerequisite: ECE 140 & ECE 141

*3 credits*

**ECE 349: Rapid Prototyping with FPGA**

Field Programmable Gate Arrays (FPGAs) has become an essential part of the digital system design flow for many applications. They provide inexpensive solutions for hardware prototypes and fastest time-to-market. The novelty and programmability also allow design explorations towards optimal architecture. This course will cover the FPGA features and architectures, rapid prototyping aspect of FPGA use, FPGA configuration techniques, hardware simulation and debugging, as well as the modern digital synthesis and hardware analysis skills and tools. Other commercial programmable logic devices (PLD) will also be discussed.

Prerequisites: ECE 348

*3 credits*

**ECE 351: Engineering Analysis**

Theory and application of linear algebra, numerical analysis, complex variables, probability and statistics for engineering problems. Application of Matlab.

Prerequisite: MATH 304

3 credits

**ECE 357: Senior Design**

Discussion of design fundamentals. Application of design principles to a design problem. Determination of a complete problem definition/ specification. Development of a conceptual design and a preliminary design with alternatives. Establish a schedule and tentative test plan. Discuss ethics and ethical standards and consider impact on engineering decisions (examples considered). Develop skills in effective communication. Present design at a formal design review to colleagues at terms end.

Prerequisite: Senior standing and permission of the chair.

3 credits

**ECE 358: Senior Design Laboratory and Seminar**

Prototype development based upon design specification of ECE 357. Test plan developed and implemented on the prototype. Alternative considerations, risk management and possible design changes following initial prototype results. Develop skills in effective communication. The outcome will include a complete design document and a final presentation. Student teams will present their final prototypes to a review committee including peers, faculty and/ or invited industrial guests.

Prerequisite: ECE 357

3 credits

**ECE 363: Power System Engineering I**

Models for elements of power system are studied. Per unit values and per unit system are discussed. Power flow studies are investigated. Gauss Seidel, Newton Raphson, and Decoupled lead flow are studied. Balanced faults are discussed.

Prerequisite: ECE 324

3 credits

**ECE 366: Power System Engineering II**

Symmetrical components are studied. Power System under fault conditions is analyzed using symmetrical components. Economic operations of power systems are studied. Problem of power systems stability is discussed. Analysis of two machine system is performed using equal area criterion. Multi-machine stability is discussed.

Prerequisite: ECE 363

3 credits

**ECE 380: Professional Seminar**

This course covers issues facing electrical, computer and software engineering professionals. It also reinforces students' capabilities in public speaking, small group collaboration, interpersonal communication, active listening, as well as competent reading skills. Topics include trends in the field, job prospects, political issues, team and workplace behavior, project leadership, as well as exercises in oral presentations, formal written reports, and effective two-way communication. This course is designed to deliver a capstone senior design project idea by the end of the semester.

Co-requisite: Junior Standing

1 credit

**ECE 381: Project Experience**

This course emulates internship learning environment and experience for students. Students work on a supervised project and in a team setting to learn workplace fundamentals, teamwork, and project management skills. Topics include teamwork assessment, management vs. leadership, critical thinking for design of experiments and project management techniques.

Prerequisite: Junior Standing or permission of chair

1 credit

**ECE 390-399: Special Topics in Electrical and Computer Engineering**

Special courses developed from student interest in all areas of electrical engineering. Brief description of current content to be announced in schedule of classes.

Prerequisite: Permission of the chair.

1-3 credits

**ECE 421: VLSI Design**

Focuses on the theory, design, implementation, and testing of Very Large Scale Integrated (VLSI) Circuits and associated technologies. Primarily focuses on CMOS technologies and their implementation. Includes a review of CMOS circuits & theory, overview of MOS fabrication technology, circuit characterizations and performance estimation, electrical & physical design of logic gates, clocking strategies, I/O structures, system design and test methods, design synthesis, and advanced topics.

Prerequisites: ECE 321

*3 credits*

**ECE 437: Advanced Computer Architecture**

Focuses on the design and implementation of the instruction-set architecture. Performance measures, ALU design, data and control path design, evolving into custom high performance processor design using VHDL, pipelining, memory hierarchy design, cache memory and advanced topics.

Prerequisites: ECE 337

*3 credits*

**ECE 438: Real-Time Application**

Real-time system is one that reacts to the dynamic external environment under certain timing constraints. Real-time systems are becoming increasingly prevailing since more and more applications require real-time computing. This course focuses on design and analysis of software for real-time systems. It is to provide students with a basic understanding of real-time applications. The topics covered in this course include: introduction to real-time systems, scheduling algorithms and timing analysis, real-time operating systems, system impacts to real-time performance and software architectures, as well as simulation and verification of real-time applications. Hands-on experiences will be gained by using contemporary software tools.

Prerequisite: ECE 311

*3 credits*

**ECE 440: Hardware/Software Co-design**

This course will present state-of-the-art concepts and techniques for hardware/software co-design of embedded systems. Topics include system level design methodologies of hardware/software co-design, system modeling and specification, architectures for embedded systems, hardware/software trade-off, performance evaluation, hardware/software co-synthesis and co-validation. The course follows the top-down design paradigm using predefined and user custom IP cores. Contemporary CAD software tools and hardware platforms including Xilinx Embedded Development Kit (EDK), Xilinx Integrated Software Environment (ISE), ModelSim, GUN compiler and debugger (GDB), as well as Spartan 3 Starter Board will be used throughout the course.

Prerequisite: ECE 345, ECE 347

*3 credits*

**ECE 449: VHDL Design**

This is an introductory course for the VHDL hardware description language targeting programmable logic and ASIC design. The usage of the language in representation, simulation, verification and synthesis areas is studied with extensive lab assignments. Essential syntax and semantics of the VHDL language including design entity, architectural bodies, concurrent and sequential statements, processes, data types, packages, configurations register transfer level design are among the covered topics.

Prerequisite: ECE 345

*3 credits*

**ECE 451: Optical Devices and Systems**

This course presents an introduction to electro optics. Topics include topics of wave propagation, interaction with both isotropic and anisotropic materials, modulation techniques, lenses and lens systems, optical sources and optical detectors. Optical systems, subsystems and applications are considered.

Prerequisites: ECE 333 and ECE 335

*3 credits*



**ECE 456: RF Circuit Integration**

Unifies concepts from circuits, electronics, communications and electromagnetic field theory. Applies concepts to subsystem radio frequency design: filtered amplifiers, oscillators, mixers, filters, power amps, transmission lines, and digital processing. Design of systems using discrete elements along with integrated elements is considered. RF on a chip technology is also considered in the lab for high technology communication system application.

Prerequisites: ECE 333, ECE 335

*3 credits*

**ECE 465: Power Electronics**

This course introduces the basic concepts of various topologies (AC-DC, DC-DC, DC-AC, AC-AC, etc) of power converters. The fundamental principles of switching components are discussed prior to the introduction of the design and application of converters. Emphasis is on the design issues associated with converters and the computer techniques used for the performance evaluation and analysis. Experiments are part of the course.

Prerequisites: ECE 333

*3 credits*

**ECE 466: Modeling and Analysis of Electric Drives**

This course introduces the issues on modeling and analysis of electrical drives. Basic concepts of electromechanical energy conversion will be presented prior to the detailed modeling of the dynamical aspects of both the DC and AC machines. Dynamic behavior of the machines and their computer simulation will be examined. Numerical schemes for simulation, singular perturbation technique, linearization technique, etc. are parts of the analysis tools. In addition, modeling of switching power conversion will be studied as it pertains to drive application. If time permits, some other practical aspects of drives will be examined, too.

Prerequisite: ECE 327

*3 credits*

**ECE 471: Control of Electrical Machines**

This course introduces the concept on the control of electric machines (DC and AC). Emphasis is placed on fundamentals, and conventional methods of speed control of electric machines. Control strategies using power semiconductors for DC motor drives, induction motor drives, synchronous motor drives, and brushless dc and ac motors are discussed.

Prerequisite: ECE 327

*3 credits*

**ECE 472: Digital Signal Processing**

This course emphasizes the fundamental principles of signals and systems, sampling theorem, discrete-time Fourier transform, power spectrum, z-transform, discrete Fourier transform (DFT) and the fast Fourier transform (FFT) algorithm, digital filter design and implementation. Matlab/Simulink will be used to evaluate implementations of digital signal processing algorithms.

Prerequisite: ECE 330

*3 credits*

**ECE 474: Artificial Neural Networks**

This course will present artificial neural network (ANN) architectures and computational algorithms suited for practical engineering applications. Topics will include an overview of artificial neural networks and neural computing, elementary ANN building blocks and models. Concepts of learning and training rules, the back-propagation algorithm as well as examples and discussion of several classes of ANN such as feed-forward networks, multilayer networks, recurrent networks, and self-organizing networks will be presented.

Implementations will be evaluated in Matlab/Simulink.

Prerequisite: ECE 351

*3 credits*

**ECE 475: Advanced Instrumentation and Measurement**

This course emphasizes the use of National Instruments (NI) tools to perform data acquisition, measurement techniques and instrument control. Data acquisition will include analog and digital I/O, signal conditioning and sensors. Measurement techniques will include time-frequency analysis, data filtering, and distortion measurements. Instrument control will include serial port, GPIB communications and instrument drivers.

*3 credits*

**ECE 483: Intro to Communication Systems**

This course emphasizes Fourier Series / Transform and FFT, frequency shifting concepts ideally and in reality. Analog modulation techniques and technology including digital enhancement techniques (amplitude, sideband and frequency modulation), sampling theory and digital modulation (PAM, PWM, PPM, PCM) are considered. Noise aspects considered in determining best SNR technique. Both time and frequency multiplexing and practical examples are included.

Prerequisite: ECE 330

*3 credits*

**ECE 484: Wireless System Applications**

This course will cover topics in wireless and mobile communications and their application to the design of systems and networks. These topics will include cellular concepts, beam formation, path loss, fading, and multi-path in radio propagation, digital modulation formats, equalization, diversity, coding, and multiple access techniques. Wireless local area networks (WLAN), global system for mobile (GSM), and wideband CDMA (W-CDMA) will be discussed.

Prerequisites: ECE 330 and ECE 335

*3 credits*

**ECE 485: Advanced Programming In C/C++**

Problem analysis. Translation path from pseudo-code to implementation. Comparison of C and C++ implementations. Critical evaluation of time, memory, and program structure. Programming style.

Prerequisite: ECE 111

*3 credits*

**ECE 486: Object-Oriented Modeling**

An advanced treatment of methods for producing an object-oriented design, including structural, behavioral, and architectural design. Focus is on Object-Oriented analysis and design methods and design processes they support. Includes treatment of the Unified Modeling Language (UML) techniques and their application to systems/software development.

Prerequisite: ECE 216

*3 credits*

**ECE 488: Modern Control Theory**

Linear spaces and operators, mathematical descriptions of systems. Linear dynamical systems and impulse response, matrices. Controllability and observability of linear dynamical systems. Irreducible realizations of rational transfer function matrices. Canonical forms, state feedback and state estimators. Stability of linear systems. Composite systems; linear optimal control and linear distributed systems

Prerequisite: ECE 326

*3 credits*

**ECE 489: Digital Control**

This course deals with the control of dynamic systems by employing classical and modern control tools incorporating a digital computer in the control loop. It builds upon the foundational concepts of continuous-time control, and provides the background needed for practicing engineers to enhance their knowledge in the area of digital control system. Topics of discussion are state-space and transfer function representations, Z-transform, digital control system design, filter design, state-space approach to control system design, linearization, stability, system identification, and adaptive control.

Prerequisite: ECE 326

*3 credits*

**ECE 490-499: Advanced Topics in Electrical and Computer Engineering**

Advanced courses developed from student interest in all areas of electrical engineering. Brief description of current content to be announced in schedule of classes.

Prerequisite: Permission of the chair.

*1-3 credits*

**SECS (101, 102, 201, 202, 301, 302, 401, 402): Professional and Personal Enrichment Seminar**

Course description is listed in Computer & Information Science section of the catalog.

*0 credit, Fall and Spring*

**Electrical and Electronics Option of ECE Curriculum***(Numerals in front of courses indicate credits)*

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Critical Analysis & Comp/LENG 112
3	Sacred Scripture/LTHE 121	3	Intro to C Programming/ECE 111
3	Calculus I/MATH 140	3	Calculus II/MATH 141
3	History Without Borders/LHST 111	3	Digital Logic Design/ECE 140
1	Eng Tools Applications/ECE105	1	Digital Logic Design Lab/ECE 141
1	Eng Tools Applications Lab/ECE106	3	Circuits I/ECE 228
2	First-Year Seminar/ENG 100	1	Circuits I Lab/ECE 229
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Introduction to Philosophy/LPHI 131	3	Signals and Systems/ECE 330
3	Calculus III/MATH 242	3	Electronics/ECE 238
3	Test & Measurement/ECE243	1	Electronics Lab/ECE 239
3	Circuits II/ECE 240	3	Theology II Series/LTHE
1	Circuits II Lab/ECE 241	3	Physics 1: Mechanics/PHYS 210
2	Microprocessors/ECE 246	3	Calculus IV/MATH 243
1	Microprocessors Lab/ECE 247	1	Physics 1 Lab/PHYS 211
16		17	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Differential Equations/MATH 304	3	Philosophy II Series/LPHI
3	Electromagnetic Fields/ECE 335	3	Electric Drives/ECE 327
3	Automatic Control/ECE 326	1	Professional Seminar/ECE 380
1	Automatic Control Lab/ECE 329	3	Technical Elective 1 ++
1	Project Experience/ECE 381	3	Engineering Analysis/ECE 351
3	Power Electronics/ECE 465	3	Physics 2/PHYS 212
3	Theology/Phil III Series/LTHE or LPHI		
1	Leadership Seminar		
18		16	
SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Senior Design I/ECE 357	3	Senior Design II/ECE 358
3	Chemistry/CHEM 111	3	Intro to Thermal Science/ME 212
1	Chemistry Lab/CHEM 112	3	LS Senior Seminar/LBST 383
1	Electric Drives Lab/ECE 328	3	Fine Arts Series/LFIN
3	Literature Series/LENG	3	Technical Elective 2++
3	Social Science		
14		15	

**Bioelectrical Engineering Option of ECE Curriculum**

(Numerals in front of courses indicate credits)

<b>FRESHMAN</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Critical Analysis & Comp/LENG 112
3	Sacred Scripture/LTHE 121	3	Intro to C Programming/ECE 111
3	Calculus I/MATH 140	3	Calculus II/MATH 141
3	History without borders/LHST 111	3	Digital Logic Design/ECE 140
1	Eng Tools Applications/ECE 105	1	Digital Logic Design Lab/ECE 141
1	Eng Tools Applications Lab/ECE 106	3	Circuits I/ECE 228
2	First-Year Seminar/ENG 100	1	Circuits I Lab/ECE 229
16		17	
<b>SOPHOMORE</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Introduction to Philosophy/LPHI 131	3	Signals and Systems/ECE 330
3	Calculus III/MATH 242	3	Electronics/ECE 238
3	Test & Measurement/ECE 243	1	Electronics Lab/ECE 239
3	Circuits II/ECE 240	3	Theology II/LTHE
1	Circuits II Lab/ECE 241	4	Physics 1/PHYS 210 & PHYS 211
2	Microprocessors/ECE 246	4	Human Anat. & Phys. & Lab I/ BIOL 115 & BIOL 116
1	Microprocessors Lab/ECE 247		
16		18	
<b>JUNIOR</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Differential Equations/MATH 304	3	Philosophy II Series/LPHI
1	Automatic control lab/ECE 329	4	Human Anat. & Phys. II & Lab/ BIOL 117, 118
3	Electromagnetic Fields/ECE 335	1	Professional Seminar/ECE 380
3	Automatic Control/ECE 326	3	Technical Elective 1++
3	Theology/Phil III Series/LTHE or LPHI	3	Engineering Analysis/ECE 351
1	Leadership Seminar1 Project Experience/ECE 381	3	Physics 2/PHYS 212
15		17	
<b>SENIOR</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Senior Design I/ECE 357	3	Senior Design II/ECE 358
3	Chemistry/CHEM 111	3	Intro to Thermal Science/ME 212
1	Chemistry Lab/CHEM 112	3	Fine Arts Series/LFIN
3	Social Science	3	LBST 383 senior capstone
3	Technical/Science Elective	3	Technical Elective 2++
3	Literature Series/LENG		
16		15	

**Computer Engineering Option of ECE Curriculum***(Numerals in front of courses indicate credits)*

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Critical Analysis & Comp/LENG 112
3	Sacred Scripture/LTHE 121	3	Intro to C Programming/ECE111
3	Calculus I/MATH 140	3	Calculus II/MATH 141
3	History Without Borders/LHST 111	3	Digital Logic Design/ECE 140
1	Eng Tools Applications/ECE105	1	Digital Logic Design Lab/ECE 141
1	Eng Tools Applications Lab/ECE106	3	Circuits I/ECE 228
2	First-Year Seminar/ENG 100	1	Circuits I Lab/ECE 229
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Discrete Math 1/MATH 222	3	Theology II Series/LTHE
2	Microprocessors/ ECE 246	3	Signals & Systems/ECE 330
1	Microprocessors Lab/ECE 247	3	Electronics/ECE 238
3	Calculus III/MATH 242	1	Electronics Lab/ECE 239
3	Data Structure & Algorithms/ECE 217	3	Physics 1: Mechanics/PHYS 210
3	Introduction to Philosophy/LPHI 131	1	Physics 1 Lab/PHYS 211
3	Test and Measurement/ECE 243	3	Computer Architecture/ECE 337
18		17	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Theo/Phil III Series/LTHE or LPHI	3	Philosophy II Series/LPHI
3	Embedded Kernel & RTOS/ECE 311	3	Engineering Analysis/ECE 351
3	Automatic Control/ECE 326	3	Physics 2/PHYS 212
3	Digital Design with HDL & Lab/ECE 348	3	Micro-Controller Appl./ECE 340
3	Differential Equations/MATH 304	1	Professional Seminar/ECE 380
1	Project Experience/ECE 381	3	Rapid Prototyping w FPGA/ ECE 349
1	Automatic Control Lab/ECE 329		
1	Leadership Seminar		
18		16	
SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Senior Design I/ECE 357	3	Senior Design II/ECE 358
3	Technical Elective 1++	3	Technical Elective 2++
3	Social Science	3	LS Senior Seminar/LBST 383
3	Literature Series/LENG	3	Fine Arts Series/LFIN
3	Chemistry I/CHEM 111		
1	Chemistry I Lab/CHEM 112		
16		12	

Technical electives are specialized courses intended to allow students to focus the breadth or depth of their degree program. Students should plan for these courses well in advance (at least a year) to ensure that the course(s) they are interested in will be offered in the sequence in which they can enroll. Students should plan their course sequence in order to have the appropriate pre-requisites. *In all cases, students should select these courses in consultation with their academic advisor.*

Students in all ECE degree options are required to take two technical electives. The following table indicates which courses are pre-approved technical electives for which degree option. A “\*” indicates that the course is approved as a technical elective.

<i>Elective Courses:</i>	<i>Electrical &amp; Electronics</i>	<i>Bioelectrical Engineering</i>	<i>Computer Engineering</i>
ECE 240/1: Circuits II & Lab			*
ECE 324: Electric Machines			
ECE 335: Electromagnetic Fields			*
ECE 337: Computer Architecture	*	*	
ECE 340: Micro-Controller Applications	*	*	
ECE 345/6: Advanced Digital Design & Lab	*	*	
ECE 347: Embedded Systems Design	*	*	
ECE 348: Digital Design with HDL & Lab	*	*	
ECE 363: Power System Engineering I	*	*	
ECE 366: Power System Engineering II	*	*	
ECE 390-399: Special Topics in Electrical Engineering	*	*	*
ECE 421: VLSI Design	*	*	*
ECE 437: Advanced Computer Architecture	*	*	*
ECE 449: VHDL Design	*	*	*
ECE 451: Optical Devices and Systems	*	*	
ECE 456: R F Circuit Integration	*	*	
ECE 466: Modeling & Analysis of Electric Drives	*	*	
ECE 471: Control of Electrical Machines	*	*	
ECE 472: Digital Signal Processing	*	*	*
ECE 474: Artificial Neural Networks	*	*	*
ECE 483: Communication Theory	*	*	
ECE 485: Advanced Programming in C/C++	*	*	*
ECE 486: Object-oriented Modeling	*	*	*
ECE 488: Modern Control Theory	*	*	*
ECE 489: Digital Control	*	*	*
Other ECE3xx or ECE4xx course, with advisor approval	*	*	*
CIS 3xx or CIS4xx Course, with advisor approval	*	*	*
CIS 286 Adv. Object-Oriented Techniques			*
CIS 315 Software Engineering			*

#### **(Additional Electives for Bioelectrical Engineering Option)**

BIOL 122 & BIOL 123	Molecular and Cellular Biology & Lab
CHEM 114 & CHEM 115	General Chemistry II & Lab
CHEM 121	Introduction to Nanotechnology
BME 460	Biosignal Processing
BME 479	Biomedical Robotics and Biomimetics
BME 480	Haptics

#### **Five Year Program - Electrical Engineering/MBA**

The School of Engineering and Computer Science in cooperation with the Dahlkemper School of Business offers a special program for qualified undergraduates leading to a Bachelor of Science in Electrical Engineering Degree and a Master of Business Administration Degree. The program may be completed in five years of full time study (includes three summers).

The first three years of the 5 year Electrical Engineering/MBA option is identical to the Electrical Engineering course of study.

#### **SUMMER**

- 3 Management Concepts
- 3 Statistical Analysis
- 3 Financial Accounting

The Senior year is identical to other Electrical Engineering options.

### Waive

GA 500 Computer Workshop

GA 521 Quantitative Techniques

GA 561 Fundamentals of Financial Management

### FIFTH YEAR

<i>Summer</i>	MBA Courses	<i>Fall</i>	MBA Courses
<i>Spring</i>	MBA Courses	<i>Summer</i>	MBA Courses

### Electrical Engineering Co-Op Curriculum

#### Plan A

Year 1	Fall 1	Spring 1	Summer Vacation
Year 2	Fall 2	Spring 2	4 month WP*
Year 3	Fall 3	4 month WP	Summer**
Year 4	4 month WP	Spring 3	4 month WP
Year 5	Fall 4	Spring 4	

#### Plan B

Year 1	Fall 1	Spring 1	Summer Vacation
Year 2	Fall 2	4 month WP	Summer**
Year 3	4 month WP	Spring 2	4 month WP
Year 4	Fall 3	Spring 3	4 month WP
Year 5	Fall 4	Spring 4	

#### Plan C

Year 1	Fall 1	Spring 1	Summer Vacation
Year 2	Fall 2	Spring 2	4 month WP
Year 3	Fall 3	Spring 3	4 month WP
Year 4	Fall 4	4 month WP	Summer**
Year 5	4 month WP	Spring 4	

\* *Work Period*

\*\* *Liberal Studies Core Courses*

### Notes:

- (1) Fall and Spring follow the regular engineering schedule.
- (2) For maximum financial aid, 12 credits of Liberal Studies Core Courses should be taken during the 4 month summer session listed.
- (3) One credit Co-Op seminar (ME 296, ECE 296) is to be taken during the Spring Semester of freshman year.
- (4) Students should register for zero credit Co-Op Placement (ENG 399) for each work period.

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## DEPARTMENT OF ENVIRONMENTAL SCIENCE & ENGINEERING

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MICHELLE HOMAN, Ph.D., *Chair, Department of Environmental Science & Engineering*

FACULTY: *Assistant Professor:* Hwidong Kim, Ph.D. *Professor Emeritus:* Harry R. Diz, Ph.D., P.E.

The department offers majors in **Environmental Science** and **Environmental Engineering**, and a minor in **Environmental Science**. There is also a **5 year Combined B.S./M.S. degree program in Environmental Science** (see below).

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## ENVIRONMENTAL SCIENCE

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The **Bachelor of Science in Environmental Science** degree is a rigorous interdisciplinary curriculum that builds competence in basic science, environmental technologies, computation skills, and communication skills. The program is designed for students with strong analytical abilities with a curriculum that includes courses in environmental science as well as biology, chemistry, physics, earth science, and mathematics. Computer applications are used in many courses, including at the higher levels, the use of software designed or sponsored by the USEPA. A high level of competence in the use of word processing, presentation software, and spreadsheets will be required. The Environmental Science B.S. degree allows students to select electives in biology, chemistry, or environmental earth science.

The department believes that one becomes a scientist by "doing science", not just reading about it. Therefore, the curriculum provides for a year-long research project during the senior year, organized within the two-semester sequence "Senior Thesis I and II". This sequence guides the student in becoming familiar with the scientific method and reading scientific literature. Each student works with a faculty mentor on an individual basis during the senior year to design and conduct a scientific study, culminating in the writing of a Senior Thesis based on the student's work.

A minor in Environmental Science is also available.

### Educational Objectives

The following program educational objectives have been established for the Bachelor of Science in Environmental Science program. These objectives are consistent with the University Mission, and are based on input from the college faculty, students, industry, and alumni.

- A. Provide students with a set of knowledge and skills that allow them to effectively begin careers as environmental scientists in consulting, industry, or government;
- B. Prepare students for graduate study in environmental science or a related field;
- C. Provide students with a broad general education that fosters an understanding of the natural world, the impact of human activity on the environmental quality of that world, and encourages the pursuit of lifelong learning;
- D. Support students in their professional and postgraduate educational development by offering faculty advice and departmental support, including support for student societies and professional groups.

### Student Outcomes

In addition to the outcomes related to the university's liberal studies program, graduates of the Environmental Science program should demonstrate:

1. Proficiency in mathematics through elementary calculus and statistics;
2. Proficiency in the fundamental natural sciences including physics, ecology and microbiology, organic chemistry, and earth science including geology and hydrology;
3. Knowledge of global environmental concerns, air pollution, water pollution, soil contamination, and the effect of pollutants on human health;
4. Ability to design and conduct experiments, to collect and analyze data, and to write a scientific paper suitable for publication;
5. Understanding of environmental regulations and the ethical responsibility of scientists in their professional conduct as well as in their private lives;
6. Ability to communicate effectively both in writing and verbally, and function as a member and a leader on multi-disciplinary teams;
7. A recognition of the need for, and an ability to engage in, life-long learning.



**Course Requirements for the B. S. in Environmental Science degree (minimum 128 credits)**

<b>LIBERAL STUDIES CORE</b>	<b>42</b>	<b>PHYSICS</b>	<b>8</b>
LENG 111 College Composition	3	PHYS 105 College Physics I	3
LENG 112 Critical Analysis & Comp.	3	PHYS 106 College Physics I Lab	1
LENG Literature	3	PHYS 108 College Physics II	3
LPHI Foundation Philosophy Course	3	PHYS 109 College Physics II Lab	1
LPHI Philosophy II	3		
LTHE Foundation Theology Course	3	<b>ENVIRONMENTAL SCIENCE</b>	<b>34-35</b>
LTHE Theology II	3	ENV 101 Physical Geology	3
LPHIL III Ethics/Moral Responsibility	3	ENV 102 Physical Geology Lab	1
LFIN Fine Arts	3	ENV 120 Intro to Environmental Science	3
LHST Foundation History course	3	ENV 121 Intro to Env Science II	3
Social Science Course	3	ENV 312 Environmental Hydrology	3
SPCH 111 Public Speaking	3	ENV 313 Environmental Hydrology lab	1
First-Year Seminar	2	ENV 336 Water Quality	3
Leadership Seminar	1	ENV 337 Water Quality Lab	1
LBST 383	3	ENV 400 Env Toxicology	3
		ENV 401 Env Health lab	1
<b>BIOLOGY</b>	<b>16</b>	ENV 403 Environmental Engineering	3
BIOL 122 Molecular & Cellular Biology	3	ENV 410 Geographic Information Systems	3
BIOL 123 Molecular & Cellular Bio. Lab	1	ENV 444 Environmental Law & Regs	3
BIOL 124 Animal Form and Function	3	ENV 496 Environmental Senior Thesis I	1
BIOL 125 Animal Form and Function Lab	1	ENV 497 Environmental Senior Thesis II	4
BIOL 126 Ecosystem Biology & Evolution	3		
BIOL 127 Ecosystem Bio & Evol Lab	1	<b>APPROVED ELECTIVES (minimum)</b>	<b>10</b>
One of the following LEC/LAB		ENV 306 Oceanography	3
BIOL 106/107	4	ENV 307 Soil Science	3
BIOL 331/332	4	ENV 383 Environmental Research	1
ENV 474/478	4	ENV 420 Environmental Site Assess	2
		ENV 422 Wetlands Science & Engineering	2
<b>CHEMISTRY</b>	<b>8</b>	ENV 440 Industrial Health I	3
CHEM 111 General Chemistry I	3	ENV 498 Environmental Internship	variable 1-3
CHEM 112 General Chemistry I Lab	1		
CHEM 114 General Chemistry II	3	Any ENV courses 200 or above	
CHEM 115 General Chemistry II Lab	1	Any 200-400 BIOL courses	
		Any 200-400 CHEM courses EXCEPT	
<b>MATHEMATICS</b>	<b>9</b>	courses for non-majors	
MATH 213 Applied Statistics	3		
Plus ANY TWO OF THE FOLLOWING:			
MATH 111 College Algebra, MATH 112			
Trigonometry or MATH 135 Precalculus	3		
MATH 140 Calculus I	3		
MATH 141 Calculus II	3		

**Typical 4 year program in Environmental Science***(Numerals in front of courses represent credits)**First Semester*

- |   |  |
|---|--|
| 3 | Intro to Environmental Science I/<br>ENV 120 |
| 4 | General Chemistry I w/lab/<br>CHEM 111, 112  |
| 3 | MATH   |
| 3 | College Composition/LENG 111                 |
| 2 | First-Year Seminar/ENG 100 or other          |

15

*Second Semester*

- |   |   |
|---|---|
| 3 | Intro to Environmental Science II/<br>ENV 121 |
| 4 | General Chemistry II w/lab/<br>CHEM 114, 115  |
| 3 | MATH  |
| 3 | Critical Analysis & Comp/LENG 112             |
| 3 | Intro to Philosophy/LPHI 131                  |

16

<i>Third Semester</i>		<i>Fourth Semester</i>	
4	College Physics I w/lab/PHYS 105, 106	4	College Physics II w/lab/ PHYS 108,109
4	Molecular/Cell Biology w/lab/ BIOL 122,123	4	Animal Form & Function w/lab/ BIOL 124,125
3	Sacred Scriptures/LTHE 121	4	Physical Geology w lab/ ENV 101/102
3	Philosophy II Series/LPHI	3	Theo or Phil III Series/LTHE or LPHI
3	History Without Borders/LHST 111	1	Leadership Seminar
17		16	
<i>Fifth Semester</i>		<i>Sixth Semester</i>	
3	Environmental Toxicology/ENV 400	3	Environmental Eng./ENV 403
1	Environmental Hlth Lab/ENV401	4	Water Quality w/lab/ENV 336, 337
4	Environmental Hydrology w lab/ ENV 312,313	4	Microbiology/Lab
4	Ecosystem Biology & Evolution w/lab/BIOL 126,127	3	Theology II Series/LTHE
3	Public Speaking/SPCH 111	3	Fine Art Series/LFIN
15		17	
<i>Seventh Semester</i>		<i>Eighth Semester</i>	
1	Senior Thesis I/ENV 496	4	Senior Thesis II/ENV 497
3	Approved Elective	3	Geographic Information Systems/ ENV 410
3	Applied Statistics/MATH 213	3	Liberal studies/Social sciences
3	Literature Series/LENG	4	Approved Elective with Lab
3	Approved Elective with lab	3	Env. Law & Regs/ENV 444
3	Senior Seminar/LBST 383	17	
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### Combined 5-Year B.S./M.S. Program in Environmental Science

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Only students who have demonstrated unusual maturity and scientific aptitude will be accepted into the Combined 5-Year B.S./M.S. Program. It is necessary for the student to take up to 18 credits each semester as an undergraduate. It is necessary to plan early and apply before the beginning of the junior year to participate in the combined B.S./M.S. Program. In addition to the B.S. requirements, and depending on the area of concentration, the student should plan to complete specific first year graduate courses during the senior year (see below). No more than 12 graduate credits are allowed prior to the completion of the B.S. degree. Graduate level courses taken when not previously approved for the Combined Program will count only toward the B.S. degree. It will be necessary to spend the summer after the senior year and/or after the first year of graduate school in course work, an internship, or in a research project.

#### Recommended Graduate Courses during the Senior Year:

GENV 500 Environmental Research Methods (3)  
 GENV 520 Environmental Site Assessment or GENV 522 Wetlands Science & Engineering (2)  
 GENV 536/537 Env Chemistry and lab (4)  
 GENV 540 Industrial Health I (3)  
 GENV 544 Env Law & Regulations (3)

Total Course Requirements for the 5 yr Combined B.S./M.S. Program includes 164 credits (128 credits undergraduate plus 36 credits graduate). Consult the Graduate Catalog for additional information about other requirements of the graduate program.

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## ENVIRONMENTAL ENGINEERING

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The **Bachelor of Science in Environmental Engineering** program at Gannon University is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. It is a demanding curriculum which combines mathematics, the basic sciences, and engineering principles. Students in the program develop strong analytical skills and a broad understanding of environmental problems. Environmental engineers are qualified to fill jobs designated for environmental scientists, and are also eligible for professional positions not open to those trained as scientists. Engineers often command higher salaries than non-engineers. Graduates will find careers in the public and private sectors: with government agencies, environmental consulting firms, and with private industry.

The Environmental Engineering program at Gannon offers small classes and individual attention from the faculty. Each environmental engineering student will work with a faculty mentor on a senior design project to bring together the theoretical and practical aspects of engineering design to solve an environmental problem.

### Program Educational Objectives and Student Outcomes

In accordance with the requirements of the Engineering Accreditation Commission of ABET, by three to five years after graduation, graduates of the environmental engineering program will:

1. Graduates will have careers in industry, consulting or government where they successfully apply their knowledge and skills to Environmental Engineering Practice.
2. Continue their professional development through graduate work, workshops and seminars, and/or pursuit of a professional license.
3. Demonstrate leadership and communication skills through project management, report preparation, and professional presentations.
4. Graduates will conduct themselves in accordance with professional ethical standards.

To accomplish the Program Educational Objectives and to satisfy the ABET specific requirements for the environmental engineering degree, the program has set forth the following Student Outcomes, along with an assessment process to provide feedback for continuous improvement in the program. Graduates of the Environmental Engineering program must attain:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data (particularly in the areas of water quality and environmental health).
- (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) an ability to function on multidisciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (i) a recognition of the need for, and an ability to engage in life-long learning

- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The environmental engineering curriculum is designed to provide environmental engineering graduates with a comprehensive engineering education. Students must demonstrate that they have attained an introductory level knowledge of environmental issues associated with air, land, and water systems and associated environmental health impacts; an understanding of concepts of professional practice and the roles and responsibilities of public institutions and private organizations pertaining to environmental engineering, and a proficiency in advanced principles and practice relevant to water quality and environmental health.

**Course Requirements for the B. S. in Environmental Engineering degree (minimum 132 credits)**

<b>LIBERAL STUDIES CORE</b>	<b>40</b>	<b>GENERAL ENGINEERING</b>	<b>13</b>
LENG 111 College Composition	3	ENG 100 First-Year Seminar	2
LENG 112 Crit Analysis & Comp.	3	ME 201 Statics	3
LENG Literature	3	ME 204 Dynamics	3
LTHE Foundation Theology	3	ME 205 Digital Computer Usage	1
LPHI Foundation Philosophy	3	ME 206 Digital Computer Usage Lab	1
LPHI Philosophy II	3	ME 312 Engineering Thermodynamics	3
LTHE Theology II	3		
LPHI III Ethics/Moral Resp	3	<b>ENVIRONMENTAL ENGINEERING</b>	
LFIN Fine Arts	3	<b>SCIENCES</b>	<b>40</b>
LHST Foundation History	3	ENV 120 or 121 Environmental Science I or II	3
SPCH 111 Public Speaking	3	ENV 312 Environmental Hydrology	3
ECON 285 Project Economics	3	ENV 313 Environmental Hydrology Lab	1
Leadership Seminar	1	ENV 336 Water Quality	3
LBST 383 Senior Seminar	3	ENV 337 Water Quality Lab	1
		ENV 400 Environmental Toxicology	3
<b>MATH &amp; BASIC SCIENCES</b>	<b>36</b>	ENV 401 Environmental Health Lab	1
MATH 140 Calculus I	3	ENV 403 Environmental Engineering	3
MATH 141 Calculus II	3	ENV 440 Industrial Health I	3
MATH 242 Calculus III	3	ENV 444 Environmental Law & Regulations	3
MATH 304 Differential Equations	3	ENV 451 Water/Wastewater Engineering	3
MATH 312 Probability & Statistics		ENV 453 Water/Wastewater Lab	1
OR MATH 213 Applied Statistics	3	ENV 465 Soil & Groundwater Pollution	3
PHYS 211 Fund Physics 1	3	ENV 486 Fluid Mechanics and Water	
PHYS 212 Fund Physics 2	3	Systems Design	3
ENV 474/478 Environmental Microbiology		ENV 487 Fluid Mechanics and Water	
& lab OR		Systems Design Lab	1
BIOL 106/107 Intro to Microbiology & lab	4	ENV Senior Design I	2
CHEM 111 General Chemistry I	3	ENV Senior Design II	3
CHEM 112 Gen Chemistry I Lab	1		
CHEM 114 General Chemistry II	3	<b>Approved Environmental Engineering</b>	
CHEM 115 Gen Chemistry II Lab	1	<b>Electives:</b>	<b>3</b>
ENV 101 Physical Geology OR		ENV 102 Physical Geology Lab	1
ENV 210 Env Geology	3	ENV 307 Soil Science	3
		ENV 410 Geographic Info Systems	3
		ENV 420 Environmental Site Assessment	2
		ENV 422 Wetlands Science & Engineering	2
		ENV 435 Water Quality Modeling	4
		ENV 441 Industrial Health II	3
		ENV 446 Ind Hygiene Sampling Techn	2

ENV 455 Air Pollution Control	3
ENV 477 Indus/Hazardous Waste Treatment	3
ENV 498 Environmental Internship	1-3

### Typical 4 year program in Environmental Engineering

(Numerals in front of course represent credits)

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Crit Analysis & Comp/LENG 112
3	Calculus I/MATH 140	3	Calculus II/MATH 141
3	Gen Chemistry I/CHEM 111	3	Fund Physics 1/PHYS 211
1	Gen Chemistry I Lab/CHEM 112	3	General Chemistry II/CHEM 114
2	First-Year Seminar/ENG 100	1	General Chemistry II Lab/CHEM 115
3	Environmental Science I/ENV 120	3	Inv to Philosophy/LPHI 131
2	Dig Computer & Lab/ME 205, 206	3	
17		16	
SOPHOMORE			
<i>Third Semester</i>		<i>Fourth Semester</i>	
3	Fund Physics 2/PHYS 212	3	Differential Equations I/MATH 304
3	Statics/ME 201	3	Dynamics/ME 204
3	Calculus III/MATH 242	3	History Without Borders/LHST 111
3	Philosophy II series/LPHI	3	Physical Geology/ENV 101 OR ENV 210 Env. Geology (if taking ENV 101)
3	Project Economics/ECON 285	1	Physical Geology Lab/ENV 102
3	Public Speaking/SPCH 111	3	Theology or Philosophy III/LTHE or LPHI
		1	Leadership Seminar
18		16-17	
JUNIOR			
<i>Fifth Semester</i>		<i>Sixth Semester</i>	
4	Environmental Toxicology & Lab/ENV 400, 401	3	Environmental Engineering/ENV 403
3	Probability & Statistics/MATH 312 OR Applied Statistics/MATH 213	3	Water Quality/ENV 336
4	Environmental Hydrology & lab/ENV 312, 313	1	Water Quality Lab/ENV 337
3	Sacred Scriptures/LTHE 121	3	Fine Arts Series/LFIN
3	Literature Series/LENG	3	Thermodynamics/ME 312
		3	Intro Microbiology/BIOL 106 OR Env. Micro/ENV 474
17		1	Intro Microbiology Lab/BIOL 107 OR Env Micro Lab/ENV 478
		17	
SENIOR			
<i>Seventh Semester</i>		<i>Eighth Semester</i>	
2	Senior Design I/ENV	3	Senior Design II/ENV
3	Water & Wastewater Engineering/ENV 451	3	Industrial Health I/ENV 440
1	Water & Wastewater Lab/ENV 453	3	Soil & Groundwater Pollution/ENV 465
3	Fluid Mechanics & Water Systems/ENV 486	3	Environmental Law & Reg/ENV 444
		3	Technical Elective/ENV

1	Fluid Mechanics & Water Systems
	Lab/ENV 487
3	Senior Seminar/LBST 383
3	Theology II Series/LTHE

16

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## ENVIRONMENTAL SCIENCE MINOR

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The Environmental Science minor is intended for students in science and engineering disciplines that wish to pursue a career with an environmental emphasis. The program is administered by the Department of Environmental Science and Engineering and coursework is intended to provide students with a broad framework that focuses on the relationship between human activities and environmental impacts. Students have nine credits of elective courses (ENV courses) to choose from that align with their career interests.

All students completing the appropriate prerequisite courses (CHEM 112-114) are eligible for the minor program with the exception of environmental science and environmental engineering students. Minor declaration forms are available from the environmental science and engineering department and should be submitted to the registrar's office.

REQUIRED COURSES		(14)
___	ENV 120 Introduction to Environmental Science I	(3)
___	ENV 121 Introduction to Environmental Science II	(3)
___	ENV 336 Water Quality	(3)
___	ENV 337 Water Quality Lab	(1)
___	ENV 400 Environmental Toxicology	(3)
___	ENV 401 Environmental Health Lab	(1)

**Environmental Science Electives** **min (9)**

9 credits or more from any ENV courses

*Minimum Total Credits: 23*

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## COURSE DESCRIPTIONS:

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### ENG 100: First-Year Seminar in Engineering

Course description is listed in the Electrical and Computer Engineering section of the catalog.  
*2 credits, Fall*

### ENV 101: Physical Geology

This course will focus on the forces at work on the earth's surface, the development of landscapes, and the nature of rocks and minerals. Topics such as plate tectonics, weathering, running water, ground water, glaciers, the oceans, volcanism, and earthquakes will also be covered.

Corequisite: ENV 102.

*3 credits, Spring*

### ENV 102: Physical Geology Lab

The lab will include studies of topographic and geologic maps. Rocks and mineral specimens will be studied with emphasis on the characteristics that reveal the origins of igneous, sedimentary, and metamorphic rocks.

Corequisite: ENV101.

*1 credit, Spring*

### ENV 104: Historical Geology

The history of the earth, including the development of life. The changing nature of the surface of the earth and the living forms inhabiting it are studied with emphasis on stratigraphy, plate theory, and the fossil record.

Corequisite: ENV 105.

*3 credits*

**ENV 105: Historical Geology Lab**

Geologic maps will be studied to establish a familiarity with the principles of stratigraphy. Fossils will provide means by which the methods of preservation of organisms and the evolution of life can be appreciated.

Corequisite: ENV104.

*1 credit*

**ENV 112: Meteorology**

This course deals with the fundamentals of modern meteorology, weather instruments, and observations, weather codes, map plotting and analysis.

*3 credits*

**ENV 120: Introduction to Environmental Science I**

The focus of this course will include the underlying scientific principles of environmental concerns and the necessary tools for analyzing and solving such problems. The topics and concepts to be discussed include human population dynamics and effects, matter and energy, geochemical cycling, renewable and nonrenewable resources, preservation of wilderness and endangered species, land use, environmental ethics and sustainability. Due to the interdisciplinary nature of many environmental problems, the political, social, economic, and ethical aspects will also be discussed along with the biological and chemical principles.

*3 credits, Fall*

**ENV 121: Introduction to Environmental Science II**

This portion of the course will focus upon chemical, biological, and physical agents that are environmentally-mediated and constitute a risk to both human health and the environment. The major concepts that will be discussed include sources, environmental pathways of transmission, exposure-dose relationships, adverse health effects, environmental laws and regulations and control and remediation technologies. The principles and methods of risk assessment and risk management will also be identified and used throughout the course as an underlying theme.

*3 credits, Spring*

**ENV 200 and ENV 201: Environmental Seminar I and II**

A reading, discussion, presentation of scientific literature relating to the environment along with occasional speakers on environmental topics from inside and outside the university.

*1 credit*

**ENV 210: Environmental Geology**

This course explores the environmental consequences of mining and energy production. The geologic background of ore formation, ore extraction, and refining will be studied. Also, the impacts on the lithosphere, the hydrosphere, and the atmosphere due to the extraction of coal, gas, and oil will be studied. The consequences for short-term and long-term changes in the global environment will be studied. Throughout the course, the scientific method of inquiry, skepticism, evidence, and conclusion will be employed.

*3 credits*

**ENV 306: Oceanography**

Designed to acquaint students with the marine environment and its associated structure, which covers over seventy percent of the earth's surface. An environmental approach focusing on the physical, chemical and biological properties is emphasized throughout.

Prerequisite: ENV101 or ENV104 or ENV210 or permission of instructor.

*3 credits*

**ENV 307: Soil Science**

Designed to acquaint students with the physical, chemical and biological aspects of the world's soils, including use and classification. Particular emphasis is on soil pollution, and soil as a medium for plant growth.

Prerequisite: ENV101 or ENV104 or ENV210 or permission of instructor.

*3 credits*

**ENV 312: Environmental Hydrology**

This course involves the study of the hydrologic cycle and changes caused by human activity, including study of urbanizing effect on stream hydrology and stream restoration.

Prerequisite: ENV101 or ENV210

*3 credits, Fall*

**ENV 313: Environmental Hydrology Lab**

This lab course complements ENV312, and includes field and lab exercises relating to stream hydrology and stream restoration. 3 hrs lab.

Pre- or Co-requisite: ENV 312

*1 credit, Fall*

**ENV 336: Water Quality**

This course covers the major types of water pollution of concern to the environmental professional. Topics to be covered include water quality impacted by organic and nutrient pollution in surface and groundwater, as well as the water quality consequences of heavy metal and toxic organic pollution.

Prerequisites: CHEM 111, 112, 114, 115; Corequisite: ENV 337

*3 credits*

**ENV 337: Water Quality Lab**

This is a companion course to ENV 336 Water Quality, which is a required corequisite. Lab activities will cover wet chemistry and instrumental techniques required for water quality monitoring. Methods employed will include standard methods as well as EPA approved methods.

Prerequisites: CHEM 112, 115; Corequisite: ENV 336

*1 credit*

**ENV 383: Environmental Research**

This is a course in supervised research specifically for undergraduates who wish to experience science as a participant. The course requires a minimum of 3 hours per week involved in lab or field work. Students become active in on-going research projects which typically relate to the Great Lakes, local streams, or local industries.

Prerequisite: Permission of Instructor

*1 credit*

**ENV 400: Environmental Toxicology**

This course focuses upon the properties, effects and detection of chemical substances in the environment and within exposed species and how that information is used to protect human health. Topics to be covered include: dose-response relationships, toxicokinetics, biotransformation and elimination of toxicants, target organ toxicity, carcinogenesis, risk assessment and the standard-setting process.

Prerequisites: CHEM 114; Co-requisite: ENV 401

*3 credits, Fall*

**ENV 401: Environmental Health & Toxicology Laboratory**

This laboratory course accompanies the ENV400 course to allow students to apply the knowledge learned in class by collecting and analyzing environmental samples. This course will focus on the design and implementation of environmental sampling and will require students to design their own collection programs and obtain samples of appropriate media.

Corequisite: ENV 400

*1 credit, Fall*

**ENV 403: Environmental Engineering**

This upper level course applies the principles of science and engineering to pollution management. Specifically covered will be chemical kinetics, mass balance, mass transfer, water and wastewater treatment, air pollution control, and solid and hazardous waste management.

Prerequisite: PHYS 108 or PHYS 212

*3 credits, Spring*

**ENV 410: Geographic Information Systems (GIS)**

Geographic Information Systems (GIS) use computers to organize and interpret spatially identified data. GIS systems present data in map form, and allow sophisticated analysis of data to aid in better understanding and interpretation. The course introduces the student to ARCVIEW GIS, a software product of ESRI, Inc., the leading GIS software in use today.

2 hr lecture, 3 hrs computer lab.

*3 credits*

**ENV 416: Limnology of the Great Lakes with Lab**

A study of the physical, chemical and biological aspects of the Great Lakes. Advanced modern limnological concepts will be incorporated into understanding the past, present and future condition of the Lakes. Field and laboratory experiences will include the analysis of Lake Erie



water samples for chemical, biological and physical interpretation using standard procedures. Field experiences will include trips on the R/V *Environaut*, Gannon's research vessel.

Prerequisite: Senior standing or permission of the Instructor

*4 credits, Summer*

#### **ENV 420: Environmental Site Assessment**

The course covers the background and techniques required of an environmental professional in performing Phase I and Phase II environmental site assessments. These assessments are commonly required when there is a transfer of ownership of commercial or industrial property. Topics include site characterization, fate and transport, and application of the three attainment standards associated with Act II, Pennsylvania Land Recycling Program. Hands-on field experience included in the course activities. Course alternates annually with ENV 422.

Prerequisites: Senior standing

*2 credits*

#### **ENV 422: Wetlands Science & Engineering**

Wetlands Science and Engineering is a comprehensive course in wetland identification, function & value assessments, and management. The course will cover the fundamentals of identifying and delineating jurisdictional wetlands utilizing the current methods described in the 1987 US Army Corps of Engineers Manual. Comparative reference will be made to the 1989 EPA Joint Manual. Wetland design and construction methods will be presented as applicable to water quality enhancement, wildlife habitat improvement, stormwater management, and riparian environments. Course alternates annually with ENV 420.

Prerequisites: Senior standing

*2 credits*

#### **ENV 435: Water Quality Modeling**

An overview of fundamental processes and models developed to simulate and predict changes in water quality in natural settings. This course will be restricted to freshwater surface waters, particularly streams and rivers, but there will be some discussion of lakes and reservoirs. Students will become familiar with USEPA's BASINS (a GIS software for the presentation and analysis of water quality data) and the models associated with it. Course offered alternate Spring Semesters.

Prerequisites: Senior standing and ENV 403

*4 credits*

#### **ENV 440: Industrial Health I**

This course will review the basic principles and knowledge required to recognize, evaluate and control hazardous agents within the workplace environment. The topics to be covered include: an overview of occupational health and safety regulations, workplace exposure limits and standards, air sampling principles and techniques, chemical hazard identification and control, ventilation and biohazards.

Prerequisites: ENV 400

*3 credits, Spring*

#### **ENV 441: Industrial Health II**

Principles and control of the industrial environment as related to protection and health of occupationally employed persons, specifically related to industrial noise, personal protective equipment, and physical design factors (ergonomics). Course offered varied semesters.

Prerequisites: Senior standing

*3 credits*

#### **ENV 444: Environmental Law & Regulations**

The course introduces students to the major concepts of environmental law. Because environmental law is grounded in both federal and state statutes, the course will expose students to major components of statutory law at both levels, and will also explore the federal/state relationship using Pennsylvania as a model. Although a basic understanding of the American legal system and administrative law would be of great benefit, it is not a prerequisite to the course.

*3 credits, Spring*

#### **ENV 446: Industrial Hygiene Sampling Techniques**

Pre/Co-requisite: ENV 440

Develop an understanding of practices and procedures of environmental/occupational

sampling and interpretation of collected data. Emphasis is applied to air sampling techniques and methods, and industrial hygiene sampling. Course offered varied semesters.

Prerequisites: Senior standing

*2 credits*

#### **ENV 447: Epidemiology**

This course will review the basic principles related to the design and implementation of epidemiologic studies. The topics to be covered include: application of epidemiologic studies, study designs, statistical issues, exposure and health outcome measurements, measurement error and data interpretation. Examples from and application to occupational and environmental epidemiology will be emphasized, where appropriate. Course offered varied semesters.

Prerequisites: Senior standing

*3 credits*

#### **ENV 451: Water & Wastewater Treatment Design Engineering**

The course covers the fundamental processes and operations commonly used at typical drinking water treatment plants and municipal wastewater treatment plants. The student will learn how to specify the sequence of operations and size the important elements in treatment plant operations.

Prerequisites: Senior standing and ENV 403; co-requisite: ENV 453

*3 credits, Fall*

#### **ENV 453: Water & Wastewater Lab**

This laboratory course complements the lecture course GENV 551 Water & Wastewater Treatment Engineering. Laboratory exercises that simulate the processes and operations commonly used at typical drinking water plants and municipal wastewater plants will be explored.

Co-requisite: ENV 451

*1 credit, Fall*

#### **ENV 455: Air Pollution Control Engineering**

This course focuses on the technology and methodologies used to reduce concentration levels of pollutants being released to the atmosphere. The statutes, regulations, and permitting protocol will be introduced since they constitute an important requirement for obtaining legal authority to build a facility that will emit pollutants to the atmosphere. Integrated knowledge of fluid mechanics, thermodynamics, chemistry and mathematics will be applied. Topics covered will include nature and dynamic behavior of particulate matters, collection methods and analytical techniques, air pollution control/reduction methods, treatment technologies and air pollution control devices, and control of NO<sub>x</sub>, SO<sub>x</sub>, and volatile organic compounds (VOCs). Course offered alternative years.

Prerequisites: Senior standing and ENV 403

*3 credits*

#### **ENV 465: Soil & Groundwater Pollution**

Soil serves as a multifunctional and crucial natural system for the reception, storage, and transport of water and pollutants to aquifer media. In this course, fundamental understanding of physics, geology and hydrogeology, and chemistry, along with engineering principles, will be used to understand the dynamic nature of fluid flow and contaminant fate and transport in porous media. Topics covered include the hydrologic cycle, sources and types of contaminants, remediation technologies, and well hydraulics theory and field examples.

Prerequisites: Senior standing and ENV 403.

*3 credits*

#### **ENV 474: Environmental Microbiology**

The course will cover the applied effects of microorganisms on both the environment and human health/activities. The topics to be covered during this course include: biogeochemical cycling; municipal water and wastewater treatment; bioremediation; detection and quantification techniques; and the control of human pathogens.

Prerequisite: BIOL 106 or 331; Co-requisite: ENV 478

*2 credits, Spring*

#### **ENV 477: Industrial & Hazardous Waste Management**

The objective of this course is to apply multidisciplinary approaches to managing industrial and hazardous wastes. Topics include familiarization with sources, classification, storage,

transportation, various physicochemical and biological remediation technologies, and pertinent federal and state regulations. Knowledge of physicochemical and/or biological characteristics of a waste will be used to design appropriate disposal options. Lectures are supplemented with a field trip to a local industry and written and oral presentation of term-papers that survey integrated remediation technologies. Course offered alternative years.

Prerequisite: ENV 400

*3 credits*

#### **ENV 478: Environmental Microbiology Lab**

This lab accompanies ENV 474 and includes field and lab work which aid in understanding environmental microbiological principles.

Co-requisite: ENV 474

*2 credits, Spring*

#### **ENV 486: Fluid Mechanics and Water Systems Design**

This course begins with a study of the principles of fluid mechanics, including the energy of static and dynamic fluid systems. Those principles are then applied to a study of pumps and the design of water distribution systems and wastewater systems.

Prerequisites: MATH 242, ENV 312, ME 204; Corequisite: ENV 487

*3 credits*

#### **ENV 487: Fluid Mechanics and Water Systems Design Lab**

This lab course complements ENV 486 Fluid Mechanics and Water Systems Design. This course provides laboratory demonstration of basic fluid mechanics, the creation of engineering drawings of hydraulic piping systems, sewage collection systems, and drainage basins using computer-aided design (CAD) software. Other computer software such as EPANET 2.0, Storm Water Management Model (SWMM) 5.0, and Autodesk Civil 3D Hydraflow will be used to simulate and design piping systems.

Corequisite: ENV 486

*1 credit*

#### **ENV 489: Special Topics in Environmental Science**

Topics of special and/or current interest will be covered. 1-4 credits

#### **ENV 494: Senior Design I**

Environmental engineering design is the process of devising a system, component, or process to meet desired needs and that include considerations of risk, uncertainty, sustainability, life-cycle principles, and environmental impacts. It is a decision-making process (often iterative), in which the basic sciences, mathematics, and the engineering sciences are applied to convert resources optimally to meet these stated needs. The student must have an ability to apply both analysis and synthesis in the engineering design process, resulting in designs that meet constraints and specifications. Constraints and specifications include societal, economic, environmental, and other factors as appropriate to the design. The student's main work product is the preparation of a professional quality design proposal and a presentation. Students will also begin their preparation for the Fundamentals of Engineering examination, learn about teamwork, and study the engineer's Professional Code of Ethics.

*2 credits*

#### **ENV 495: Senior Design II**

This course continues the study of the design process in environmental engineering. The design project developed in ENV 494 is implemented. The course's main objective is the conduct of a project which results in an improvement to, or the development of a system for pollution control, pollutant fate and transport modeling, or other related process or operation relevant to environmental engineering. Data generation, presentation, and analysis will be required. The project concludes with the preparation of a professional quality report and presentation.

Prerequisite: ENV 494

*3 credits, Spring*

#### **ENV 496: Senior Thesis I**

This senior course is the first part of a two-semester senior research project course that provides students with an introduction to the scientific method and the scientific literature. Students will author a research proposal that includes a background literature search, a statement of the research objectives and the design of a research plan.

*1 credit*

**ENV 497: Senior Thesis II**

This course is the second part of a two-part sequence for all Environmental Science majors. The research proposal prepared the prior semester is conducted. The objective of this course is to mentor the student during the scientific study and to provide support and guidance for the writing of the final Thesis. The class will meet once a week as a group for presentation of material relating to analysis and presentation of data and results. In addition, each student will meet at least once a week with the Instructor on an individual basis to discuss the progress of the student's research. The major outcome of the course is the Senior Thesis which will be presented to the class and to the departmental seminar. The Thesis will include the Literature Review and Methods sections from the Proposal, and Results and Discussion sections reporting the findings of the study.

Prerequisites: ENV 496

*4 credits, Spring*

**ENV 498: Environmental Internship**

*variable 1-3 Credits*

**SEECs (101, 102, 201, 202, 301, 302, 401, 402): Professional and Personal Enrichment Seminar**

Course description is listed in Computer & Information Science section of the catalog.

*0 credit, Fall and Spring*

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## INDUSTRIAL ENGINEERING

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IKECHUKWU P. OHU, Ph.D., *Program Director*

FACULTY: *Assistant Professors: Ikechukwu P. Ohu, Jun Zhang.*

**Overview**

Industrial Engineers find ways to design effective systems of work and eliminate wastefulness in a broad range of processes. They devise efficient ways to use workers, machines, materials, information, and energy to make a product or provide a service. Industrial engineers are the people who figure out how to do things better. They find ways that are smarter, faster, safer, and easier, so that companies become more efficient, productive, and profitable, and employees have work environments that are safer and more rewarding. You might think from their name that industrial engineers just work for big manufacturing companies, but they are employed in a wide range of industries, including the service, entertainment, shipping, and healthcare fields. For example, nobody likes to wait in a long line to get on a roller coaster ride, or to get admitted to the hospital. Industrial engineers tell companies how to shorten these processes. They try to make life and products better and do more with fewer resources.

**Program Educational Objectives**

- Students will use principles of Industrial Engineering to work successfully with a variety of people to further the aims and objectives of themselves, their organization and others.
- Students will grow professionally, having increased their level of authority, contribution, leadership and teamwork.
- Students will demonstrate their ability to increase their knowledge in ways most appropriate for their goals.
- Students will meet personal career goals.

**Student Outcomes**

- a. Apply knowledge of Mathematics, Science, and Engineering
- b. Ability to design and conduct experiments; Analyze and interpret data
- c. Design system, component, or process to meet needs

- d. Function on multidisciplinary teams
- e. Identify, formulate and solve engineering problems
- f. Understand professional and ethical responsibility
- g. Ability to communicate effectively
- h. Broad education necessary to understand impact of engineering solutions
- i. Recognition of need to engage in lifetime learning
- j. Knowledge of contemporary issues
- k. Ability to use techniques, skills and modern tools
- l. An ability to work professionally (including system design and realization) in industrial engineering with considerations of business.

### **Concentrations within Industrial Engineering**

Industrial Engineering students have the opportunity to select from six concentrations. Students will not be required to select a concentration.

#### **A. Production Engineering:**

Emphasizes production in industrial or service industries. The student learns methods for developing engineering solutions for a broad range of production and production related problems. Students select three of the following:

- IE 455 Operations Research II
- IE 440 Lean Systems II
- IE 415 Safety
- IE 465 Healthcare Systems Engineering
- IE 456 Robotics I
- IE 457 Robotics II

Students electing the production engineering concentration will receive the FANUC Robotics certification upon completion of the two courses in robotics.

#### **B. Ergonomics & Human Factors:**

Focuses students on biological and human systems in the context of Industrial Engineering. This concentration is best suited for students intending to pursue graduate study in Engineering. Note that the student must select Biology over Chemistry in the Freshman year and take MATH 243 as the math/science elective in the Sophomore year in order to avoid extra courses or an additional semester to complete the Bachelor's degree.

- BIOL 117 and BIOL 118 (instead of Chemistry)
- MATH 243 Calculus 4 as a math elective,
- ECE 231 Introduction to Electrical Engineering and (replaces ME 329)
- ECE 232 Introduction to Electrical Engineering Lab (replaces ME 330)
- ME 334 Kinematics of Mechanisms (replaces IE 420)
- ME 336 Fluid Mechanics (replaces IE 450), and the following as technical electives:
- IE 415 Safety
- BME 410 Biomaterials
- BME 420 Biomechanics

#### **C. Healthcare Systems:**

Emphasizes the engineering and management of healthcare systems. Students learn to develop engineering and managerial solutions for a broad range of problems in the operation of a health care facility.

- IE 440 Lean Systems II and
- IE 465 Healthcare Systems Engineering, plus one of the following:
- HCMG 305 Introduction to the U.S. Healthcare System (3 credits)
- HCMG 340 Healthcare Economics (3 credits)
- HCMG 410 Healthcare Law, Regulation, and Policy (3 credits)
- HCMG 450 Healthcare Information Systems and Informatics (3 credits)

D. Supply Chain & Logistics Systems:

Emphasizes design and management of the supply chain.

- IE 455 Operations Research II, plus two of the following:
- SCMG 310 Global Logistics (3 credits)
- SCMG 340 Sourcing and Supply Chain Management (3 credits)
- SCMG 415 Supply Chain Risk Management (3 credits)
- SCMG 425 Supply Chain Design (3 credits)

E. International Industrial Engineering:

Emphasizes the growing importance of international teams to design and develop engineering solutions for production and service businesses

- Approval of all courses by Program Director
- Study Abroad required. Expenses to be paid by the student.
- Approved courses taken abroad as technical electives
- Selection of Liberal Studies courses with an international focus

F. Economics and Financial Systems

Emphasizing prices, lead-time, risk, and analysis to influence demand, coordination and competition. This track is more qualitative regarding processes but quantitative regarding financial aspects.

- BCOR 111 Principles of Microeconomics or
- BCOR 112 Principles of Macroeconomics as a Social Science, plus three from the following:
  - ECON 327 Econometric Methods
  - FINC 312 Financial Management I
  - FINC 312 Financial Management II
  - FINC 411 Advanced Financial Management
  - FINC 423 Financial Models

Students completing MGMT 330 are eligible to take the exam for Certified Associate Project Manager. All students in their final semester of the IE program are eligible to take the Fundamentals of Engineering (FE) Exam. (The FE exam is the first step toward state licensing as a Professional Engineer (PE).)

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## Course Descriptions

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### IE 201: Engineering Projects & Economics

Introductory course on the basics of scheduling and tracking project budgets, and economic and financial analysis to assist engineering managers in making fiscally sound decisions.

Topics include: Gantt charting, Work Breakdown Structures, Budget Tracking, and financial measures such as Return On Investment, Break-even Analysis, Replacement Analysis, Depreciation and Taxes, and Multiple-criteria Decision Making.

*3 credits*

### IE 310: Work Design

The design and implementation of a production system is used to provide a fundamental understanding of work design and performance improvement concepts, tools, and techniques. Topics covered include applied anthropometry, charting techniques, work

methods and waste analysis, performance measurements and learning curves, workplace organization and visual controls, human factors, and physiological stress.

Prerequisite: MATH 312

*3 credits*

### **IE 320: Engineering Statistics**

Introduction to Applied Engineering Statistics. Basic concepts in statistics, exploratory data analysis, different sampling methods, descriptive statistics, inferential statistics for one and two population cases, goodness of fit tests, regression analysis and non-parametric statistics. Statistical software is used throughout the course.

Prerequisites: MATH 242 and MATH 312

*3 credits*

### **IE 322: Quality Assurance and Control**

This course covers the basics of modern methods of quality control and improvement that are used in the manufacturing and service industries. It includes quality philosophy and fundamentals, statistical methods of quality improvement, concept of variation and its reduction, statistical process control, acceptance sampling, designed experiments in quality improvements, and quality in the service sector. Deming's quality concepts are included.

Prerequisite: IE 320

*3 credits*

### **IE 325: Design of Experiments**

Advanced topics in Applied Engineering Statistics. Introduction to linear regression analysis, simple linear models, multiple linear models, residual analysis, indicator variables, variable selection process, ANOVA, introduction to DOE, basic designs, factorial designs, blocking, Taguchi designs, and response surface methodology. Extensive use of statistical software throughout the course.

Prerequisite: IE 320

*3 credits*

### **IE 350: Operations Research I**

This course is an introduction to the principles and practice of Operations Research, and its role in human decision making. In particular, the course focuses on mathematical programming techniques such as linear programming (the Simplex Method, concepts of duality and sensitivity analysis), network optimization (Including transportation and assignment problems) and nonlinear programming.

Prerequisite: MATH 141

*3 credits*

### **IE 410: Ergonomics**

Fundamentals of work design are built upon to ground the student in human factors and ergonomics of work design. Topics include applied job design, manual material handling, cumulative trauma disorders, hand tool design, design of controls and displays, and ergonomic and human factors of product design.

Prerequisite: IE 310

*3 credits*

### **IE 415: Safety**

This course provides the student with a background in safety engineering in industrial and healthcare settings. This includes the design of engineering solutions to problems such as falling, hazardous material exposure, and guarding of machinery.

*3 credits*

### **IE 420: Supply Chain & Logistics Engineering**

Students gain an understanding of the decision-making tools necessary to design value in the global supply chain from concept to customer. Quantitative methods are employed to aid the decision-making process of demand forecasting and enterprise planning for the purpose of increasing profit and value to stakeholders. Basic concepts in strategy, forecasting, demand planning, inventory control and value stream mapping will be taught and utilized to enable the decision-making process to be based on quantitative metrics.

Prerequisite: IE 350

*3 credits*

### **IE 430: Lean Systems**

Students will learn Lean concepts and contrast them with traditional mass production and

service methodologies. It also provides the students with a basic framework for performing analysis on existing systems.

Prerequisite: IE 410

*3 credits*

#### **IE 440: Lean Systems II**

The purpose of this course is to teach the student the key methods for implementation of Lean and allow the student to practice using the methods. The focus will be on understanding and using these methods as practiced in industry and health care.

*3 credits*

#### **IE 450: Simulation**

In this course, the student will develop an understanding and need for simulation in practice. The course will focus on basic and advanced concepts in simulation including comparing the simulated results with analytical results, and successfully develop simulation models useful in production/manufacturing, supply chains, transportation, and other areas related to Industrial and Manufacturing Engineering. Simulation package such as ARENA will be integrated and used throughout the course.

Prerequisite: IE 350

*3 credits*

#### **IE 455: Operations Research II**

Stochastic models in operations research; Review of basic probability, discrete time Markov chains; continuous time Markov chains; discrete and continuous phase type distributions; birth-and-death processes; elementary queuing models involving Poisson arrivals and exponential service times; advance queuing models; basic concepts in simulation and simulation of various processes.

*3 credits*

#### **IE 465: Healthcare Systems Engineering**

This course examines the technical structure of the healthcare delivery system and the role that industrial and systems engineering (ISE) plays in its design and improvement. Included will be how healthcare systems work in hospitals, medical offices, clinics and other healthcare organizations. Traditional ISE methods for improving quality, patient safety, and employee productivity and satisfaction will be presented within a systematic application of value chain engineering designed to produce lean processes.

*3 credits*

#### **IE 475: Robotics I**

This course covers the basic theory and methods of robot operation and programming. The laboratory portion of the course will focus on programming a robot for specific pick and place tasks.

*3 credits*

#### **IE 476: Robotics II**

This course covers advanced robot programming and movement. Advanced programming in the laboratory will include integration of the robot into a workcell.

*3 credits*

#### **IE 491-496 Special Topics in Industrial Engineering**

*1 to 3 credits*

#### **IE 495: Capstone**

This course provides the student with the challenge of integrating and synthesizing general engineering knowledge particularly in industrial and manufacturing disciplines, into creatively solving real-world, open-ended problems in a team setting. This requires defining a project work plan, developing the problem statement, objectives and evaluation criteria; data collection; selection of appropriate analytical and production techniques; developing and integrating recommendations; justifications of recommended course of action; and written and oral presentation of results. The project could involve production systems or product design where the planning can extend to product realization.

Prerequisite: IE 201

*3 credits*

#### **IE 499: Independent Study in Industrial Engineering**

*3 credits*



**Industrial Engineering Curriculum**

<i>Freshman - Fall</i>		<i>Freshman - Spring</i>	
2	First Year Seminar/ENG 100	3	Engineering Projects & Economics/IE 201
1	Digital Computer Usage/ME 205	1	Computer Graphics Lab/ME 208
1	Digital Computer Lab/ME 206	3	Calculus 2/MATH 141
2	Engineering Graphics/ME 207	3	Sacred Scriptures/LTHE 121
3	Calculus 1/MATH 140	3	Chemistry or Biology/CHEM 111 or BIOL 117
3	History of West & World/LHST 111	1	Chemistry or Biology Lab/CHEM 112 or BIOL 118
3	College Composition/LENG 111	3	Fund of Physics 1: Mechanics/PHYS 210
1	Technical Communications/SPCH 110		
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16		17	
<i>Sophomore - Fall</i>		<i>Sophomore - Spring</i>	
3	Statics/ME 201	3	Work Design/IE 310
3	Materials Science/ME 315	1	Instrumentation & Measurements Lab/ME 332
3	Calculus 3/MATH 242	3	Engineering Statistics/IE 320
3	Probability & Statistics/MATH 312	3	Introduction to Philosophy/LPHI 131
3	Fund of Physics 2: Fluids and Thermodynamics/PHYS 212	3	Theology II/LTHE
3	Critical Analysis & Composition/LENG 112	1	Physics Lab for Engineering/PHYS 218
		3	Math or Science Elective
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18		17	
<i>Junior - Fall</i>		<i>Junior - Spring</i>	
3	Strength of Materials/ME 214	3	Materials Processing/ME 329
3	Ergonomics/IE 410	3	Lean Systems/IE 430
3	Intro to Operations Research/IE 350	3	Design of Experiments/IE 325
3	Statistical Quality Control/IE 322	3	Principles of Management/BCOR 251
3	Philosophy II/LPHI	3	Social Science
		1	Strength of Materials I Lab/ME 215
<hr/>		<hr/>	
15		16	
<i>Senior - Fall</i>		<i>Senior - Spring</i>	
1	Manufacturing Laboratory/ME 330	3	IE Capstone /IE 495
3	Supply Chain & Logistics Engineering/IE 420	3	Technical Electives
3	Simulation/IE 450	3	Math/Science Electives
3	Technical Elective	3	Liberal Studies Senior Seminar/LBST 383
1	Leadership Seminar	3	Theology or Philosophy Elective LTHE or LPHI
3	Project Management/MGMT 330	3	Fine Arts/LFIN
3	Literature Series/LENG		
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17		18	

**For Students Choosing to Study Abroad**

- Junior - Spring - Semester Abroad*
- 3 Foreign Language
  - 3 Country in Context /(Social Science)

- 3 Project Management/(MGMT 330)
- 3 Automation/(Technical Elective)
- 3 Intercultural Management/(Technical Elective)

15

*Senior – Fall*

- 1 Manufacturing Laboratory/ME 330
- 3 Supply Chain & Logistics Engineering/IE 420
- 3 Simulation/IE 450
- 3 Technical Elective
- 1 Leadership Seminar
- 3 Project Management/MGMT 330
- 3 Literature Series/LENG

16

*Senior – Spring*

- 3 IE Capstone /IE 495
- 3 Theology or Philosophy Elective LTHE or LPHI
- 3 Liberal Studies Senior Seminar/LBST 383
- 3 Design of Experiments/IE 325
- 3 Lean Systems/IE 430
- 3 Fine Arts/LFIN
- 1 Strength of Materials I Lab/ME 215

19

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## INFORMATION SYSTEMS (IS)

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The Information Systems (IS) major is designed to prepare the student for careers in the information processing and technology industries. Students develop skills in the design, modeling, and development of computer-based information systems. These include two primary areas of study: computing and business. To support the development of computing skills, the students learn to utilize and to critique technology associated with the systems, and apply them to business. To support the development of business skills, a portion of the curriculum emphasizes the role and concepts of the different functional areas of business. In addition, students develop communication and interpersonal skills in order to interact positively with their organizations. Students incorporate the facets of their professional education with the facets of the societal awareness and make ethical - professional and personal - decisions. Ultimately, the students leave with the foundations to define a high quality of life for themselves by integrating their professions with life-style decisions.

**Aims and Objectives:**

The IS major prepares its graduates to achieve significant career and professional accomplishments in four ways: as employable and accountable professionals, competent problem solvers, and selfless contributors.

As employable professionals, IS graduates are well prepared for employment or graduate work in their field, and to continue working in the chosen or related fields. As accountable professionals, the graduates are accountable for their professional roles, and as such, pursue their profession in an ethical manner. This includes the responsibility for, or leadership in research/development projects or teams, aspects of major system components, or business development work. As competent problem solver's, the graduates apply current computing technology knowledge, skills, techniques and methods to develop effective solutions for problems, improve product, process and/or organizational elements, or to innovate. As selfless contributors, our graduates voluntarily give their time, talent, and/or money to their community, profession, church and/or society.

**Opportunities:**

The field of information systems is one of the fastest growing employment markets in today's society. Individuals are needed in areas of information resource management, data

administration, systems analysis, applications development, network coordination, web and e-commerce initiatives, and technical operations. IS majors can address the information-processing and technology needs of any form of business organizations whether it be service, financial, manufacturing, or virtual.

### Program Outcomes:

Gannon's Information Systems program is accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>. Gannon's IS program has enjoyed a long history of successful students who have learned to specify, design, and build information systems.

The program has a strong focus on problem-solving beginning with the very first course in computing (*CIS 180 Problem Solving & Computer Programming*) and carried through into the senior design sequence (*CIS 457/458 Senior Design*). Throughout the learning process, students learn how to effectively define and represent both problems and the solutions needed to solve those problems. Throughout the course of study, students learn, and practice making ethical decisions.

All students will learn how to utilize information and computer technology, while developing and maintaining a comprehension of the changing technology used in information systems and their application in business. Through this learning process, we expect students to own a desire for continuous improvement and demonstrate effective verbal, written, and listening communication skills.

Specifically, Information Systems students completing our program learn to:

- **Understand** the processes that support the delivery and management of information systems in a business environment

### Integration:

One of the hallmarks of Gannon's IS degree is its integration with traditional liberal-studies education. Gannon's IS majors not only learn computing well, but also learn how to synthesize, think critically and communicate well. In our program, bridging traditional courses like writing, philosophy, theology and ethics begins in the *CIS 103 CIS First-Year Seminar*, and continues throughout the program, culminating in the *CIS 457/458 Senior Design* sequence.

**All CIS course descriptions are provided in section *Computer and Information Science***

#### CIS Core Courses

CIS 103	First-Year Seminar	CIS 302	CIS Professional Seminar
CIS 180/181	Problem Solving & Computer Programming and Lab	CIS 303	CIS Leadership Seminar
CIS 182/183	Object-Oriented Programming and Lab	CIS 350	Requirements & Project Mgmt.
CIS 219	Programming in UNIX	CIS 355	Dynamic Web Development
CIS 255	Database Management Systems	CIS 457	Senior Design I
CIS 290	Introduction to Networks	CIS 458	Senior Design II Lab

#### Information Systems Courses

CIS 195	Principles of Systems	CIS 337	IS Architectures & Deployment
CIS 207	Introduction to Business Programming: COBOL	CIS 340	Multi-Tiered Systems
CIS 270	Information Technology and Operations	CIS 375	Server Management
CIS 305	Essentials of UNIX Admin.	CIS 385/386	Network Design & Management and Lab
CIS 335	Systems Analysis and Design		

**Business Core**

Students complete a majority of the business core, as part of the Dahlkemper School of Business.

MATH 115	Calculus for Business	BCOR 220	Business Statistics
BCOR 105	Foundations of Bus. Enterprise	ECON 285	Project Economics
BCOR 112	Principles of Macroeconomics	BCOR 240	Mktg. in Global Environment
BCOR 214	Principles of Accounting	BCOR 250	Management Theory & Practice
BCOR 215	Principles of Accounting II		

**Technical Electives**

Students select two technical electives with approval of their academic advisor. The goal of the technical electives is to have a thematic set of courses that helps the student focus their studies on a particular specialty related to their interests.

**Common Elective Themes:**

• Mobile Programming	CIS 239, CIS 277, CIS 377
• Systems Analysis	CIS 315, CIS 318
• Software Usability and Quality	CIS 239, CIS 415
• Multimedia/Entertainment	CIS 245/246, CIS 445, COMM 356, COMM 358
• Computer Science	CIS 220, CIS 330, CIS 360, CIS 370
• Security/Criminal Justice	CIS 387, CRFO 345, CRFO 350

Other approved technical electives include:

CIS 391-396 Special Topics and CIS 400 Internship

**Information Systems Curriculum**

<b>FRESHMAN</b>			
<i>Fall</i>		<i>Spring</i>	
2	First-Year Seminar/CIS 103	3	Principles of Systems/CIS 195
2	Prob. Solv. & Comp. Prog./CIS 180	2	Object-Oriented Prog./CIS 182
1	Prob. Solv. & Comp. Prog. Lab/CIS 181	1	Object-Oriented Prog. Lab/CIS 183
3	Calculus for Business/MATH 115	3	Critical Analysis & Comp./
3	Foun. Business Enterprise/BCOR 105		LENG 112
3	College Composition/LENG 111	3	Princ. Accounting I/BCOR 214
3	Introduction to Philosophy/LPHI 131	3	Principles of Macroeconomics/
			BCOR 112
17		15	
<b>SOPHOMORE</b>			
<i>Fall</i>		<i>Spring</i>	
3	Programming in UNIX/CIS 219	3	Database Mgmt. Systems/CIS 255
3	Intro. Networks/CIS 290	3	IT and Operations/CIS 270
3	Discrete Mathematics 1/MATH 222	3	Business Statistics/BCOR 220
3	Project Economics/ECON 285	3	History of the West & World/
3	Marketing in Global Env. /BCOR 240		LHST 111
3	Sacred Scripture / LTHE 121	3	Philosophy II Series/LPHI
18		15	
<b>JUNIOR</b>			
<i>Fall</i>		<i>Spring</i>	
3	Intro. Bus. Prog. -- COBOL/CIS 207	1	CIS Professional Seminar/CIS 302
3	Systems Analysis & Design/CIS 335	1	CIS Leadership Seminar/CIS 303
3	Dynamic Web Development/CIS 355	1	Essentials of UNIX Admin./CIS 305

2	Network Design & Mgmt./CIS 385	3	IS Architectures & Deployment/ CIS 337
1	Network Design & Mgmt. Lab/CIS 386		
3	Mgmt. Theory & Practice/BCOR 250	3	Req. & Project Mgmt./CIS 350
3	LS Science	3	Server Management/CIS 375
		3	Theology or Phil Series III/ LTHE or LPHI
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18		15	
SENIOR			
<i>Fall</i>		<i>Spring</i>	
3	Senior Design I/CIS 457	3	Senior Design II Lab/CIS 458
3	Multi-Tiered Systems/CIS 340	3	CIS Technical Elective/CIS
3	Technical Elective/CIS	3	Princ. Accounting II/BCOR 215
3	Theology II Series/LTHE	3	Fine Art Series/LFIN
3	Elective	3	Literature Series/LENG
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15		15	

### Information Systems Minor Requirements (18 credits)

3	Problem Solving and Computer Programming & Lab/CIS 180 & CIS 181
3	Object-Oriented Programming & Lab/CIS 182 & CIS 183
3	Principles of Systems/CIS 195
3	Information Technology and Operations/CIS 270 or Introduction to Business Programming/CIS 207 or Database Management Systems/CIS 255 or Introduction to Networks/CIS 290
3	Systems Analysis and Design/CIS 335
3	IS Technical Elective
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18	

## MECHANICAL ENGINEERING

MAHESH C. AGGARWAL, Ph.D., *Chairperson*

FACULTY: *Professors:* Mahesh C. Aggarwal, Gong Chen, Michael J. Panza, Hamid Torab, Karinna Vernaza. *Associate Professor:* Scott E. Steinbrink. *Assistant Professor:* David Gee, Mahoobe Mahdavi, Robert J. Michael. *Lecturer:* Michael Sirak.

### Overview and Objectives:

The overall goal of the Mechanical Engineering Program is to provide the student with a fundamental and application based education. This program is designed to prepare the student for employment in research, development, design and production in industry or government as well as to assure a high level of preparation for those students who continue to advanced studies. A part of this preparation is to recognize and respond to ethical and public issues, including safety, social and environmental concerns.

To facilitate and support student development, the department has up-to-date laboratories for education and research, including strength of materials lab, fluid mechanics lab, manufacturing lab, heat transfer lab, automatic control lab, computer graphics and CAD lab. Two technicians and a machine shop support these labs.

The ME Program maintains an up-to-date curriculum, has modern laboratories, well-qualified faculty and a strong academic and career advising system. Students have access to the University Center for Experiential Learning and to the Faculty.

**Program Educational Objectives:**

- (A) Demonstrate *technical ability* through application of analytical, experimental, and computer knowledge to physical systems, while engaging in careers in industry or government.
- (B) Demonstrate *professional leadership* gained from completing a rigorous engineering program and having opportunity for campus involvement, as evidenced by promotion and/or acceptance of increasing professional responsibilities.
- (C) Demonstrate *commitment to the ideals of a values-centered education as global citizens* through workplace conduct, and professional and community activities undertaken for the benefit of the human condition.
- (D) Demonstrate *recognition of the value of lifelong learning* through pursuit of continuing education while obtaining experience in their field of endeavor, workplace educational opportunities, or graduate studies related to engineering and management.

**Student Outcomes**

Student learning outcomes for the Gannon ME department are:

- a. An ability to apply knowledge of mathematics, science and engineering
- b. An ability to design and conduct experiments as well as to analyze and interpret data
- c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- d. An ability to function on multidisciplinary teams
- e. An ability to identify, formulate, and solve engineering problems
- f. an understanding of professional and ethical responsibility
- g. An ability to communicate effectively
- h. The broad education necessary to understand impact of engineering solutions in a global, economic, environmental and societal context
- i. A recognition of need for, and ability to engage in life-long learning
- j. A knowledge of contemporary issues
- k. An ability to use techniques, skills, and modern engineering tools necessary for engineering practice

Design Integration Table

Mechanical Design

- Mechanics
- Machine Design

Thermal and Energy Design

- Heat Transfer
- Fluid Mechanics
- Thermal System Design

Mechanics/Structures & Thermal Fluid Systems Design

- Intro to Engineering
- Engineering Design
- Vibration
- System Dynamics and Control

Specific Areas in Mechanics/Structures & Thermal/Fluid Design

- 7-8 Technical Electives offered in each area

Non-Technical Issues in Liberal Studies Core

- Ethics
- Economics and Social Impact

Capstone Senior Design Project

**The Program:**

Mechanical Engineers are required to take 32 credits of basic science and math, 36 credits of Liberal Studies Core composed of humanities and social science, and 67 credits of engineering, science, and design. This program leads to a Bachelor of Science degree in Mechanical Engineering.

The program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

A five year cooperative professional practice program is also available. The student must meet the same course requirements as the four year student. Additionally, a total of four work sessions in industry are included. Students must maintain a minimum 2.75 GPA to participate in this option.

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**COURSE DESCRIPTIONS:**

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**ENG 100: First-Year Seminar in Engineering**

Course description is listed in the Electrical and Computer Engineering section of the catalog.  
*2 credits, Fall*

**ENG 201: Engineering and Biological Wonders of Panama**

Engineering and Biological Wonders of Panama is a three credit course that includes weekly seminars and a travel trip over spring break in Panama. This course enables the student to explore the technical design of the world famous Panama Canal and the diverse biological ecosystems found in Panama, including the rainforest and the waters and beaches of the Pacific Ocean. Participants stay in Panama City and travel on day trips to different locations within Panama. This course is a Liberal Studies Science option.  
*3 credits, Spring*

**ENG 399: Co-op Placement**

For the students in the five year Co-op option. Students register for each full period in industry. Students are evaluated by an engineer in industry and are under the mentorship of the department faculty.

Prerequisite: Permission of the department.

*0 credit*

**ME 201: Statics**

A study of force systems acting on bodies which are not in motion. Learning the math and engineering skills in using 2-D & 3-D force vectors. Learning how to use freebody diagrams. Learning to use components & resultants, moments & couples. Math and engineering skills in the study of centroids, frames, trusses, beams and friction. Associated computer assignments on Statics problems.

Prerequisites: PHYS 210, ME 205 and ME 206 (may be taken concurrently)

*3 credits, Fall*

**ME 204: Dynamics**

A study of motion and the forces, which affect motion, based on the vectorial approach to kinematics and kinetics of particles & rigid bodies using freebody diagrams. Includes the math and engineering skills used in translation, rotation, and general plane motion as well as dynamic force analysis, conservation of mechanical energy, work-energy methods, methods of momentum and impulse. Associated computer assignments.

Prerequisite: ME 201

*3 credits, Spring*

**ME 205: Digital Computer Usage**

An introduction to computer programming using Matlab. Emphasis on the logical thought process needed to solve engineering problems, and on the application of engineering principles. Students will use the computer lab to complete assignments.

*1 credit, Fall*

**ME 206: Digital Computer Lab**

Laboratory experience to complement ME 205. Three hours per week.

Concurrent with ME 205

*1 credit, Fall*

**ME 207: Engineering Graphics**

An introduction to the principles and applications of engineering graphics. Learning drafting convention and the concepts of engineering documentation. Orthographic sketching and drawing. Auxiliary views and cut sections. Familiarization with standard parts such as threaded fasteners. Dimensioning principles.

*2 credits, Fall*

**ME 208: Engineering Computer Graphics Lab**

Introduction to a 2D CAD software (Cadkey) and a 3D CAD solids based software (Pro/Engineer). Extensive hands-on experience in both Cadkey and ProEngineer covering part and assembly design, and production drawings.

Concurrent with ME 207

*1 credit, Spring*

**ME 212: Introduction to Thermal Sciences**

Introduction to thermodynamics, fluid flow, and heat transfer for non-Mechanical Engineers. Thermodynamic properties of substances, 1st and 2nd laws and applications to power cycles; control volumes. External and internal flows. Heat transfer through conduction, convection, and radiation.

Prerequisites: PHYS 212

*3 credits, Spring*

**ME 214: Strength of Materials**

Concepts of stress & strain, Hooke's law, Poisson's ratio, axial tension, compression, torsion & shear. Transverse loading and bending; shear & moment diagrams, and deflections.

Compound stress, Mohr's circle & principal stresses, statically indeterminate loading, and column instability. Associated computer problems.

Prerequisite: ME 201

*3 credits, Fall*

**ME 215: Strength of Materials Laboratory**

Design and conducting experiments to understand basic principles and to compare theory vs. experiment. Experiments are on hardness, impact, tension, torsion, bending, fatigue, strain gages, photoelastic stress, and columns. Learning communication of results using clear technical writing. Use of Excel for processing experimental data, graphing results, and doing statistical analysis.

Prerequisite: ME 214 (may be taken concurrently)

*1 credit, Spring*

**ME 300: Leadership Seminar**

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in the various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for students' leadership development as reflected both in this course and in the co-requisite Theology or Philosophy Series III course.

*1 credit*

**ME 312: Engineering Thermodynamics**

Introduction to concepts of system, control volume and control surface; properties of pure substances; equations of state for ideal and non-ideal gases; first and second laws of thermodynamics and their consequences. Application of first and second law to vapor power cycles, vapor refrigeration cycles and air standard power cycles: air-water vapor mixtures (concept of psychrometric chart).

Prerequisite: PHYS 212

*3 credits, Spring*

**ME 315: Materials Science**

An introductory study of engineering properties of materials. Learning the engineering science of atomic structure, crystals, crystal imperfections, and diffusion. Learning mechanical properties, dislocations & strengthening, and failure mechanisms. Learning phase diagrams & transformations, thermal processing and alloys. Learning about material selection for design; most commonly used alloys of steel. Associated computer assignments on materials science.

Prerequisite: CHEM 111

*3 credits, Fall*



**ME 326: System Dynamics and Control**

An introduction to dynamic system modeling, analysis, and control. Representation of mechanical, thermal-fluid, electrical, and control components in various engineering systems, including vibration analysis. Steady state and transient specifications and stability characteristics to design interdisciplinary engineering systems including actuator, process, and control.

Prerequisites: ME 403, ME 204, ECE 231 (may be taken concurrently)

*3 credits, Fall*

**ME 327: Automatic Control Laboratory**

Three hours per week to accompany the course material of Automatic Control.

Prerequisite: ME 326

*1 credit, Fall*

**ME 329: Materials Processing**

An introduction to different methods of producing components of machines and structures as well as to the use of modern tools and techniques in materials processing. Application of the previously gained knowledge from the general area of engineering sciences, in particular materials science and strength of materials, to identifying and solving engineering problems encountered in designing various manufacturing processes. Topics covered include: casting, metal forming, welding, powder metallurgy, and machining. Important elements of material selection and heat treatment are also covered. Student will develop the ability to determine the equipment, materials, and processes which are necessary to convert the design into reality in an efficient manner.

*3 credits, Spring*

**ME 330: Manufacturing Lab**

The Manufacturing Processes Laboratory provides students with the opportunity to study selected aspects of manufacturing processes. Students can set up and operate machines, manufacture simple parts (samples), measure process variables, and inspect manufactured elements. The MP Laboratory includes facilities to demonstrate and explore examples of machining processes and rapid prototyping.

Prerequisite: ME 329

*1 credit, Fall*

**ME 332: Instrumentation and Measurement Laboratory**

This 1 credit laboratory course covers basic topics in instrumentation and measurements in mechanical engineering. Measurement procedures are essential components of engineering practice, from the inception of new ideas through experiments to the manufacturing process through prototype testing to the final product delivery through quality control. The current emphasis on low or no fault production and maintenance requires increasingly more accurate and reliable measurements. Rapid development of new measurement devices and computer technology has provided a wide array of measurement tools to meet these new demands. Faced with a variety of options, engineers need to make judicious choices and to be able to balance device capability with its limitations. In this course students will conduct experiments, analyze the results, prepare reports and become familiar with several common types of measurement systems and devices for engineering measurements.

Prerequisites: ENG 100, PHYS 212

*1 credit*

**ME 336: Fluid Mechanics**

Properties of fluids; Hydrostatic pressure, forces on submerged surfaces; Fluid flow, continuity, momentum, and energy (Bernoulli) equations; Similitude and dimensional analysis; Flows in closed conduits (laminar and turbulent flow), major and minor losses; Flow over external surfaces; Open channel flow; Inviscid flow; Basic principles of compressible flow.

Prerequisites: ME 312

*3 credits, Fall*

**ME 337: Heat Transfer**

Concepts of heat transfer characteristics; Generalized heat conduction equation; Special cases of one or two dimensional steady and non-steady heat conduction; Graphical and numerical solutions of more complex problems; Electrical analogy; Free and forced heat convection in fluids; Fundamental principles of viscous fluid flow and boundary layer concepts;

Introduction to radiative properties/shape factors; heat exchange between ideal and non-ideal bodies; Introduction of heat exchangers.

Prerequisites: ME 312, ME 336

*3 credits, Fall*

### **ME 338: Fluid Mechanics Laboratory**

The lab includes the design and conducting of experiments and the analysis and interpretation of the experimental data. Laboratory: Three hours per week.

Prerequisite: ME 336

*1 credit, Spring*

### **ME 339: Heat Transfer Laboratory**

The lab includes the design and conducting of experiments and the analysis and interpretation of the experimental data. Laboratory: Three hours per week.

Prerequisite: ME 337

*1 credit, Spring*

### **ME 350: Engineering Design**

Elements of engineering design, and introduction to the design process. Development of awareness of multifaceted design issues, such as social, economic, technical and environmental concerns, and their interrelation. Communication of ideas and results. Course culminates in a formal written proposal for the Senior Design Lab project, including appropriate and detailed project management plan.

Prerequisites: Senior Standing, MATH 242, ME 207

*2 credits, Spring*

### **ME 354: Senior Design Laboratory in Mechanical Engineering**

Capstone project in Mechanical Engineering to be completed individually or in a team.

Follow-up course to ME 350. The student will complete the project while demonstrating the following abilities: identification of a design problem, formulation of a team for solution of that problem, complete a preliminary design. In addition the student should show proper concern for ethical issues in design, and demonstrate the ability to speak and write in clear, focused, well developed, logical and grammatically correct English. The student will be expected to demonstrate the ability to gather and synthesize information from various sources and use that information in presentations.

Prerequisites: Senior Standing, ME 350, ME 337, ME 360

*3 credits, Fall*

### **ME 360: Machine Design**

This course utilizes math and engineering science skills in the study of a variety of machine elements. Static and fatigue failure theories are used to design various machine elements and structures. Design of standard machine elements used in mechanical design are studied including: shafts, springs, screws, belts, chains, bolted joints, eccentrically loaded joints, welded joints, ball bearings, and spur and bevel gears.

Prerequisite: ME 214

*3 credits, Spring*

### **ME 403: Engineering Analysis**

The theory and application of matrix and vector algebra, first order, second order, and systems of ordinary differential equations, numerical methods, and Laplace transforms for engineering problems. Application of MATLAB software.

Prerequisite: MATH 304

*3 credits, Spring*

### **ME 405: Finite Element Method**

Basic approach to finite element method, and theoretical foundation of the method, including fundamentals of matrix algebra. Element formulation for solid mechanics and thermal analysis problems, by the direct method, potential energy and Galerkin's method of weighted residuals. Use of modern finite element analysis software such as ANSYS for analysis and design.

Prerequisites: MATH 304, ME 214, ME 337

*3 credits, Fall*

### **ME 407: Engineering Optimization**

Fundamentals of vector and matrix algebra, economic analysis, numerical methods for solution of linear and nonlinear equations. Basic theory, concepts and methods of engineering

optimization. Primary techniques from both classical and modern optimization as applied to engineering decision making.

Prerequisites: ME 214, ME 312, ME 403

*3 credits, Spring*

#### **ME 410: Thermal Systems Design**

This course reviews the fundamentals of thermal systems design and optimization. Basic considerations in thermal systems design will be discussed. General approach to system analysis, modeling, simulation and optimization will be introduced. Various optimization techniques and methods will also be presented and discussed.

Prerequisites: MATH 304, ME 312, ME 336, ME 337

*3 credits, Spring*

#### **ME 411: Alternative Energy Systems**

Various alternative energy systems are introduced, their operation discussed and their performance evaluated.

Prerequisites: ME 312, ME 336, ME 337

*3 credits*

#### **ME 427: Internal Combustion Engines**

This course introduces and reviews the fundamentals of internal combustion engines, including spark-ignition and compression-ignition engines. General engine systems and working cycles are described. Engine thermodynamics, gas exchange and combustion processes, engine fluid flow and heat transfer, and fuel injection systems are analyzed. The course also reviews the formation of engine exhaust emissions and methods for controlling the emissions of the internal combustion engines. Engine design and consideration of the effects of design and operating factors are introduced.

Prerequisite: ME 440

*3 credits*

#### **ME 440: Advanced Thermodynamics**

Application of first, second, and third law of thermodynamics, thermodynamic cycles, mixtures, chemical reactions, phase and chemical equilibrium, irreversibility and availability.

Prerequisite: ME 312

*3 credits, Fall*

#### **ME 441: Lubrication Systems Design**

Application of math & engineering science principles of lubrication in the design of mechanical systems. Understanding bearing classes & selection, lubricant properties, and bearing materials. Design concepts and engineering science in hydrodynamic bearings, gas lubricated bearings, elastohydrodynamic bearings, and antifriction bearings.

Prerequisites: ME 336, ME 360

*3 credits*

#### **ME 444: Advanced Strength of Materials**

Application of selected advanced engineering theories for analysis and design of structural components under static loading. Topics include: curved beams, inelastic action, beams on elastic foundation, plate theory, contact stresses; other topics as time and interest permit. Use of computer resources for solution of engineering design problems.

Prerequisite: ME 214

*3 credits, Spring*

#### **ME 461: Vibrations**

Modeling and analysis of linear and torsional mechanical vibratory systems. Study of free vibration and vibration damping. Properties and response for harmonic, periodic, shock, and random inputs. Solutions of systems with two or more degrees of freedom. Vibration of beams. Design for vibration control.

Prerequisites: ME 204, ME 403

*3 credits, Spring*

#### **ME 462: Energy Systems Design**

Basic principles and application of solar and biomass energy; fuel cell; basic principles and application of internal combustion engines, gas turbine engines and steam power plants.

Prerequisites: ME 312, ME 336, ME 337

*3 credits, Spring*

**ME 463: Dynamic Problems in Machine Design**

A project based course that applies the basic principles and methods of dynamics to the design of engineering systems. Special focus is on including the dynamic force analysis in designing translating, rotating, and reciprocating systems. Student will develop the ability to identify and solve problems associated with the dynamics and base design of a machine on the combined force analysis. Computer equipped with modern simulation software will be used to analyze dynamic behavior of the designed systems.

Prerequisites: ME 207, ME 208, ME 334, ME 360

3 credits, Spring

**ME 464: Thermal Environmental Engineering Design**

The engineering principles underlying the current practices of heating, ventilating, air conditioning and refrigeration design including absorption refrigeration; Design of central fan systems; Complete design of residential and industrial systems for heating and cooling requirements.

Prerequisites: ME 336, ME 337

3 credits, Fall

**ME 465: Computer Assisted Engineering**

Topics include the application of Matlab and Excel software to multi component mechanical and thermal/fluid system design, analysis and synthesis, static and transient systems. Mathematical techniques include nonlinear equation solution, nondimensional analysis, lumped vs. distributed models, optimization and design sensitivity analysis, probability and statistics, and Monte Carlo simulation. Examples are taken from industrial mechanical engineering problems of current interest.

Prerequisites: ME 204, ME 214, ME 337, ME 403

3 credits, Spring

**ME 466: Turbomachinery Design**

Application of general principles of fluid mechanics to fluid machinery design. Design principles of centrifugal and axial compressors, degree of reaction estimates, blade design, state performance calculations, axial flow turbines. Design calculations of blade stresses, disc stresses and thermal stresses.

Prerequisite: ME 312, ME 337, ME 336

3 credits, Fall

**ME 470: Heat Exchanger Design**

Application of general principles of heat transfer and fluid mechanics (pressure drop) in design of heat exchangers. Different types of heat exchangers will be studied in design-oriented projects.

Prerequisites: ME 336, ME 337

3 credits, Spring

**ME 490-499: Special Topics in Mechanical Engineering**

Special courses developed from student interest in all areas of mechanical engineering. Brief description of current content to be announced in schedule of classes.

Prerequisite: Permission of the Chairperson of the Department. May be taken more than once.

3 credits

**SEECs (101, 102, 201, 202, 301, 302, 401, 402): Professional and Personal Enrichment Seminar**

Course description is listed in Computer & Information Science section of the catalog.

0 credit, Fall and Spring

**Mechanical Engineering Curriculum**

(Numerals in front of courses indicate credits)

**FRESHMAN***First Semester*

- 3 History Without Borders/LHST 111
- 3 College Composition/LENG 111
- 3 Calculus 1/MATH 140
- 1 Digital Computer Usage/ME 205
- 1 Digital Computer Lab/ME 206

*Second Semester*

- 3 Critical Analysis & Comp/LENG 112
- 3 Calculus 2/MATH 141
- 3 Fund Physics 1: Mechanics/PHYS 210
- 3 Chemistry/CHEM 111
- 1 Chemistry Lab/CHEM 112

1	Engr. Computer Graphics Lab/ME 208	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar/ENG 100		
2	Engr Graphics/ME 207		
1	Technical Communication/SPCH 110		
17		16	
	<b>SOPHOMORE</b>		
	<i>First Semester</i>		<i>Second Semester</i>
3	Calculus 3/MATH 242	3	Dynamics/ME 204
3	Fund Physics 2: Fluids and Thermodynamics/PHYS 212	3	Differential Equations/MATH 304
3	Statics/ME 201	3	Engr. Thermodynamics/ME 312
3	Materials Science/ME 315	3	Calculus 4/MATH 243
3	Theology II Series/LTHE	3	Fund Physics 3: Electricity and Magnetism/PHYS 214
3	Introduction to Philosophy/LPHI 131	1	Physics Lab/PHYS 218
		1	Instrument and Measure Lab/ME 332
18		17	
	<b>JUNIOR</b>		
	<i>First Semester</i>		<i>Second Semester</i>
3	Strength of Materials/ME 214	1	Strength of Materials Lab/ME 215
3	Materials Processing/ME 329	1	Manufacturing Lab/ME 330
3	Fluid Mechanics/ME 336	3	Heat Transfer/ME 337
3	Advanced Thermodynamics/ME 440	1	Fluid Mechanics Lab/ME 338
3	Intro Electrical Engineering/ECE 231	3	Machine Design/ME 360
1	Intro Electrical Engineering Lab/ECE 232	3	Engineering Analysis/ME 403
		3	Project Economics/ECON285
		3	Philosophy II Series/LPHI
16		18	
	<b>SENIOR</b>		
	<i>First Semester</i>		<i>Second Semester</i>
3	System Dynamics & Control/ME 326	1	Automatic Control Lab/ME 327
1	Heat Transfer Lab/ME 339	3	Senior Design Lab in ME/ME 354
3	Engineering Design/ME 350	3	Technical Elective*
3	Vibrations/ ME 461	3	Technical Elective*
3	Technical Elective*	3	Literature Series/LENG
3	Theology or Phil III Series/LTHE or LPHI	3	Fine Arts Series/LFIN
1	Leadership Seminar		
17		16	

\* With Department Approval

\* The student with the academic advisor's instruction plans an individual course of study consistent with his career objectives. The suggested technical electives for the major options are as follows:

	<b>THERMAL SCIENCE</b>		<b>MACHINE DESIGN</b>
3	Thermal Systems Design	3	Computer Assisted Engineering
3	Computer Assisted Engineering	3	Engineering Optimization
3	Engineering Optimization	3	Finite Element Method
3	Finite Element Method	3	Advanced Strength of Materials
3	Energy Systems Design	3	Dynamic Problems in Machine Design
3	Environmental Engr. Design	3	Lubrication System Design
3	Heat Exchange Design	3	Vibrations
3	Turbomachinery Design		

**Mechanical Engineering Co-Op Professional Practice Option**

**Plan A**

Year 1	Fall 1	Spring 1	Summer Vacation
Year 2	Fall 2	Spring 2	4 month WP*
Year 3	Fall 3	4 month WP	Summer**
Year 4	4 month WP	Spring 3	4 month WP
Year 5	Fall 4	Spring 4	

**Plan B**

Year 1	Fall 1	Spring 1	Summer Vacation
Year 2	Fall 2	4 month WP	Summer**
Year 3	4 month WP	Spring 2	4 month WP
Year 4	Fall 3	Spring 3	4 month WP
Year 5	Fall 4	Spring 4	

**Plan C**

Year 1	Fall 1	Spring 1	Summer Vacation
Year 2	Fall 2	Spring 2	4 month WP
Year 3	Fall 3	Spring 3	4 month WP
Year 4	Fall 4	4 month WP	Summer**
Year 5	4 month WP	Spring 4	

\*Work Period

\*\*Liberal Studies Core Courses

**Notes:**

- (1) Fall and Spring follow the regular engineering schedule.
- (2) For maximum financial aid, 12 credits of The Liberal Studies Core Courses should be taken during the 4 month summer session listed.
- (3) One credit Co-Op seminar (ME 296) is to be taken during the Spring Semester of freshman year.
- (4) Students should register for zero credit Co-Op Placement (ENG 399) for each work period.

**Five Year Program - Mechanical Engineering/MBA**

The School of Engineering and Computer Science in cooperation with the Dahlkemper School of Business offers a special program for qualified undergraduates leading to a Bachelor of Science in Mechanical Engineering Degree and a Master of Business Administration Degree. The program may be completed in five years of full time study (includes three summers).

**Five Year Mechanical Engineering/MBA Curriculum**

(Numerals in front of courses indicate credits)

**FRESHMAN**

*First Semester*

3	History Without Borders/LHST 111
3	College Composition/LENG 111
3	Calculus 1/MATH 140
1	Digital Computer Usage/ME 205
1	Digital Computer Lab/ME 206
2	First-Year Seminar/ENG 100
2	Engr Graphics/ME 207
1	Engr Computer Graphics Lab/ME 208
1	Technical Communication/SPCH 110

*Second Semester*

3	Crit Analysis & Comp/LENG 112
3	Calculus 2/MATH 141
3	Fund Physics 1: Mechanics/PHYS 210
3	Chemistry/CHEM 111
1	Chemistry Lab/CHEM 112
3	Sacred Scriptures/LTHE 121

## SOPHOMORE

*First Semester*

3	Calculus 3/MATH 242
3	Fund Physics 2: Fluids and Thermodynamics/PHYS 212
3	Statics/ME 201
3	Materials Science/ME 315
3	Theology II Series/LTHE
3	Introduction to Philosophy/LPHI 131

18

*Second Semester*

3	Dynamics/ME 204
3	Differential Equations/MATH 304
3	Engr. Thermodynamics/ME 312
3	Calculus 4/MATH 243
3	Fund Physics 3: Electricity and Magnetism/PHYS 214
1	Physics Lab/PHYS 218
1	Instrument and Measure Lab/ME 332

17

## JUNIOR

*First Semester*

3	Strength of Materials/ME 214
3	Materials Processing/ME 329
3	Fluid Mechanics/ME 336
3	Advanced Thermodynamics/ME 440
3	Intro Electrical Engineering/ECE 231
1	Intro Electrical Engineering Lab/ECE 232

16

*Second Semester*

1	Strength of Materials Lab/ME 215
1	Manufacturing Lab/ME 330
3	Heat Transfer/ME 337
1	Fluid Mechanics Lab/ME 338
3	Machine Design/ME 360
3	Engineering Analysis/ME 403
3	Project Economics/ECON285
3	Philosophy II Series/LPHI

18

## SUMMER

3	Financial Accounting/GMBA 501
3	Management Concepts/GMBA 531

6

## SENIOR

*First Semester*

3	System Dynamics & Control/ME 326
1	Heat Transfer Lab/ME 339
3	Engineering Design/ME 350
3	Vibrations/ ME 461
3	Technical Elective*
3	Theology or Phil III Series/LTHE or LPHI

1 Leadership Seminar

17

*Second Semester*

1	Automatic Control Lab/ME 327
3	Senior Design Lab in ME/ME 354
3	Technical Elective*
3	Technical Elective*
3	Literature Series/LENG
3	Fine Arts Series/LFIN

16

\* With Department Approval

\*The student with the academic advisor's instruction plans an individual course of study consistent with his career objectives. The suggested technical electives for the major options are as follows:

**THERMAL SCIENCE**

3	Thermal Systems Design
3	Computer Assisted Engineering
3	Engineering Optimization
3	Finite Element Method
3	Energy Systems Design
3	Environmental Engr. Design
3	Heat Exchange Design
3	Turbomachinery Design

**MACHINE DESIGN**

3	Computer Assisted Engineering
3	Engineering Optimization
3	Finite Element Method
3	Advanced Strength of Materials
3	Dynamic Problems in Machine Design
3	Lubrication System Design
3	Vibrations

**Waive**

GMBA 521 Quantitative Techniques

GMBA 525 Statistical Analysis

**FIFTH YEAR**

Summer MBA Courses

Fall MBA Courses

Spring MBA Courses

Summer MBA Courses

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**BIOMEDICAL ENGINEERING**


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DAVIDE PIOVESAN, Ph.D., *Program Director*FACULTY: *Associate Professor:* Davide Piovesan. *Assistant Professors:* Anne M. Schmitz, Saeed Tiari.**The Program:**

The goal of the Biomedical Engineering (BME) program is to provide students with fundamental engineering design and analysis skills to solve medical and biological problems. Biomedical Engineers work with health care professionals to design medical devices and equipment that enhance quality of life for their patients by applying engineering product and process design strategies to medical problems. The program is accredited by Engineering Accreditation Commission of ABET, <http://www.abet.org>.

**Program Objectives:**

- a. Gannon graduates apply and synthesize information to become leaders in their profession
- b. Gannon graduates participate in scholarly and/or professional development activities within their discipline as a commitment to lifelong learning
- c. Gannon graduates share the value of their profession in the community by participating in educational outreach activities
- d. Gannon graduates show an appreciation for global innovation by integrating new technologies in their workplace

**Student Outcomes:**

Student learning outcomes for the Gannon BME department are:

- a. An ability to apply knowledge of mathematics, science and engineering
- b. An ability to design and conduct experiments as well as to analyze and interpret data
- c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- d. An ability to function on multidisciplinary teams
- e. An ability to identify, formulate, and solve engineering problems
- f. An understanding of professional and ethical responsibility
- g. An ability to communicate effectively
- h. The broad education necessary to understand impact of engineering solutions in a global, economic, environmental and societal context
- i. A recognition of need for, and ability to engage in life-long learning
- j. A knowledge of contemporary issues
- k. An ability to use techniques, skills, and modern engineering tools necessary for engineering practice
- l. An ability to apply in depth knowledge of biology
- m. An ability to apply knowledge of statistics



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## COURSE DESCRIPTIONS:

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**BME 307: Bioengineering Research Methods:**

This course is designed to provide an elaborate exposure to wide variety of elements and challenges involved in engineering and life science research. Through the trajectory of scientific proposal writing, a multitude of components including planning, execution and analysis of experiments will be covered. Additionally, the course packages other critical aspects such as hands-on lab experience and rotations, effective public presentation and technical writing, ethics, safety etc. providing a comprehensive awareness of research.

Prerequisite: ME 205, ME 206, ME 207, ME 208

*2 credits*

**BME 308: Research projects in Clinical Biomechanics:**

This course is designed to provide an elaborate exposure to clinical experimentation in engineering and life science research. Through the trajectory of development of experimental protocol, consent documents, and IRB applications, a multitude of components including planning, execution and ethical concerns of experiments will be covered. Additionally, the course packages other critical aspects such as effective public presentation and technical writing, ethics, safety etc. providing a comprehensive awareness of research.

Co-requisite: BME 307, CITI Training

*1 credit*

**BME 350: Biomedical Engineering Design**

Elements of engineering design and introduction to the design process. Application of computer-aided methods, such as use of Excel, Matlab, and/or Pro/ENGINEER.

Development of awareness of multifaceted design issues, such as social, economic, technical and environmental concerns, and their interrelation. Communication of ideas and results. Course culminates in a formal oral and written proposal for the Senior Design project.

Prerequisites: MATH 242, ME 207, BME 410

*2 credits*

**BME 354: Senior Design Lab in BME**

Capstone design project for senior students to be completed individually or by a team. This course is a follow-up course to BME 350. Design projects are to be selected and defined as part of the course work in BME 350. These projects will then have to be completed in BME 354. Lectures on various engineering issues including, but not limited to safety, environmental concerns and professional ethics will be given throughout the course. Progress reports and meetings are scheduled and a formal engineering report will be required for all projects, in addition to a final oral presentation for each project.

Prerequisite: BME 350, BME 420

*3 credits*

**BME 410: Biomaterials**

Introduction to the behavior and application of biomaterials used in prosthetic devices, dentures, arterial grafts, orthopedic implants and other medical applications. Study of surface and mechanical properties. Biocompatibility, biomaterial/tissue interactions, and other factors involved in the design of implants, biosensors and neuroprostheses are considered. The course will also include a limited review of properties of cells, nucleic acids, proteins and immunology as these topics relate to biomaterials.

Prerequisite: ME 315, BIOL 122, BIOL 123

*3 credits*

**BME 420: Biomechanics**

Mechanics of deformable bodies. Mechanical properties of biomaterials, bone, ligaments, muscle. Uniaxial tension, compression, bending, and torsion applied to orthopedic biomechanics. Rigid body planar kinematics and dynamics, with application to the biomechanics of walking, running, cycling, and other athletic activities. Also studies functions of orthotics and prostheses, including design considerations.

Prerequisites: Either (BIOL 124) or (BIOL 117), ME 204, ME 214

*3 credits*

**BME 430: Biomedical Systems Modeling and Analysis**

This course introduces the techniques for analysis and modeling of biological and

physiological systems including musculoskeletal and cardiovascular systems, cells, tissues, diffusion systems, and other organ systems. Students will derive mathematical models of the systems and apply them to generate simulation data. Time and frequency domain issues will be addressed. Students will use Matlab computer methods to solve problems in data analysis, system identification, and model validation. Basic control principles will be introduced.

Prerequisites: ECE 231 (may be taken concurrently), BME 420

*3 credits*

#### **BME 440: Bioengineering Lab**

Laboratory experiences with measurements for devices including the application of statistical techniques.

Prerequisites: BIOL 117 or BIOL 124, ME 205, ME 206

*1 credit*

#### **BME 450: Computer Simulation of Human Movement**

In this course, students will learn how to simulate human movement (e.g. walking, running) to obtain estimates of immeasurable quantities (e.g. muscle forces). Topics to be covered include inverse kinematics, inverse dynamics, and muscle-actuated forward dynamic simulations. The simulations will be performed using both commercial/open-source software and user-generated code to understand the calculations done by the software.

Prerequisites: ME 201, ME 204, ME 205, ME 206

*2 credits*

#### **BME 451: Motion Capture Lab**

Laboratory experiences with measurements for motion capture and an instrumented gait analysis. Various motion capture modalities (e.g. markers versus markerless) will be explored as well as other pieces of equipment that are used in conjunction with motion capture (e.g. EMG).

Prerequisites: ME 201, ME 204, ME 205, ME 206

*1 credit*

#### **BME 454: Tribology**

This course addresses the design of tribological systems: the interfaces between two or more bodies in relative motion. Fundamental topics include: geometric, chemical, and physical characterization of surfaces; friction and wear mechanisms for metal, polymers, and ceramics, including abrasive wear, delamination theory, tool wear, erosive wear, wear of polymers and composites; and boundary lubrication and solid-film lubrication. The course also considers the relationship between nano-tribology and macro-tribology, rolling contacts, tribological problems in magnetic recording and electrical contacts, and monitoring and diagnosis of friction and wear. Case studies are used to illustrate key points.

Prerequisites: MATH 243, ME 315

*3 credits*

#### **BME 460: Biosignal Processing**

In this course, students will learn how to design and choose a filter for processing signals commonly collected in Biomedical Engineering (e.g. electromyography, electrocardiogram, forceplate data). Topics to be covered include FIR filters, IIR filters, Butterworth filters, and residual analysis. Signal processing will be performed using user-generated code to understand how these filters are practically implemented.

Prerequisites: ME 205, ME 206

*3 credits*

#### **BME 471: Continuum Biomechanics**

This course is concerned with the study of continuum mechanics applied to biological systems. This subject allows the description of when a bone may fracture due to excessive loading, how blood behaves as both a solid and a fluid, down to how cells respond to mechanical forces that lead to changes in their behavior.

Prerequisite: ME214, ME336, ME 205, ME206

*3 credits*

#### **BME 479: Biomedical Robotics and Biomimetics**

Biomedical Robotics focuses on activities such as rehabilitation, training/simulation, manipulation, surgery. These areas currently depend on labor intensive manual procedures performed by highly trained professionals. The goal of the course is to analyze how to improve and transform these operations through teleoperation and automation. Furthermore,

several aspects of biomimetics will be discussed during the course. Biomimetics uses nature as an example to build robots that can swim like a fish, fly like a bird or insect, and walk on rough terrain as many quadrupeds.

Prerequisites: ME 205, ME 206

3 credits

#### **BME 480: Haptics**

In this course, students will learn about tactile sensors, how they are programmed, and real world applications of these sensors. Topics to be covered include tactile sensors, piezoelectric sensors, and robotic surgery.

Prerequisites: ME 205, ME 206, BIOL 117 or BIOL 124

3 credits

#### **BME 490-499: Special Topics in Biomedical Engineering**

Special courses developed for students interested in all areas of biomedical engineering. A brief description of current content will be announced in the schedule of classes. Topics can include but are not limited to: biomedical robotics, biomimetic, rehabilitation engineering, continuum mechanics of biological tissue, tissue engineering, biomedical imaging, hemodynamics, motor control. May be taken more than once.

Prerequisite: Permission of the Chairperson of the department.

1-3 credits

### **Biomedical Engineering Curriculum**

(Numerals in front of courses indicate credits)

FRESHMAN	
<i>First Semester</i>	
3 History Without Borders/LHST 111	3 Critical Analysis and Comp/
3 College Composition/LENG 111	LENG 112
3 Calculus 1/MATH 140	3 Calculus 2/MATH 141
1 Digital Computer Usage/ME 205	3 Fund. Physics 1: Mechanics/PHYS 210
1 Digital Computer Lab/ME 206	3 General Chemistry 1/CHEM 111
2 First-Year Seminar/ENG 100	1 General Chemistry 1 Lab/CHEM 112
2 Engineering Graphics/ME 207	3 Molecular and Cell Biology/BIOL 122
1 Engineering Computer Graphics Lab/	1 Molecular and Cell Biology Lab/
ME 208	BIOL 123
1 Technical Communication/SPCH 110	
17	17
SOPHOMORE YEAR	
<i>First Semester</i>	
3 Calculus 3/MATH 242	3 Dynamics/ME 204
3 Fund Physics 2: Fluids and	3 Differential Equations/MATH 304
Thermodynamics/PHYS 212	3 Engr Thermodynamics/ME 312
3 Statics/ME 201	3 Calculus 4/MATH 243
3 Materials Science/ME 315	3 Sacred Scriptures/LTHE 121
3 Animal Form & Function/BIOL 124	3 Biomaterials/BME 410
1 Animal Form & Function Lab/	
BIOL 125	
16	18
JUNIOR YEAR	
<i>First Semester</i>	
3 Strength of Materials/ME 214	3 Engineering Analysis/ME 403
3 Fluid Mechanics/ME 336	3 Fund Physics 3: Electricity and
3 Theology II Series/LTHE	Magnetism/PHYS 214
2 Comp Sim of Human Movement/	3 Technical Elective
BME 450	1 Strength of Materials Lab/ME 215

1	Motion Capture Lab/BME 451	3	Philosophy II Series/LPHI
3	Intro Philosophy/LPHI 131	2	Bioengineering Research Method/ BME 307
3	Fine Arts Series/LFIN	1	Res Proj in Clin Biomech/BME 308
		1	Instrumentation Lab/ME 332
18		17	
SENIOR YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Intro to Electrical Eng/ECE 231	3	Senior Design Lab in BME/BME 354
1	Intro to EE Lab/ECE 232	3	Technical Elective
2	Biomedical Engineering/BME 350	3	Social Science
1	Bioengineering Lab/BME 440	3	Biomedical Systems Modeling/ BME 430
3	Technical Elective	3	Literature Series/LENG
3	Theology or Philosophy III Series/ LTHE or LPHI		
3	Biomechanics/BME 420		
1	Leadership Seminar		
17		15	

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## SOFTWARE ENGINEERING (SE)

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The Software Engineering (SE) major is designed to produce graduates who are capable of developing high-quality software systems with a focus on the Mobile Application domain. Gannon software engineers learn how to apply the principles of computer science, engineering, and analysis to the design, creation, testing, and evaluation of software and digital systems. The program includes developing technical competency as well as the leadership and communication skills necessary to analyze, design, verify, validate, implement, and maintain software systems. As the societal dependence on software systems grows, the students will have the foundations necessary to face ethical dilemmas and to act responsibly as part of their professional training.

The Software Engineering program offers the opportunity for a dual degree with Esslingen University of Applied Sciences in Esslingen, Germany. The student will earn a B.S. in Software Engineering from Gannon University and B. Eng. in Software Technology from Esslingen University of Applied Sciences (HE). The mutual courses which comprise this program are offered in English at both universities. Prior to their year abroad, students from GU must complete two years of Software Engineering or Computer Science studies at Gannon with a minimum GPA of 3.0 and German language preparation to support finding an internship in Germany. As part of their B. Eng degree work in Germany, students are required to complete an internship/practical training of at least 100 working days. These are normally paid positions and HE will support students in finding placements at companies with whom the university has a partnership. Students interested in this dual degree program should discuss their interest with the Department Chair as soon as possible in order to properly plan their classes.

### Aims and Objectives:

The SE major prepares its graduates to achieve significant career and professional accomplishments in four ways: as employable and accountable professionals, competent problem solvers, and selfless contributors.

As employable professionals, the SE graduates are well prepared for employment or graduate work in their field, and to continue working in the chosen or related fields. As accountable professionals, the graduates are accountable for their professional roles, and as such, pursue

their profession in an ethical manner. This includes the responsibility for, or leadership in research/development projects or teams, aspects of major system components, or business development work. As competent problem solvers, our graduates apply current computing technology knowledge, skills, techniques and methods to develop effective solutions for problems, improve product, process and/or organizational elements, or to innovate. As selfless contributors, the graduates voluntarily give their time, talent, and/or money to their community, profession, church and/or society.

### **Opportunities:**

Software engineers specialize in the specification, design and development of quality software systems. Software systems now serve in life-critical as well as business-critical domains, and require professionals who are prepared to develop systems in a reliable manner, balancing business needs, technology, and human factors in order to yield a successful product. Software engineering continues to be listed as one of the fastest growing occupations.

### **Program Outcomes:**

Gannon's Software Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. Similarly, Gannon's Software Engineering program is built around the successes enjoyed by the successful Computer Science and Engineering programs whose students enjoy a long history of success in solving problems and building systems.

The program has a strong focus on problem-solving beginning with the very first course in computing (*CIS 180 Problem Solving & Computer Programming*) and carried through into the senior design sequence (*CIS 457/458 Senior Design*). Throughout the learning process, students learn how to effectively define and represent both problems and the solutions needed to solve those problems. Throughout the course of study, students learn to and practice making ethical decisions.

All students learn the art and science of specifying, designing, building and testing software for high-quality systems. In addition, they learn how to utilize information and computer technology, while developing and maintaining a comprehension of the changing technology used in computer-based systems. Through this learning process, we expect students to own a desire for continuous improvement and demonstrate effective verbal, written, and listening communication skills.

Specifically, Software Engineering students completing our program learn to:

- **Realize and manage** high quality software development lifecycle processes in one or more application domains
- **Apply** discrete mathematics, computer science and engineering principles to system development

### **Integration:**

One of the hallmarks of Gannon's SE degree is its integration with traditional liberal-studies education. Gannon's SE majors not only learn computing well, but also learn how to synthesize, think critically, and communicate well. In the program, bridging traditional courses like writing, philosophy, theology and ethics begins in the *CIS 103 CIS First-Year Seminar*, and continues throughout the program, culminating in the *CIS 457/458 Senior Design* sequence.

All CIS course descriptions are provided in section *Computer and Information Science*

**CIS Core Courses**

CIS 103	First-Year Seminar	CIS 302	CIS Professional Seminar
CIS 180/181	Problem Solving & Computer Programming and Lab	CIS 303	CIS Leadership Seminar
CIS 182/183	Object-Oriented Prog. and Lab	CIS 350	Req. & Project Management
CIS 219	Programming in UNIX	CIS 355	Dynamic Web Development
CIS 255	Database Management Sys.	CIS 457	Senior Design I
CIS 290	Introduction to Networks	CIS 458	Senior Design II Lab

**Software Engineering Courses**

CIS 220	Data Structures & Algorithms	CIS 326	Formal Methods in Software Development
CIS 223	Algorithm Development Lab		
CIS 239	The User Experience	CIS 330	Operating Systems
CIS 277	Mobile Application Dev. I	CIS 377	Mobile Application Dev. II
CIS 287	Object-Oriented Design Lab	CIS 387	System & Network Security
CIS 315	Software Engineering	CIS 390	Distributed Programming
CIS 317	Software Maint. & Deployment	CIS 415	Software Testing & Quality Assurance
CIS 318	Software Architecture	ECE 337	Computer Architecture
		MATH 310	Number Theory & Cryptography

**Science Electives**

Students choose one science elective with approval of their academic advisor. These may not be a course that is a prerequisite for other required courses in the major. Science courses with associated labs qualified for majors or minors in that discipline may be used as science electives.

**Suggested Science Course Sets**

To complete their degree, students choose a science course set, a two-course sequence including labs, 8 credits total with their academic advisor's approval. Suggested science sets are two-course sequences in a particular science typically taken by software engineering majors and include an appropriate experimental (laboratory) component.

1.	CHEM 111 General Chemistry I, & CHEM 112 Lab	CHEM 114 General Chemistry II, & CHEM 115 Lab
2.	PHYS 210 Fund of Physics 1: Mechanics PHYS 211 Fund of Physics 1: Lab	PHYS 212 Fund of Physics 2: Fluids and Thermodynamics PHYS 213 Fund of Physics 2 Lab
3.	BIO 122 Molecular Cell Biology, & BIO 123 Molecular Cell Biology Lab	BIO 124 Biology of Organisms, & BIO 125 Biology of Organisms Lab

**Software Engineering Curriculum**

**FRESHMAN**

*Fall*

- 2 First-Year Seminar/CIS 103
- 2 Prob. Solv. & Comp. Prog./CIS 180
- 1 Prob. Solv. & Comp. Prog. Lab/CIS 181
- 3 Calculus 1/MATH 140
- 3 Introduction to Philosophy/LPHI 131

*Spring*

- 2 Object-Oriented Prog./CIS 182
- 1 Object-Oriented Prog. Lab/CIS 183
- 3 Calculus 2/MATH 141
- 3 Critical Analysis & Comp./LENG 112

3 College Composition/LENG 111  
 3 Sacred Scripture/LTHE 121

17

#### SOPHOMORE

##### Fall

3 Programming in UNIX/CIS 219  
 3 Data Structures & Algorithms/CIS 220  
 3 The User Experience/CIS 239  
 3 Intro. Networks/CIS 290  
 3 Discrete Mathematics 1/MATH 222  
 3 Project Economics/ECON 285

18

#### JUNIOR

##### Fall

3 Software Maint. & Deploy./CIS 317  
 3 Operating Systems/CIS 330  
 3 Mobile Application Dev. II/CIS 377  
 3 Probability & Statistics 1/MATH 312  
 3 Theology II Series/LTHE

15

#### SENIOR

##### Fall

3 Senior Design I/CIS 457  
 3 Formal Methods in Software/CIS 326  
 3 Software Testing & Quality Assurance/  
 CIS 415  
 3 System and Network Security/CIS 387  
 3 Fine Arts Series/LFIN

15

3 History of the West & the World/  
 LHST 111

3 Science 1  
 1 Science 1 Lab

16

##### Spring

3 Database Mgmt. Systems/CIS 255  
 1 Algorithm Dev. Lab/CIS 223  
 3 Discrete Mathematics 2/MATH 223  
 3 Mobile Application Dev. I/CIS 277  
 1 Object-Oriented Design Lab/CIS 287  
 3 Philosophy II Series/LPHI  
 3 Science 2  
 1 Science 2 Lab

18

##### Spring

1 CIS Professional Seminar/CIS 302  
 1 CIS Leadership Seminar/CIS 303  
 3 Software Engineering/CIS 315  
 3 Software Architecture/CIS 318  
 3 Req. & Project Management/CIS 350  
 3 Theology or Philosophy Series III/  
 LTHE or LPHI  
 3 Computer Architecture/ECE 337

17

### Dual Computer Science/Software Engineering Curriculum

#### FRESHMAN

##### Fall

2 First-Year Seminar/CIS 103  
 2 Prob. Solv. & Comp. Prog./CIS 180  
 1 Prob. Solv. & Comp. Prog. Lab/CIS 181  
 3 Calculus 1/MATH 140  
 3 Introduction to Philosophy/LPHI 131  
 3 College Composition/LENG 111  
 3 Sacred Scripture/LTHE 121

17

##### Spring

2 Object-Oriented Prog./CIS 182  
 1 Object-Oriented Prog. Lab/CIS 183  
 3 Calculus 2/MATH 141  
 3 Critical Anal. & Comp. /LENG 112  
 3 History of the West & the World/  
 LHST 111  
 3 Fund of Physics 1: Mechanics/  
 PHYS 210  
 1 Fund of Physics 1 Lab/PHYS 211

16

SOPHOMORE	
<i>Fall</i>	<i>Spring</i>
3 Programming in UNIX/CIS 219	3 Database Mgmt. Systems/CIS 255
3 Data Structures & Algorithms/CIS 220	1 Algorithm Dev. Lab/CIS 223
3 The User Experience/CIS 239	3 Discrete Mathematics 2/MATH 223
3 Intro. Networks/CIS 290	3 Mobile Application Dev. I/CIS 277
3 Discrete Mathematics 1/MATH 222	1 Object-Oriented Design Lab/CIS 287
3 Project Economics/ECON 285	3 Philosophy II Series/LPHI
	3 Fund of Physics 2: Fluids and Thermodynamics/PHYS 212
	1 Fund of Physics 2 Lab/PHYS 213
18	18
JUNIOR	
<i>Fall</i>	<i>Spring</i>
3 Software Maint. & Deploy./CIS 317	1 CIS Professional Seminar/CIS 302
3 Operating Systems/CIS 330	1 CIS Leadership Seminar/CIS 303
3 Dynamic Web Development/CIS 355	3 Software Architecture/CIS 318
3 Mobile Application Dev. II/CIS 377	3 Software Engineering/CIS 315
3 Probability & Statistics 1/MATH 312	3 Req. & Project Mgmt./CIS 350
3 Theology II Series/LTHE	3 Theology or Philosophy Series III/ LTHE or LPHI
	3 Computer Architecture/ECE 337
18	17
SENIOR	
<i>Fall</i>	<i>Spring</i>
3 Senior Design I/CIS 457	3 Senior Design II Lab/CIS 458
3 Formal Methods in Software/CIS 326	3 Distributed Programming/CIS 390
3 Software Testing & Quality Assurance/ CIS 415	3 Literature Series/LENG
3 Comparative Languages/CIS 360	3 Fine Arts Series/LFIN
3 System and Network Security/CIS 387	3 Math/Science Elective
3 Technical Elective	3 Number Theory & Cryptography/ MATH 310
18	18



# College of Humanities, Education, and Social Sciences

LINDA M. FLEMING, Ph.D., *Dean*

LORI D. LINDLEY, Ph.D., *Associate Dean*

The College of Humanities, Education and Social Sciences (CHESS) consists of a community of student and faculty and staff dedicated to the academic growth and lifelong learning of its members. We seek to provide the highest quality professional and pre-professional preparation in the context of a broad liberal education in the Judeo-Christian tradition. We continue to be convinced that such an education, rooted in the liberal arts and humanities and undergirded by a foundation of moral and ethical teachings, provide the foundation for a productive, rewarding and ethical life. The richly diverse educational programs within the College include a focus on integrating knowledge and on developing student abilities in critical thinking, communication, information literacy and the application of knowledge across a wide range of social, professional and learning contexts. We are also committed to providing students with opportunities to understand cultural, international and global experiences in order to be informed and effective global citizens. Students from the College of Humanities, Education and Social Sciences are prepared to pursue a wide variety of professions, graduate programs and forthcoming careers of the future.

The College is composed of the **School of Humanities and Social Sciences** and the **School of Education**. Majors are offered in 29 baccalaureate degree programs and 4 two-year, associate degree programs. Students are also offered a wide variety of interdisciplinary learning opportunities as well minor programs and certificates to complement their selected programs of study. The College is committed to promoting an engaged learning environment with students participating in a collaborative learning process; including student research and practical experiences through service learning, internships and cooperative education.

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## SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

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### **Comprehensive Education**

The professional lives of this year's freshmen will extend through the mid-21st century. Given the rapidity of change today, it is almost impossible to predict what professions will be in demand that far into the future. Certainly many of the careers that will be in demand do not yet exist. Furthermore, the U.S. Department of Labor estimates that this generation of college students will change careers on the average of three times. Thus it is important to provide a broad, comprehensive education, fostering skills that will not become obsolete and will be transferable from one profession to another.

### **Skills for a Lifetime**

Communication skills are vital in almost all careers and professions and are central to the development of that capacity for lifelong learning that the 21st century demands. The refinement of our students' reading, writing, speaking, and listening skills along with facility in the use of communication technologies is among the most important objectives of our programs in the Humanities.

Challenging yet reasonable reading assignments are designed to inform, enhance

understanding, and stimulate curiosity. Students come to regard books and professional journals as tools for their continued learning after graduation. It is important to note that they learn to read and understand publications based on sophisticated research methodologies and quantitative analyses.

While the English Department has special responsibilities in the teaching of writing and our School of Communication and the Arts offers work in introductory and advanced public speaking, all departments and programs make extensive use of writing assignments as well as formal and informal opportunities for the refinement of oral communication. Essay examinations, research papers, journals, speeches and debates enhance students' abilities to "think on their feet" and communicate well. Many classes make use of sophisticated electronic audio and video equipment and integrate modern computer technology into the curriculum. Increasingly, students and faculty enjoy connectivity with one another and the world outside the classroom through the use of the Internet, video conferencing, social media and the like.

Equally important are the skills of analysis and synthesis, as well as the power to think critically and independently and to make sound ethical decisions and judgments. Courses in the Humanities and Social Sciences complement the University's Liberal Studies Core to help our students hone these abilities. Quantitative as well as qualitative reasoning is encouraged, and all curricula in the Humanities require at least one math course.

The typical class size permits discussions in which students have the opportunity to express their ideas. Group work, class discussion, and other means of interactive learning encourage students to take responsibility, learn teamwork, and become active rather than passive learners.

### **International Education**

Our students will live in a world community and compete in a global economy. Thus Humanities is committed to the notion that we are all international students; that we must know and appreciate our culture as well as those of others; and that we must learn to speak and understand a foreign language.

The Department of Foreign Languages and Cultures is the heart of international education at Gannon, and every humanities student in a four-year major must take a minimum of six credits of a foreign language. Students are strongly advised to fulfill this requirement no later than the fall semester of the junior year. International education is additionally enhanced by courses in history, political science, anthropology, sociology, geography, philosophy and literature.

### **Fields of Specialization**

In addition to career preparation through a comprehensive, international education, the Humanities offers several majors through which students develop the specialized skills of particular professions. The School of Communication and the Arts prepares students for careers in radio and television, while English majors may explore career options in journalism and other types of professional writing. Through programs in political science, sociology, social work, psychology and criminal justice, students may develop careers in public service or the private sector. The legal profession is served by the Pre-Law and Paralegal Programs, while the International Studies Program, leads to careers in government, business and industry. Future teachers participate in these programs, since students pursuing careers in secondary education major in the subjects they wish to teach.

### **Integration of Knowledge**

One of the hallmarks of the Humanities education is a commitment to the integration of knowledge, and a focus on the interrelationships of the various subject areas. The Departments of Philosophy and Theology play a central role in the synthesizing effort, and

also perform a special function in the ethical education of Gannon students. They help to develop professionals who are capable of distinguishing between right and wrong in complex situations, enabling students to become moral leaders in our society.

### **Fine Arts**

Humanities is committed to instilling appreciation of the arts and fostering the development of aesthetic values in our students, including a variety of Fine Arts courses offered through the School of Communication and the Arts. A Fine Arts minor is available. The Schuster Theatre, the Schuster Art Gallery and student poetry readings sponsored by the Department of English provide students with opportunities to showcase their talent and to appreciate the work of their peers. Field trips to the internationally renowned Cleveland Museum of Art and the Albright Knox Gallery in Buffalo, the Erie Art Museum, Erie Philharmonic Orchestra, and the Erie Chamber Orchestra are extraordinarily beneficial to students' cultural growth.

### **Experiential Education**

In the Humanities it is accepted that a great deal of student learning can and should take place outside the classroom. We are committed to the idea of the integration of experiential education throughout the curriculum. Students are encouraged to engage in a wide range of activities in service learning, fieldwork, practical research, internships, and cooperative education. This is facilitated by Gannon's location in Erie's center, close to City Hall, the County and Federal courthouses, other government offices, numerous businesses, banks, health facilities and non-profit organizations.

### **Co-Curricular Activities**

Many activities are sponsored which complement formal course work and provide opportunities for student leadership. Humanities students organize and lead Gannon's Model United Nations each year, and play leadership roles in student publications such as the literary magazine, Totem, and the student newspaper, The Gannon Knight. Cocurricular activities provide the opportunity for students to meet and interact with elite members of various professions and disciplines.

### **The Faculty**

Composed of scholarly teachers whose research is designed primarily for the benefit of the education of our students, the faculty also contributes to their disciplines through research publication, and to the community through professional service. First and foremost, however, they are teachers who challenge and support our students. They are living proof that it is both possible and desirable to be life-long learners. The faculty recognize their responsibility to nurture the curiosity and sense of wonder of youth, and are committed to the idea that we are educating rather than just training our students. More importantly, they are committed to preparing our students to educate themselves throughout their lives. An education in the Humanities is only the beginning for our students.

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## **ADVERTISING COMMUNICATION**

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*(School of Communication and the Arts)*

ANNE O'NEILL, *Program Director*

FACULTY: *Professor: Michael DeSanctis. Associate Professor: Shawn Jeffery Clerkin. Assistant Professor: Jennifer Allen-Catellier, Frank Garland, Mary Carol Gensheimer. Instructors: David Blaetz, Anne O'Neill.*

## Program Description

The art of advertising has been a part of the selling process for as long as people and organizations have exchanged desired products and services. Today, with a multitude of media attempting to reach targeted audiences businesses and organizations need to take an integrated approach to the promotions industry. An integrated marketing communication effort combines the promotional mix efforts of advertising, public relations, direct marketing, sales promotion and Internet/social media to provide one clear, consistent and targeted message.

Gannon's Advertising Communication program, housed in the university's School of Communication and the Arts, provides students an integrated approach with classes, assignments, projects, practica and a guaranteed internship that draw on all of the promotional efforts to ensure knowledge and skills necessary for career success in the fast-changing world of the integrated promotional industries.

The Advertising Communication program offers two options: the Advertising track and The Public Relations track.

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## COURSE DESCRIPTIONS:

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### **ADVC 101: Introduction to Integrated Marketing Communication**

Students will be introduced to the concept of integrated marketing communication (IMC), where the promotional elements of marketing are incorporated into a multidisciplinary approach. An overview of each of the promotional mix elements – general advertising, public relations, direct marketing (including Internet marketing) and sales promotion – is presented along with the concept of integration of all the elements for successful promotional management. Marketers in business today need to be proactive while having an understanding of all stakeholders, technologies and communication opportunities involved. IMC addresses these issues while this course provides the rudimentary knowledge to prepare students for future study and experiences in a specialized area. *3 credits*

### **ADVC 325: Emerging Media Advertising**

This course will focus primarily on the Internet as an emerging advertising medium. Traditional as well as new developing strategies for the creation and dissemination of persuasive messages, through online advertising campaigns will be analyzed. *3 credits*

### **ADVC 340: Fundamentals of Advertising**

This course explores the fundamentals of advertising, including: history of advertising; creativity; evolution of integrated marketing communications; marketing and advertising; advertising agency structure; the various media relative to placement and production; influences of computer technology; ethics of advertising; an introduction to the promotional mix elements, sales promotion and direct marketing (including the Internet); and career opportunities in the industry. Terminology and procedures will be introduced and incorporated in the presentation of advertisements and advertising campaigns. *3 credits*

### **ADVC 350: Introduction to Sales Promotion and Direct Marketing**

This is an intermediate level course for Advertising Communication majors, minors and others interested in the promotional mix elements of sales promotion and direct marketing. The course will incorporate an introduction of each and examples of uses in the industry, along with student application projects. The course will explore the fundamentals of sales promotions and direct marketing activities, how they are used in the industry, why they are used, and how they are integrated with other promotional mix elements. Terminology and procedures will be introduced and incorporated in the presentation of the materials. *3 credits*

### **ADVC 372: Principles of Public Relations**

This is an introductory level course on the topic of public relations, a component of the promotional mix elements. Strategies and communication tools will be introduced and

studied as they relate to an organization’s efforts to communicate with and position itself with its internal and external publics. 3 credits

**ADVC 375: Advertising Communication Organizational Internship**

Selected students will be able to spend a period of time (150 hours) working as an Intern with an organization. During this period the student will maintain a journal, will meet regularly with a faculty member and with a supervisor to provide continuing evaluation of quality and progress of the student’s work. At the conclusion of the experience the student will submit a paper and portfolio to the supervisor and faculty member and make an oral presentation. Prerequisite: Senior level 3 credits

**ADVC 389: Strategic Public Relations**

Strategic Public Relations is designed to develop the student’s public relationship skills with an understanding and application of the strategies used in a comprehensive public relations effort. The course will provide to students the opportunity to apply the fundamentals of the industry to an actual identified client. The class will include public relations case students, issues in the industry (technology, research, ethics) and the development and execution of a public relations plan. Strategies and communication tools will be studied and applied as they relate to an organization’s efforts to communicate with and position itself with its internal and external audiences. Prerequisites: ADVC 101, ADVC 372, JCOM 214, JCOM 215 3 credits

**ADVC 390: Advertising Research**

Advertising Research is designed for Advertising Communication majors and minors in the junior year to prepare them for the development, gathering and analysis of research that is used to assist in the creation of promotional messages to targeted audiences. The hands-on course will provide students with a variety of learning opportunities in developing primary research, uncovering secondary research, analyzing results and presenting conclusions. Prerequisites: ADVC 101, ADVC 340 3 credits

**ADVC 400: Integrated Marketing Campaign Development**

This course is designed for Advertising Communication major and minor students to be taken Senior year as an opportunity to integrate their course work in the Advertising Program, along with their Communication, Business and Liberal Studies courses, and any work, co-curricular or internship experiences, into a comprehensive, original advertising/promotional plan. The completion of the required advertising/promotional plan (as a group effort) and portfolio (as an individual effort) will provide students the opportunity to express their creative communication ideas, participate in issues of ethics and morals, apply their knowledge and experience in active listening, apply their knowledge of research, apply their knowledge of the business and promotional industries, apply and develop their analytical thinking abilities, and assist in helping them to determine how their proposed campaign will influence not only their target audience but the world around them. 3 credits

**Advertising Communication Curriculum**

*(Numerals in front of courses indicate credits)*

**Advertising Track**

FRESHMAN			
Fall Semester		Spring Semester	
2	First-Year Seminar/COMM 161	3	Intro to IMC/ADVC 101
3	College Comp/LENG 111	3	Crit Analysis and Comp/LENG 112
3	History w/out Borders/LHST 111	3	Intro to Philosophy/LPHI 131
3	Presentational Strategies/SPCH 115	3	Intro to Sacred Scripture/LTHE 121
3	Intro to Elec. Media/COMM 111	3	Found of Bus Enter/BCOR 105
3	Math		
17		15	

## SOPHOMORE

*Fall Semester*

- 3 Foreign Lang 1
- 3 Philosophy II Series/LPHI
- 3 Digital Graphics/COMM 356
- 3 Microeconomics/BCOR 111
- 3 TV Production/COMM 211

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15

## JUNIOR

*Fall Semester*

- 3 Fund of Advert/ADVC 340
- 3 Prin of PR ADVC/ENGL 372
- 3 Man Theory and Prac/BCOR 250  
or COMM 341 Media Manage
- 3 Theology II Series/LTHE
- 3 Broadcast Copywrit/COMM321
- 1 Practicum/COMM 262

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16

## SENIOR

*Fall Semester*

- 3 Emerging Media/ADVC 325
- 3 Media Ethics/Criticism/COMM 350
- 3 Elective
- 3 Theo/Phil III Series/LTHE or LPHI
- 1 Leadership Seminar/COMM 240
- 3 Integrated Campaigns/ADVC 400

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16
*Spring Semester*

- 3 Mark in Global Enviro/BCOR 240 or  
COMM 341 Media Management
- 3 Foreign Lang 2
- 3 Writing for Print Media/JCOM 214
- 6 Elective
- 1 Practicum/COMM 162

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16
*Spring Semester*

- 3 Advertising Research/ADVC 390
- 3 Intro to SP and DM/ADVC 350
- 3 Adver Elec Media/COMM 381
- 3 Elective
- 3 English Literature Series/LENG

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15
*Spring Semester*

- 3 Fine Arts Series/LFIN
- 3 Comm Res and Thesis/COMM 400
- 6 Elective
- 3 Natural Science
- 3 Internship Experience/ADVC 375

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18

128 Total Credits

## Public Relations Track

## FRESHMAN

*Fall Semester*

- 2 First-Year Seminar/COMM 161
- 3 College Comp/LENG 111
- 3 History w/out Borders/LHST 111
- 3 Presentational Strategies/SPCH 115
- 3 Intro to Sacred Scriptures/LTHE 121
- 3 Math

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17
*Spring Semester*

- 3 Intro to IMC/ADVC 101
- 3 Crit Analysis and Comp/LENG 112
- 3 Intro to Philosophy/LPHI 131
- 3 Foreign Lang 1
- 3 Found of Bus Enter/BCOR 105

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15

## SOPHOMORE

*Fall Semester*

- 3 Foreign Lang 2
- 3 Philosophy II Series/LPHI
- 3 Digital Graphics/COMM 356
- 3 Microeconomics/BCOR 111
- 3 Bus and Prof Comm/ENGL 212

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15
*Spring Semester*

- 3 Mark in Global Enviro/BCOR 240 or  
COMM 341 Media Management
- 3 TV Production/COMM 211
- 3 Writing for Print Media/JCOM 214
- 6 Elective
- 1 Practicum/COMM 162

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16

JUNIOR	
<i>Fall Semester</i>	
3	Fund of Advert/ADVC 340
3	Prin of PR/ADVC 372
3	Man Theory and Prac/BCOR 250 or COMM 341 Media Manage
3	Theology II Series/LTHE
3	Event Planning/COMM 394
1	Practicum/COMM 262
16	
<i>Spring Semester</i>	
3	Mass Media and Pop/ENGL 371
3	Edit/Prod of Print Media/JCOM 215
3	Strategic PR/ADVC 389
3	Elective
3	English Literature Series/LENG
15	
SENIOR	
<i>Fall Semester</i>	
3	Emerging Media/ADVC 325
3	Media Ethics/Criticism/COMM 350
3	Elective
3	Theo/Phil III Series/LTHE or LPHI
1	Leadership Seminar
3	Integrated Campaigns/ADVC 400
16	
<i>Spring Semester</i>	
3	Fine Arts Series/LFIN
3	Comm Res and Thesis/COMM 400
6	Elective
3	Natural Science
3	Internship Experience/ADVC 375
18	

**128 Total Credits**

#### **ADVERTISING/COMMUNICATION MINOR (18 credits)**

Introduction to Integrated Marketing Communication/ADVC 101 **or**  
 Fundamentals of Advertising/ADVC 340  
 Public Relations/ADVC 372  
 Broadcast Copywriting/COMM 321  
 Introduction to Sales Promotion and Direct Marketing/ADVC 350  
 Advertising for Electronic Media/COMM 381  
 Integrated Marketing Campaign Development/ADVC 400

## **ARCHAEOLOGY AND CULTURE**

SUZANNE RICHARD, Ph.D., *Program Coordinator*

### **MINOR IN ARCHAEOLOGY AND CULTURE**

#### **Description:**

The Minor in Archaeology and Culture is intentionally interdisciplinary. The minor is structured to complement the Liberal Studies Core at Gannon University. Study abroad is integral to the minor and is structurally ensured, as are exposure to multi-cultural values, a science and technology application and textual analysis.

#### **ARCHAEOLOGY & CULTURE MINOR CURRICULUM OUTLINE**

Completion of 18 credits is required to satisfy the requirements of the Minor. In consultation with the program coordinator, the student will develop a Minor focused either on Track 1 or on Track 2.

#### **Cognate Track 1: Near Eastern Archaeology & Culture**

##### **Required (12 credits)**

- 3 Sacred Scriptures/LTHE 121
- 3 Archaeology Methods and Lab/ARCH 202

- 3 Study Abroad\*/ARCH 396
- 3 Archaeology & History of the Ancient Near East/ARCH 201

#### **Electives (6 credits)**

- 3 World Archaeology/World History I/ARCH/HIST 302
- 3 Museum Studies/ARCH 304
- 3 Cultural Anthropology/SOC 292 or Physical Anthropology/SOC 293
- 3 Special Topics in Archaeology/History/Culture/ARCH 390/HIST 390

### **Cognate Track 2: Pre-Columbian Archaeology & Culture**

#### **Required (12 credits)**

- 3 Colonial Latin American/HIST 271
- 3 Archaeology Methods and Lab/ARCH 202
- 3 Study Abroad\*/ARCH 396
- 3 World Archaeology/World History I/ARCH/HIST 302  
or Cultures of Mesoamerica/GLOBL 280  
or Literature of the Native Americas 1/GLOBL 281  
or Literature of the Native Americas 2/GLOBL 282

#### **Electives (6 credits)**

- 3 Spanish 111/112
- 3 Cultural Anthropology/SOC 292 or Physical Anthropology/SOC 293
- 3 World Archaeology/World History I/ARCH/HIST 302
- 3 ARCH 390 Special Topics in Archaeology or/HIST 390 Special Topics in History  
or Cultures of Mesoamerica/GLOBL 280  
or GLOBL 281 Literatures of the Native Americas 1: Pre Columbian and Colonial  
or GLOBL 282 Literatures of the Native Americas 2: Postcolonial to Present
- 3 Museum Studies/ARCH 304

#### **\*Study Abroad**

- 3 Gannon University Archaeological Expedition to Khirbet Iskander, Jordan
- 3 Gannon University approved Meso-American/Latin American Tour and/or Archaeological Expedition
- 3 Gannon University sponsored-study tour to the Near East
- 3 Gannon University sponsored-study tour to Greece/HIST 394
- 3 Or under special circumstances Internship in the Gannon University Collins Institute for Archaeological Research/ARCH 395

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## **COURSE DESCRIPTIONS:**

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### **ARCH 201: Archaeology and History of the Ancient Near East**

This course will offer a basic survey of the archaeological culture and history of the ancient Near East, including the Biblical Lands of Israel and Transjordan and contemporary societies in neighboring Mesopotamia and Egypt. The purpose of this particular course is specifically to introduce the student to a broad sweep of civilizations, peoples, and ancient lifeways, dating primarily to the Bronze and Iron Ages (4th - 1st millennia BCE roughly). *3 credits*

### **ARCH 202: Archaeology Methods and Lab**

This course will offer a basic introduction to the theoretical and scientific aspects of archaeology. Archaeology relies on a body of theories and methods for reading human prehistory from the incomplete record left by past cultures; likewise in the historical era, this body of theories and methods serves to provide a comprehensive view of ancient lifeways, by including artifact analysis. Topics include techniques of excavation and artifact analysis and classification of materials, e.g., ceramics, objects, lithics, faunal and floral analysis, among others. The course is divided between lecture and laboratory sessions in which students analyze archaeological data. *3 credits*



**ARCH 302: Becoming Human–Becoming the World**

This course intends to study culture continuity and change by concentrating on the most important turning points and developments in Asia, Europe, Africa, and the Americas, covering the time span from Human Origins to the edge of the Renaissance. The orientation is global, the themes integrative, the overall goal being to show interconnections in the development of civilization(s), along with divergence across cultural and societal boundaries. The course stresses the archaeological and textual evidence. Some of the over-arching themes that express both culture and cultural diversity in antiquity include: becoming human, first states, nomadic movements, empires, and universal religions. *3 credits*

**ARCH 304: Introduction to Museum Studies**

This course intends to survey the field of museum studies and introduce the student to the world of museums/historical societies and to various facets of exhibit research, design, and implementation. There will be a “hands-on” component as well as a theoretical underpinning to museum best practices. The course will cover methods adopted by curators and educators in the care and preservation of artifacts, and issues currently debated in the field. Topics include: collection, acquisition, cataloguing, and inventorying. There will be a class project in museum exhibit design, utilizing archaeological resources in the Archaeology Museum Gallery at Gannon. *3 credits*

**ARCH 390: Special Topics in Archaeology**

This course focuses on a particular region or topics in the Ancient Near East. Special topics include: The Archaeology Egypt, Prehistoric Civilizations and the Rise of the State, The Archaeology of the Greco-Roman World in the Near East, Archaeological Remains of Religion and Cult in the Ancient Near East, Correlations between the Mediterranean World and the Ancient Near East in the Bronze Age. *3 credits*

**ARCH 395: Archaeological Laboratory Internship**

This internship in the Gannon University Institute for Archaeological Research is designed to substitute for the Summer Study Abroad (ARCH 396) course, under special circumstances. The intent of this internship is to provide the student practice in archaeological post-excavation research, in lieu of actual field experience on an archaeological dig: The intern will, among other things, work on artifact analysis, classification, drafting, restoration, data entry. *3 credits*

**ARCH 396: Study Abroad**

Credit awarded for participation in archaeological field season at Khirbet Iskander, approved study-tour abroad or other approved activities/internships. *3 credits*

**Liberal Studies Integration**

This minor is designed to correlate well with the identified core outcomes of the Gannon University Liberal Studies core. The minor explicitly contributes to the following Liberal Studies Core outcomes:

- Understand major philosophical and theological principles: emphasis on History
- Synthesize and apply principles of science: archaeology methods and lab
- Awareness and appreciation of diverse cultures: study abroad experience

The following course list suggests the various ways in which the courses in the Ancient Near Eastern Studies Minor could satisfy Liberal Studies requirements:

- Introduction to Sacred Scripture: satisfies current LS requirement
- Archaeology and History of the Ancient Near East: can satisfy social science requirement
- Archaeology Methods and Lab: satisfies current science and technology requirement for non-science majors
- Elective: can satisfy current social science elective requirement
- Study Abroad: can satisfy either Fine Arts requirement or social science elective requirement for science majors

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## SCHOOL OF COMMUNICATION AND THE ARTS

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TBA, *Program Director*

FACULTY: *Professor:* Michael DeSanctis. *Associate Professor:* Shawn Jeffery Clerkin. *Assistant Professor:* Jennifer Allen-Catellier, Frank Garland, Mary Carol Gensheimer. *Instructors:* David Blaetz, Anne O'Neill. *Visiting Professor:* Alaina Manchester.

The School of Communication and the Arts, located in the College of Humanities, Social Sciences and Education (CHESSE), offers students a comprehensive education in human communication studies, media studies, and the visual and performing arts. Faculty members in the school teach the Liberal Studies Fine Arts courses as well as the core courses in Speech Communication.

Current major programs offered in the School of Communication and the Arts include:

- Advertising Communication
- Communication Arts (Electronic Media)
- Journalism Communication
- Theatre
- Theatre and Communication Arts

Any Gannon student may also minor in the one of the following areas:

- Advertising Communication
- Communication and Rhetoric
- Fine Arts
- Journalism
- Theatre

See the program pages of the catalog for specific information about these programs.

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## COMMUNICATION ARTS, ELECTRONIC MEDIA

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*(School of Communication and the Arts)*

TBA, *Program Director*

FACULTY: *Professor:* Michael DeSanctis. *Associate Professor:* Shawn Jeffery Clerkin. *Assistant Professor:* Jennifer Allen-Catellier, Frank Garland, Mary Carol Gensheimer. *Instructors:* David Blaetz, Anne O'Neill. *Visiting Professor:* Alaina Manchester.

### Program Description

Communication skills are valued in every business. As a Communication Arts major you will build the skills necessary to develop a varied communication portfolio, gain valuable real world experience in the field, and get a head start on your career. You will learn to design engaging content for a variety of audiences and media. Our experienced faculty will help you to develop your creativity in a challenging and caring environment. The Communication world is exploding with opportunity, as a Communication Arts major you will be prepared for a vibrant career.

Juniors and Seniors are eligible for professional internships at local media outlets, advertising agencies and corporate offices.

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## COURSE DESCRIPTIONS:

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### Communication Arts

#### **COMM 111: Introduction to Electronic Media**

A survey of the technological and programming history of Electronic Media inclusive of government, social opinion, and advertising influences from the beginning to present.

*3 credits, Fall*

#### **COMM 112: Electronic Media Programming**

A study of the theory and technique of programming for radio, television, and internet.

Topics include the design and implementation of radio formats and television program schedules with a focus on the marketing and managerial aspects of the program executive's role in station operations.

*3 credits, Spring*

#### **COMM 161: First-Year Seminar: Practicum in Media and Theatre**

Practicum is a "hands on" class in which the students gain one credit for planned discussion sessions and project-based experience in theatre, radio, video and new media. The course will introduce the first time student to the inner workings of "department people" and "department projects." The student will begin the process of portfolio development, take part in departmental activities, and participate in a final production.

*2 credits, Fall*

#### **COMM 162: Practicum in Media and Theatre**

Students gain one credit for practical hands-on experience in media and theater activities on and off campus under the direct supervision of the department's faculty and staff members.

*1 credit*

#### **COMM 211: Television Production**

A skills orientation in the basic technological considerations of television studio production inclusive of camera operation, lighting, audio, graphics, special effects, switching, and nonlinear editing.

*3 credits*

#### **COMM 230: Television and Radio Performance**

A practice in the skills of basic performance and broadcast styles, ranging from news and interview formats to dramatic presentation, emphasizing specific talent problems.

*3 credits*

#### **COMM 240: Leadership Seminar**

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in the various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for students' leadership development as reflected both in this course and in the co-requisite Theology or Philosophy Series III course. Individual and team-based assignments serve as the methods for the students to assess, analyze and evaluate their learning style and leadership style, and to demonstrate this knowledge through the completion of a LIFECORE-based major assignment.

*1 credit*

#### **COMM 241: Digital Audio Production**

A study of audio mixing and editing techniques in commercials, promos, and news applications. Professional material from the RAB will be used in class.

*3 credits*

#### **COMM 250: WERGi**

The purpose of this course is to develop skills in online/digital media production and performance. Through planning, writing, production, performance and feedback, the student will be able to build a portfolio of quality audio work. This course involves a skill orientation in the basic technological considerations of digital audio production, inclusive of computers, microphones, on-air work, special effects, and editing. There is an additional emphasis on the process of radio show preparation and quality air shift production.

Prerequisites: COMM 241

*3 credits*

**COMM 262: Practicum in Media and Theatre**

Students gain one credit for practical hands-on experience in media and theater activities on and off campus under the direct supervision of the department's faculty and staff members.

*1 credit*

**COMM 321: Broadcast Copywriting**

A study of the forms and formats of material suitable for both radio and television with an analysis of selected problems in the commercial uses of the media; practice in selection, adaptation and organization of content and production materials such as film, slides and graphics.

*3 credits*

**COMM 330: Corporate Video**

A survey of the growing uses of video for instructional, institutional, corporate, and public access applications. The emphasis will be on the planning, scriptwriting, production and computer editing of these non-broadcast forms. The editing system software used is "Adobe Premiere Pro".

Prerequisite: COMM 211

*3 credits*

**COMM 341: Media Management**

A study of the basic principles of management theory as they apply specifically to broadcast station organization, programming, sales, engineering, and the broadcast regulatory environment using both lecture and case study approaches.

*3 credits*

**COMM 350: Media Ethics and Criticism**

An historical consideration of public opinion and the major media critics of the electronic media with practical writing experience in evaluating network television and local radio.

Prerequisite: Junior/Senior status

*3 credits*

**COMM 356: Digital Graphics**

Digital Graphics is an exploration of the theories and skills required for visual electronic communication. Using traditional and non-traditional studio techniques, the student will produce a portfolio of electronic imagery. Through this accumulation of sensitivities and skills, the student will be able to effectively and efficiently produce messages for the electronic media.

*3 credits*

**COMM 357: Animation**

Animation class is designed to explore the area of visual communication in the digital media, specifically the areas of vector graphics and motion. Through the exploration of various fundamental animation techniques, the student will create a portfolio of moving images and text. Through the accumulation of sensitivities and skills in creating animated visuals, the student will be able to communicate, effectively and efficiently, in the digital and electronic medium.

*3 credits*

**COMM 358: Digital Drawing**

Digital Drawing is a drawing class designed to explore the area of visual communication in the digital media. The student will use both pencil and digital stylus to create images. In addition, the student will explore the relationship between the "objective of the communication" and its influence on the plan for the image. The student will create a portfolio of various vector-based images. The software used is "Adobe Illustrator." Skill in drawing is required. Drawing skill will be part of the evaluation.

*3 credits*

**COMM 362: Practicum in Media and Theatre**

Students can gain one credit for practical hands-on experience in media and theater activities on and off campus under the direct supervision of the department's faculty and staff members.

*1 credit*

**COMM 380: Media Law and Regulation**

A study of the laws and regulations that comprise the legal environment of broadcasting. The

course moves from the historical perspective to current applications of Federal Law and FCC Rules and Regulations. *3 credits*

**COMM 381: Advertising for Electronic Media**

A study of skills and theory of Radio and Television advertising salesmanship. Includes discussion of ratings, rate structures, advertising packages, station promotions and role play in sales techniques. *3 credits*

**COMM 390-394: Special Topics in Radio/TV** *1-3 credits*

**COMM 395-399: Independent Study** *1-9 credits*

**COMM 400: Senior Seminar and Thesis**

Prerequisite: COMM 350 or THEA 421; Senior status required; For majors only. *3 credits*

**COMM 411: Broadcast Newswriting and Production**

An examination of the techniques used in writing material for broadcast in contrast to print, including shaping the spoken message to conform to broadcasting time limitations. *3 credits*

**COMM 462: Practicum in Media and Theatre**

Students gain one credit for practical hands-on experience in media and theater activities on and off campus under the direct supervision of the department's faculty and staff members. *1 credit*

**COMM 490: Professional Internship I in TV/Radio/Theatre**

A full-semester work experience with a professional communication system. Internships at other Radio/TV stations and advertising agencies available based on student's interests and career goals. Requires recommendation of Department Chairman. *3 credits*

**COMM 491: Professional Internship II in TV/Radio/Theatre**

A full-semester work experience with a professional communication system. Requires recommendation of Department Chairman. *3 credits*

**Speech**

**SPCH 101: Introduction to Speech**

This course is an exploration of the procedures of preparing a public speech with emphasis on personal credibility, audience analysis, and effective delivery techniques. This course fulfills Gannon University's Liberal Studies Speech requirement for students enrolled in various Associate programs. *1 credit*

**SPCH 110: Technical Communication**

This course is an introduction to the exploration of the procedures of preparing a public speech with emphasis on personal credibility, audience analysis, and effective delivery techniques. This course fulfills Gannon University's Liberal Studies Speech requirement for students enrolled in programs approved by the Liberal Studies Committee. *1 credit*

**SPCH 111: Public Speaking**

This course introduces both the theory and the practice of public speaking in a variety of contexts. Students will develop the communication skills necessary to analyze verbal discourse and perform effectively in a variety of public speaking situations. *3 credits*

**SPCH 113: Human Communication & Society**

This course introduces both the theory and the practice of public speaking in a variety of professional contexts. Special emphasis is given to public presentations, interviewing and interacting in group meetings. *3 credits*

**SPCH 115: Presentational Strategies**

This course introduces both the theory and the practice of public speaking in a variety of technologically mediated contexts. Special emphasis is given to students interested in the

fields of media and/or performance who wish to develop their performance skills in mediated presentational environments. 3 credits

**SPCH 225: Philosophy of Communication**

An analysis of the epistemological foundations underlying all forms of communicative processes from individual gestures to the electronic world-wide media. 3 credits

**SPCH 235: Interpersonal Communication**

Develops communication skills in a variety of personal and professional relationships, including friendships, romantic relationships, work relationships, and family relationships. 3 credits

**SPCH 313: Intercultural Communication**

Develops students' understanding of cultural, international and global communication in order to be informed and effective global citizens. Students research the influences of history, belief, cultural practices, values, and ethics on intercultural conflict, moving toward a goal of better ethical global citizenship and civic engagement. 3 credits

**SPCH 314: Persuasion**

This course is a study of the nature and methods of persuasion as they relate to oral communication with emphasis on increasing the student's skill in persuasive speaking and ability to recognize and evaluate persuasive appeals.  
Prerequisite: SPCH 111 or SPCH 113 or SPCH 115 3 credits

**SPCH 322: Argumentation and Debate**

Practice in the art of rhetoric as it relates to persuasive, logical speech-making.  
Prerequisite: SPCH 111 or SPCH 113 or SPCH 115 3 credits

**SPCH 390-394: Special Topics in Speech** 1-3 credits

**Communication Arts**

*(Numerals in front of courses indicate credits)*

FRESHMAN			
Fall		Spring	
2	First-Year Seminar/COMM 161	3	Crit Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Intro to Philosophy/LPHI 131
3	History Without Borders/LHST 111	3	Electronic Media Prog/COMM 112
3	Presentational Strategies/SPCH 115	3	Sacred Scriptures/LTHE 121
3	Theatre and Culture/THEA 111	1	Practicum/COMM 162
3	Intro to Electronic Media/COMM 111	3	Digital Audio Prod./COMM 241
17		16	
SOPHOMORE			
Fall		Spring	
3	Contemporary Issues/THEA 210	3	Foreign Language II
3	Foreign Language I	3	Theology II Series/LTHE
3	Philosophy II Series/LPHI	3	TV/Radio Performance/COMM 230
3	TV Production/COMM 211	3	Electives
3	Acting/THEA 140	1	Practicum/COMM 262
3	Voice & Diction/THEA 221	3	Corporate Video/COMM 330
18		16	
JUNIOR			
Fall		Spring	
3	Broadcast Copywriting/COMM 321	3	Argumentation and Debate/SPCH 322
3	Media Ethics and Critic/COMM 350	3	Digital Graphics/COMM 356
	or Theatre Criticism/THEA 421		or Digital Animation/COMM 357

3	Theology or Phil III Series/LTHE or	or Digital Drawing/COMM 358
	LPHI	3 Math
1	Practicum/COMM 362 or 462	3 Electives
1	Leadership Seminar/COMM 240	3 Literature Series/LENG
3	Electives	
3	Digital Graphics/COMM 356 or	
	Principles of Design/THEA 251	
17		15
SENIOR		
<i>Fall</i>		
3	Media Management/COMM 341	3 Sr Seminar and Thesis/COMM 400
3	Interpersonal Communication/	8 Electives
	SPCH 235	3 Fine Arts Series/LFIN
3	LS Science	
3	Electives	
3	Social Science	
15		14

**Total credits: 128**

## COMMUNICATION & RHETORICAL STUDIES MINOR

Completion of the following 15 credits will satisfy the requirements for a minor in Communication & Rhetorical Studies.

3	Presentation Strategies/SPCH 115
3	Philosophy of Communication/SPCH 225 or PHIL 225
3	Interpersonal Communication/SPCH 235
3	Persuasion/SPCH 314
3	Argumentation & Debate/SPCH 322
15	

## THE NEXT STEP

### Baccalaureate Degree Program for Graduates of Two Year Colleges

#### Communication Arts

(Numerals in front of courses indicate credits)

<i>Pre-Senior Year</i>		<i>Senior Year</i>	
3	Intro to Electronic Media/COMM 111	3	Broadcast Copywriting/COMM 321
3	TV/Radio Performance/COMM 230	3	Digital Audio Prod/COMM 241
3	TV Production/COMM 211	3	Media Ethics and Critic/COMM 350
3	Corporate Video/COMM 330	3	Senior Seminar & Thesis/
3	Electronic Media Programming/		COMM 400*
	COMM 112	3	Advanced Speech/SPCH 313 or
3	Presentation Strategies/SPCH 115		Interp. Com/SPCH 235
3	Sacred Scripture/LTHE 121	3	Fine Art Series/LFIN
3	Intro to Philosophy/LPHI 131	3	Literature Series/LENG
3	Theology or Phil III Series/LTHE or	3	Fund. Acting/THEA 140
1	Leadership Seminar/COMM 240	9	Electives/Cognates/Practicum LPHI
3	Elective	3	Digital Graphics/COMM 356
31		27	

\* fulfills LBST 383 requirement

All students graduating from Humanities must have completed six credits of a Modern Foreign Language. If a student has not completed 6 credits of a foreign language in the associate degree program, he or she must complete them as part of the Next Step program.

Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program.

Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology / Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

*Note:* Some of these courses are taught on a three-semester rotation so the actual timing may be changed.

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## CRIMINAL JUSTICE

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JULIA MACK, Ph.D., *Program Director*

*FACULTY: Assistant Professors:* Gerald Clark, Julia Mack, Christopher N. Magno, Ted Yeshion.

*Lecturers:* Erik Christensen, Larry Dombrowski, Lester Fetterman, Paul Gambill, Keith A.

Hardner, Elizabeth Hirz, Chris Johns, Jeffrey Shaw, Christian Trabold, John Trucilla, Jason Wick.

### Vision

The faculty in the Criminal Justice Program (CRJS) is dedicated to teaching students how to search for truth and justice by applying theory, practical knowledge, and ethical reasoning in domestic and international environments in the effort to improve society.

### Mission

The Criminal Justice Program (CRJS) at Gannon University is an interdisciplinary, undergraduate major that is dedicated to education, research, and service in the fields of criminal justice, public safety, and social justice. With the capacity to develop graduates who have intellectual curiosity, moral commitment and professional competence to confront the challenges of crime and justice, CRJS strives to provide students with critical thinking and effective communication skills as well as to cultivate their capacity for personal growth and creative problem solving. Essentially, we seek to inspire students to become responsible citizens and public servants. Building on this foundation, CRJS offers its students a diverse curriculum that balances the arts, sciences and humanities with professional training, and challenges them to make a difference in the lives of others.

### Goal

- Students will demonstrate the research, investigative, and forensic skills important for working in justice or a related field.
- Students will demonstrate their understanding of diverse explanations of crime and deviance and how to apply them to various types of crime.
- Students will demonstrate a critical understanding of the systems, processes, and innovations in criminal justice.
- Students will be able to analyze moral and ethical complexities and to find suitable resolutions.
- Students will demonstrate skillful speaking, writing, and computing.



- Students will demonstrate the cultural awareness necessary to understand issues of diversity in criminal justice.

### Curriculum

Consistent with contemporary standards of education in Criminal Justice, our curriculum emphasizes the need for students to be exposed to the most significant areas of study in the criminal justice system – law enforcement, policing, corrections, probation, parole, juvenile justice, criminal law and criminology. In each of these areas, course offerings stress both theoretical concepts and practical applications. As a complement to the classroom experiences, the program requires students to engage in experiential learning such as field placement, internships, and service-learning projects. These allow the student to observe the day to day operation of specific agencies.

In addition to preparing students for initial criminal justice careers, the Criminal Justice Program provides students with a solid academic foundation for subsequent graduate education in criminal justice, related social science disciplines and law.

There is an increasing need for para-professionals to earn a minimum of an Associate Degree to gain entry into the criminal justice system or related occupations. **The Criminal Justice Program offers an Associate Degree (AA) in Criminal Justice.** The Associate Degree is offered through the Gannon University Center for Adult Learning.

Recognizing the importance of language proficiency among criminal justice professionals has led to the development of a special sequence of language courses necessary for degree completion in the area of Criminal Justice. The Department of Foreign Language and Cultures in conjunction with the Criminal Justice Program offer the opportunity to acquire relevant language skills and familiarity with the associated culture, sufficient to enhance effective communication in criminal justice settings. The Criminal Justice Program highly recommends Spanish fluency for its students. Criminal Justice majors are encouraged to develop competency in this language as a means of broadening professional skills and expanding employment opportunities.

All criminal justice students are encouraged to concentrate their general elective courses in areas which enhance career goals, such as foreign language, social and behavioral sciences, business administration, computer science and chemistry/biology sequences.

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## COURSE DESCRIPTIONS:

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### CRJS 101: Defense Tactics and Safe Physical Management

This course is designed to focus on the application of the use of force by criminal justice personnel and the benefit that traditional martial arts can have in carrying out this aspect of law enforcement/criminal justice responsibility. Law enforcement agencies advocate a use of force continuum that indicates options available in response to levels of resistance that may be encountered by enforcement personnel. This course has been developed to meet the needs of students that are anticipating careers in criminal justice agencies. Students from other academic disciplines will also derive benefits in the use of personal self-defense. CRJS 101 is intended to be a general elective for criminal justice majors. 3 credits

### CRJS 108: First-Year Seminar: Issues in Crime and Justice

Applied Concepts in Crime and Justice is a First-Year Seminar that is required of all CRJS students and open to all students at Gannon University. This is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life, and to encourage development of academic, personal and spiritual aspects of the student's life. This course is unique to the *investigation of crime and justice issues and ethical responsibility*. The

course is offered in the freshman year and is designed to help make your first year of college a positive experience and prepare you for (4) years of success at Gannon University and the Criminal Justice Program. *2 credits*

**CRJS 110: Introduction to Criminal Justice**

This course introduces students to the field of criminal justice through the examination of police, courts, and correctional arenas. It includes a review of historical data, statistical information, and evaluation of criminal justice system policies, procedures, and trends. Students learn the terminology of the field, gain an awareness of the methods of inquiry utilized in the field, and have the opportunity to examine personal attitudes and values regarding crime and responses to crime. Students will examine how criminal justice decision-making involves a delicate balance between community and individual rights as it responds to crime in society. *3 credits, Fall, Spring and Distance Learning (Internet)*

**CRJS 201: Correctional Process**

Analysis of punishment in our criminal justice system, with focus on why we punish and how we punish, all examined within the context of correction philosophies. The history and development of corrections, including relevant theories, practices, systems analysis, and treatment modalities is also evaluated.

Prerequisites: CRJS 110

*3 credits, Fall and Spring*

**CRJS 202: The Police Function**

An introduction to American policing that will provide an analytical framework for understanding the police as a product of a balance of social, historical, political, legal, individual, and organizational forces. The course will examine theoretical propositions about the police in light of current research literature and analyze the three major functions of policing in the United States: law enforcement, service provision, and the maintenance of order. The legal parameters of policing and police administration are reviewed in relation to contemporary issues that pose substantial challenges to police officers and administrators and finally probes contemporary concerns and future challenges such as the critical issues of deadly force, AIDS, affirmative action, and police deviance. The student will also explore the contemporary police industry including public and private agencies at the federal, state and municipal levels. *3 credits, Spring*

**CRJS 205: Principles of Private Security and Loss Prevention**

An introduction to principles of private security and loss prevention, including the history and role of private security; threat assessment and security survey; and principles of physical security, including personnel security and functional area security systems. This course will also focus on the legal aspects of private security, touching on civil and criminal liabilities. *3 credits*

**CRJS 210: Criminalistics I: Introduction to Investigative Forensics**

An introduction to Forensic Science course that introduces the non-scientific student as well as the science based student to the field of forensic science through an exploration of its applications to criminal investigations, with clear explanations of the techniques, abilities, and limitations of the modern crime laboratory. Forensic science is the application of science to those criminal and civil laws that are enforced by agencies in a criminal justice system. This course will familiarize the student with the most current technologies in forensic analysis that private, police and law enforcement professionally rely on to approach criminal perpetrators and to link them through trace evidence to crime scenes. You will also be introduced to the various forensic sciences that make up a typical full service crime laboratory and the role it plays as part of the criminal justice system. This course will also provide students with insight into the issues surrounding physical evidence; introduce students to basic concepts and encourage their exploration of latest websites. Actual cases enable students to see the role of forensic science in criminal investigations and highlight the integral part forensic science plays in modern criminal investigations. *3 credits*

**CRJS 212: Intro to Forensic Psychology**

Forensic Psychology is generally defined as the application of the science and profession of psychology to issues relating to law and the legal system. This course is intended to provide an overview of the various applications of psychology to forensic settings. This course focuses on the production and application of psychological knowledge and research findings for the civil and criminal justice systems. The student will explore criminal profiling, crime scene investigations, and serial murders. Based on this applications approach, the course also investigates police psychology, legal psychology, psychology of crimes and delinquency, "victimology" and victim services, psychological assessments, mental disorders, and correctional psychology.

Prerequisite: CRJS 110 and PSYC 111

*3 credits*

**CRJS 230: Juvenile Delinquency and Adolescent Development**

This course examines delinquency in American society, the history of delinquency and major theoretical concepts that have been utilized to explain criminal behavior and juvenile delinquency with suggestions for the future. Ethnographic research methods will be utilized to identify behaviors and place qualitative meaning to the observed behaviors.

*3 credits*

**CRJS 240: Criminological Theory**

This course is designed to provide an overview of the scientific study of crime as a social phenomenon of criminal behavior. Criminological theory will be addressed from a sociological perspective and issues related to the measurement and extent of crime. The major schools of thought will be discussed utilizing the founders of each school and supplementing their premises with supporting criminology research.

*3 credits, Fall*

**CRJS 241: Cyber Crime and Society**

This course introduces students to the co-evolution of cyber society, cyber-crime and cyber-security. It will provide a broad overview of history, socio-political relations, economics, social structure and culture in cyber space. The course also will examine cases of cyber offenses. Students in this course will gain familiarity with laws designed to control cyber-crime and terminology used in talking about cyber-crimes. Students also will critically analyze cyber laws and regulations and consider how these codes delimit freedom of expression and violate human rights in cyber space.

*3 credits*

**CRJS 242: Careers in Criminal Justice**

This course provides an overview of the field of Criminal Justice, designed to orient students to the Criminal Justice major and how best to tailor it to meet their interests and professional goals. Topics to be covered relate to locating, obtaining, employment opportunities and maintaining careers, resume writing, and professional involvement in Criminal Justice. Potential careers to be discussed include those in Law Enforcement, Corrections, the Court System, Juvenile Justice and other security related careers. Professional concerns such as stress, promotion and civil service requirements will also be addressed.

*3 credits*

**CRJS 250: Criminal Justice Research Methods**

This course is designed to introduce the student to the basic concepts, terminology, and techniques germane to criminal justice research. More specifically, the student will become familiar with both qualitative and quantitative research designs, formulating research hypotheses, asking appropriate questions on a survey or interview, data recording, data analysis, and ethical responsibilities. The skills acquired in this course will be beneficial for both the future graduate student and the criminal justice practitioner.

Prerequisite: CRJS 240

*3 credits, Spring*

**CRJS 261: Introduction to Crime Mapping**

Crime is often a function of time and place, the right or wrong people coming together at a specific location at a particular time. Certain areas in cities and towns draw criminals for the purpose of committing crimes, while others draw people for non-criminal reasons and simply increase the number of potential victims for those seeking a criminal opportunity. Place plays

a large role in police decisions about enforcement and special projects. Crime hot spots are identifiable and require specific types of enforcement and programs to decrease criminal activity in those areas. Students who take the class will deepen their knowledge of theories of environmental criminology, criminogenic and non-criminogenic land use, as well as place based crime prevention. Students will gain practical experience in geographical profiling and crime mapping. CRJS majors/minors. *3 credits*

**CRJS 302: Contemporary Correctional Programs**

This course introduces the student to modern American correctional programs. It examines the nature of programs as well as a wide variety of contemporary programs, both inside and outside institutions, judged to be exemplary by correctional professionals. This course provides a broad overview of effective correctional treatment as well as career opportunities in the field. Through research, class presentations and a paper focusing on one effective program per student, this course will expose the student to both the variety and complexity of modern correctional programs.

Prerequisites: CRJS 110, 201

*3 credits*

**CRJS 303: Issues in Law Enforcement**

Topics of current interest will be discussed, including police-community relations, police decision-making, and concepts in police practice and administration.

Prerequisite: CRJS 110

*3 credits*

**CRJS 304: Issues in Corrections**

This course will focus on alternatives to traditional modes of incarceration, current trends in the treatment of offenders and innovations and problems in correctional administration. *3 credits*

**CRJS 310: Investigative Concepts**

This course of study should help the Criminal Justice student to gather and analyze data gathered in the process of criminal and civil investigations including: investigative techniques, photography, note taking, sketching; identifying, collecting, examining, processing physical evidence; obtaining information, developing, identifying and locating suspects.

Prerequisites: CRJS 110 or CRJS 210

*3 credits, Fall*

**CRJS 315: Introduction to Criminal Law**

This course is a generic study of criminal law in the United States, and does not cover any specific federal or state law. Topics include principles of criminal law, principles of criminal liability, complicity, inchoate crimes, defenses, justifications, excuses, crimes against persons, crimes against property, and crimes against public order. (No prerequisites)

*3 credits*

**CRJS 320: Criminal Law and Procedure**

This course examines the dynamic balance of the power of the government (to enforce the criminal law) against the rights of the individual to come and go as they please without government interference. Additionally, we will study about judicial review, constitutional supremacy, and the protections of state constitutional rights concerning criminal procedure as related to federal constitutional protections. The course will cover the area of search and seizure law, its current status as well as its historical development (through the tracing of case law); the ever-changing laws on interrogation, confessions, identifications, and courtroom procedures such as right to counsel, right to jury trials, the laws governing sentencing and direct and collateral attacks on convictions. There will be a review of the remedies afforded by law to an individual when the government violates the rights its constitution and statutes provides. This is a required Criminal Justice Upper level core course.

Prerequisite: CRJS 110 or CRJS 210

*3 credits, Spring*

**CRJS 321: Criminal Evidence**

This course provides a thorough study of the evidence rules, with specific emphasis on the application of these rules in preparing and presenting evidence. This includes a discussion of the history and approach to the study of evidence; proof by evidence and substitutes; general

admissibility tests, including relevancy and materiality; opinion and expert testimony, and hearsay rule; evidence by way of witness testimony, documents, scientific and real evidence; and exclusion of evidence on constitutional grounds. For better understanding of the evidence rules, judicial decisions are cited and some are included in Part II of the required text. This is a Criminal Justice upper level Elective course.

Recommended but not required: CRJS 110, 320

*3 credits*

### **CRJS 322: Correctional Counseling and Case Management**

An examination of strategies for affecting offender behavior change by correctional counseling and case management in both institutional and community based settings. Emphasis will be on functional and contemporary approaches. CRJS elective.

Prerequisite: CRJS 201

*3 credits*

### **CRJS 324: Issues in Criminal Justice**

This course will examine the nature and extent of crime in society. It will emphasize issues selected from, but not limited to, crime prevention/crime control, emerging patterns of offending and incarceration, and the globalization of crime. Primarily discussion/seminar oriented.

*3 credits*

### **CRJS 325: Culture Diversity in Criminal Justice**

This course analyzes various issues related to the intersections of gender, race, class, crime and the administration of justice in the United States and other countries. The course focuses on overt, institutional, and subtle racism; gender and class bias; and structural discrimination as well as the relationship of all of these phenomena to social justice. The course examines critically cases that illustrate how gender, race and class influence participation in crime and how the criminal justice system processes members of groups who experience discrimination on the basis of their gender, race and/or class.

*3 credits*

### **CRJS 326: White Collar, Occupational, and Organized Crime**

The focus of this course is crime committed in professional organized and other occupational settings. The emphasis will be on current research and case histories, and will include material on etiology and law enforcement. CRJS elective.

*3 credits*

### **CRJS 327: Gangs in Society**

This course will examine contemporary gangs, gang life and law enforcement efforts to study and coordinate the community's response to them. A wide variety of topics and issues will be covered, including: female gangs and ganging, ethnic diversity, economic, neighborhood, and school gang behavior; gun and drug relationships, and research methods used in the study of gangs. There will also be discussions on recruiting, gang identification, gang slang, graffiti, and major national gangs.

*3 credits*

### **CRJS 328: Drugs of Abuse**

The U.S. has the highest rate of drug abuse of any industrialized country in the world. This course is designed to provide the student with a broad understanding and insight into drug use and abuse with American society and its impact upon society in general. Students will gain an understanding on current trends in drug use, specifically the types of drugs on the American market today and how they are used and abused. The primary focus will be on how the criminal justice system attempts to deal with the nation's drug problem. The course will focus on the drug themselves, interdiction, drug enforcement policy, drug courts and drug abuse treatment.

*3 credits*

### **CRJS 330: The Juvenile Justice System**

This course will provide an overview of our juvenile justice system. Students will review the history, theories and origin of juvenile justice. Consideration will be given to influential factors and explore various causes that contribute to delinquent behavior. This includes issues confronting status offenders as well as deprived, dependent, neglected and abused children. Our approach will include issues of early development by the family, school, community and peer relationships. Throughout the course, we will examine these behaviors and take into

account several variables. These variables will be analyzed to determine how they contribute to proper development and/or anti-social behavior. The course will examine victim's rights and the roles of law enforcement, juvenile courts, probation officers, and social workers. Discussions will focus on the community service providers, preventative techniques and treatment modes, each of which are aimed at impacting the dependent/delinquent youth.

*3 credits, Spring*

### **CRJS 332: Alternative Social Control Systems**

This course develops a critical understanding of crime and justice. In the field of criminal justice, the course's critical stance is called "Radical Criminology." The main emphasis of this course is to critically examine concepts and practices related to crime and justice. We will consider an alternative way of defining crime that includes "the crimes of imperialism, the crimes of capitalism, the crimes of racism, the crimes of sexism, and crimes by the state" (Krisberg 1974). We also will explore alternative ways of controlling crime that do not involve punitive, oppressive, and violent responses. These alternatives include nonviolent interventions such as mediation, peacemaking, and community reconciliation. In order to figure out which alternatives might be most effective in preventing crime, we will examine societal contexts in which crime arises by looking at what crime is through the lenses of poverty, class, gender, capitalism, imperialism, terrorism and racism. In this course we also will explore new ways of understanding crime and justice from the viewpoint of "new criminology", which includes Peacemaking Criminology, Green Criminology, Postcolonial Criminology, Black Criminology, and Buddhist Criminology.

*3 credits*

### **CRJS 333: Victimology**

This course will examine the plight of victims including child maltreatment, domestic violence, victimization at work and school. It further explores the extent of homicide victimization. In reviewing the above mentioned topics, guest speakers with expertise in these areas will present their viewpoints on the extent of victimology. Throughout this course, the BARJ principle will be the focus in balancing the victim's role in the criminal justice system.

*3 credits*

### **CRJS 335: Administrative Management of Criminal Justice Agencies**

This course introduces the student to the realities of both administration and management of criminal justice agencies in contemporary America. It provides a comprehensive perspective regarding interpersonal skills, basic management techniques, training, motivating and supervising and appraising others, dealing with difficult people, and getting things done through others. This is a CRJS upper level elective.

Prerequisites: CRJS 110, 201

*3 credits*

### **CRJS 336: Introduction to Terrorism**

This course provides an overview of terrorism as it relates to the discipline of criminal justice. Murder, theft, kidnapping, weapons violations, destruction of private and public property are all crimes encompassed by terrorism. Terrorists are criminals and terrorist organizations are similar to other criminal groups. Because of this, a criminological approach to terrorism can assist in the development of antiterrorism and homeland security policy, as criminological theories identify many of the root causes of terrorism. This course will cover international groups, agro and environmental terrorism, and narco-terrorism. CRJS majors/minors.

*3 credits*

### **CRJS 340: Seminar: Women and Crime**

This course examines how the Criminal Justice System, and the influences of formal and informal social controls to which women have been subjected. Historical perspective is integrated with contemporary reality, and attention is focused on women as professionals, offenders, and victims. Theoretical perspectives on gender inequality will be explored by reviewing the strengths and the limitations of traditional Social Theories. Marxism, Rational choice theories, Psychoanalysis, Ethnomethodology, and Expectation states theory will be some of the theories reviewed. This is a CRJS upper level elective and an accepted course in the Women's Studies minor.

*3 credits*

**CRJS 341: Basic Firearms and Law Enforcement Application**

This course trains students in basic firearm techniques, proper shooting principles and proficiency in handling some types of handguns, shotguns and rifles. Students learn handgun safety, care and cleaning techniques. Students also acquire an understanding of general laws regarding firearms. Students become familiar with the physical components of shotguns and rifles. They will be able to successfully draw on weapons nomenclature to identify each type of gun and will develop the ability to handle firearms effectively and safely in various settings. In addition, each student will acquire proper loading, unloading and shooting techniques associated with general marksmanship, law enforcement, and long gun shooting through a combination of lectures, classroom dry fire drills and live fire exercises at the firearms range. The course also uses videos and photos of actual gunshot wounds to familiarize students with the capabilities of various firearms. Availability for course is restricted to upper level criminal justice majors and others only by permission of the Director of the Criminal Justice Program. *3 credits*

**CRJS 345: Digital Evidence**

This course is designed to introduce the student to the basic concepts, terminology, and techniques germane to electronic crimes and techniques for the investigation of those crimes, find, identify, and preserve evidence of the crime. More specifically, the student will become familiar with criminal and civil law governing search and seizure of digital evidence. The skills acquired in this course will be beneficial for both the future graduate student, intelligence analyst, and the criminal justice practitioner. *3 credits*

**CRJS 350: Criminal Justice Ethics**

An introduction into the application of ethical theories relevant to the practice of the criminal justice system. The course is designed to focus upon and emphasize the most significant moral issues faced by criminal justice professionals today. The student will be required to conduct a detailed examination of these issues and to apply the various ethical theories, codes, and canons to arrive at a moral decision. CRJS majors/minors. Upper level.

Prerequisite: CRJS 240

*3 credits, Fall*

**CRJS 360: Criminal Justice Statistics**

Statistics are used (and misused) in the criminal justice system on a regular basis. This course is designed to familiarize students how data is collected and analyzed in the criminal justice field so that students are comfortable with performing the quantitative tasks that will be required of them as practitioners in the criminal justice system. This course is open to all majors/minors. No specific prerequisite is required, but an understanding of basic mathematical functions is expected. *3 credits*

**CRJS 361: Crime Scene Forensic Techniques**

This course is designed to help you collect and process physical evidence correctly, analyze it thoroughly, and understand its relevance in a criminal case. There is a strong focus on a systematic approach that uses proven, reliable methods for field applications in the investigation of criminal cases and evidence collection. Traditional and new technologies will be discussed in the framework of actual cases. This is an essential hands-on course for everyone involved with physical evidence, from the first responding officers, to crime scene processors, laboratory technicians, investigators, and attorneys trying a criminal case. The students will be exposed to the newest chemical and instrumental techniques, and covers new areas such as forensic analysis of computers and advanced shooting scene reconstruction methods.

Prerequisite: CRJS 110 or CRJS 210

*3 credits*

**CRJS 362: Expert Witnessing**

This course incorporates the court's concern with reliability, relevance, and the admissibility of expert testimony along with the proper court room demeanor. It will also define the avenues of attack used by opposing attorneys regarding expert qualifications and examine the significance of the expert's use of sophisticated technologies to present demonstrative



evidence in the courtroom. The student will explore the increased importance of deposition testimony by experts in the light of the recent trend to mediate and settle cases, rather than go to jail. Case studies are provided for the student's critique and analysis. Actual courtroom testimony for forensic scientists and crime scene investigators will be studied and critiqued. In-class mock crime scene investigations will be conducted resulting in scientific findings. These findings will be thoroughly discussed and the student will have an opportunity to present his/her findings in 'court'.

Prerequisite: CRJS 210 or (CRJS 310 and CHEM 170)

*3 credits*

### **CRJS 363: Digital Evidence/Computer Crime**

This course is designed to introduce the student to what investigators do to collect, preserve, and authenticate digital evidence. How the legal admissibility of digital evidence can be assured and how digital evidence can be used to reconstruct crimes and generate leads. This course is important to train criminal justice students, police, lawyers, programmers or System administrators, and forensic scientists involved in the investigation or prosecution of Computer-related crimes. The course will provide step-by-step instructions for dealing with an assortment of evidentiary problems and will also illustrate how these details fit within the broader contexts of forensic science, crime, and society in general. The difficult balancing act between a secure computing environment and individual privacy will also be evaluated.

Prerequisites: CIS 170, 171, 172, 173 or CIS 150

*3 credits*

### **CRJS 364: Investigation Internet Crime**

The objective of this course is to teach students about technical aspects of the Internet and how the Internet can be used as an investigative tool. As detailed in the syllabus, this is a demanding technical course, requiring participants to submit weekly assignments to demonstrate their understanding of the materials. Topics covered include advanced Internet searching, locating the origin of e-mail messages, tracking criminals who operate on chat networks, investigating computer fraud and intrusions, and dealing with personal computers as an extension of the crime scene. Articles and case examples are used to give a sense of current crimes and law enforcement efforts on the Internet. The course ends with a final investigative assignment those ties together many of the lessons and techniques taught throughout the course.

*3 credits*

### **CRJS 365: Principles of Forensic (Kinesic) Interview and Interrogation**

Kinesic interview and interrogation is viewed as a multiphase behavioral analysis system used to conduct more effective and efficient interpersonal communications. The foundation of the techniques used in this course is to conduct more effective and efficient interpersonal communications. This technique rests on the observation of common everyday behavior of human beings and their diverse communication abilities. The course will explore principles of basic kinesics in terms of speech and body language, and also the same behaviors exhibited in written statements. It is suggested that speech and body language behaviors can give insight into the individual's personality type, indicating the "psychological fingerprint" of the person. By combining the information received through diagnosis of verbal and nonverbal behavior with this psychological fingerprint, an interviewer can conduct an interview and interrogation that is specifically tailored for the subject.

Prerequisites: CRJS 201 or CRJS 210, CRJS 310

*3 credits*

### **CRJS 366: Biological Evidence**

This course focuses on the biology and technology behind serology and a DNA analysis method used today and provides a thorough introduction to students who are less familiar with biological evidence and DNA. This comprehensive course provides an overview of conventional Forensic Serology and DNA Profiling and the role of this section of the crime laboratory as part of the criminal justice system. Evidence collection and preservation, acquisition of known standards for comparison purposes, chain of custody issues and crime scene reconstruction techniques will be discussed. Safety issues regarding biological hazards will also be reviewed. This course concludes with reviews of the DNA testing performed in



high-profile cases such as the O.J. Simpson trial, the President Clinton-Monica Lewinsky affair, identifying the remains of Russia's Romanov family and the Tomb of the Unknown Soldier, the Thomas Jefferson-Sally Hemings affair, and others.

Prerequisite: (CRJS 210, CRJS 310) or (CRJS 310, CHEM 170)

3 credits

### **CRJS 390-394: Special Topics in Criminal Justice**

1-3 credits

### **CRJS 395-399: Independent Study**

By permission only.

1-3 credits

### **CRJS 490: Internship Field Placement**

An opportunity for students to engage in participant observation, task performance or other related activities in an agency of the criminal justice system. The student is required to engage in such activities for a minimum of 10-20 hours per week during an entire semester. Open only to students with a minimum QPA of 2.5 and who have completed 15 credit hours of the criminal justice concentration.

Prerequisite: CRJS 110, 201. By permission only.

1-12 credits, Every semester

### **CRJS 495: Criminal Justice Capstone/Senior Seminar**

This course examines the current status of the criminal justice system, specifically what constitutes a healthy community and how communities respond to crime and the reintegration of ex-offenders. We will analyze assets and pitfalls of communities as well as the programs and pitfalls to successful reintegration of ex-offenders. Students will be able to apply what they have learned in both a descriptive paper and a presentation format. Further-more, students will complete professional development activities. Students will also engage in a service learning project or conduct a neighborhood assessment of crime. The Criminal Justice Capstone course is interchangeable for the LS 383 requirement. Thesis: seniors, Criminal Justice majors.

Prerequisites: CRJS 240, 250

3 credits, Spring

## **Criminal Justice Curriculum**

(Numerals in front of courses indicate credits)

FRESHMAN			
	<i>Fall</i>		<i>Spring</i>
3	College Comp/LENG 111	3	Critical Analysis & Composition/LENG 112
3	Sacred Scripture/LTHE 121		
2	First-Year Seminar: Issues in CRJS/CRJS 108	3	History without Borders/LHST 111
3	Intro to CRJS/CRJS 110	3	Correctional Process/CRJS 201
3	Modern Language	3	Modern Language
3	Basic Sociology/SOCI 110	3	Political Science /POLI 111 or 133
		3	Intro to Psychology/PSYC 111
17		18	
SOPHOMORE			
	<i>Fall</i>		<i>Spring</i>
3	Theology II Series/LTHE or THEO	3	Human Communication & Society/SPCH 113
3	Fine Art Series/LFIN		
3	Intro to Philosophy/LPHI 131	3	Research Methods/CRJS 250
3	Criminological Theory/CRJS 240	3	Cyber Crime & Society/CRJS 241
3	Careers in Criminal Justice/CRJS 242	3	English Literature Series/LENG
		3	CRJS Track Course/CRJS
15		15	
JUNIOR			
	<i>Fall</i>		<i>Spring</i>
3	Philosophy II Series/LPHI or PHIL	3	Theology/Philosophy III Series/LTHE or LPHI
3	Criminal Justice Ethics/CRJS 350		

3	Investigative Concepts/CRJS 310	1	Leadership Seminar
3	Math: Criminal Justice Statistics/ CRJS 360	3	Natural Science
3	CRJS Track Courses	3	Criminal Law and Procedure/ CRJS 320
		6	CRJS Track Courses
15		16	
	SENIOR		
	Fall		Spring
6	CRJS Track Courses/CRJS Upper Level Electives	3	Senior Seminar/LBST 383 or CRJS 495
6	General Electives	3	Cultural Diversity in CJ/CRJS 325
3	Internship Placement/CRJS 490	3	Upper Level Electives
		8	General Electives
15		17	

*\*It is recommended that students take at least 15 credits of curriculum requirements each semester and at least 2 elective credits to obtain full benefit from tuition fees. This practice will insure that the student accrues more credit hours (137) at no additional cost, than the required (128) for graduation. (This is in addition to the (1) 18 credit semester).*

**4+1 BA/MS in Criminalistics**

This program allows highly qualified students to complete the Bachelor’s and Master’s degree in five years rather than six. Students of exceptional promise may be admitted to the program at the time of undergraduate admission. These students would be accepted with the understanding that at the completion of their junior year they would have maintained a sufficiently high GPA both overall and particularly in their major (3.2 overall and 3.2 in the major). Students not initially recruited for the program who met these criteria are also able to apply. A definite commitment on the part of the department and of the student would be made at the conclusion of their fifth semester (midway through the junior year). Students accepted into the program upon admission would be able to complete it without having to take summer courses. Students who are admitted later, and who have completed fewer than 68 credit hours by the end of their sophomore year, will need to take summer credits during the third and summer. Students who are interested in the program, but who are not accepted at admission will be encouraged to complete several major courses during the sophomore year and to take a full load. All students interested in the 4+1 program must apply to the graduate program during their junior year. With a provisional acceptance, they will be able to take two graduate courses during their senior year. Upon successful completion of their undergraduate degree, students will be fully admitted to the graduate program and will take the remaining graduate courses during the fall following their senior year.

**4+1 Matrix BA to MS Matrix**

*(Numerals in front of courses indicate credits)*

	FRESHMAN		
	Fall		Spring
3	College Composition/LENG 111	3	Critical Analysis and Composition/ LENG 112
3	Intro to Criminal Justice/CRJS 110	3	Intro to Philosophy/LPHI 131
3	Modern Language 1	3	History Without Borders/LHST 111
3	Intro Sacred Scriptures/LTHE 121	3	Correctional Process/CRJS 201
3	Basic Sociology/SOCI 110	3	Modern Language 2
2	First Year Seminar/CRJS 108	3	Intro to Psychology/PSYC 111
		3	
17		18	

## SOPHOMORE

*Fall*

- 3 Theology II Series
- 3 Political Science/POLI 111
- 3 Fine Arts Series
- 3 Criminological Theory/CRJS 240
- 3 Careers in Criminal Justice/CRJS 242
- 3 English Literature Series

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18
*Spring*

- 3 Human Communication & Society/SPCH 113
- 3 Philosophy II Series
- 3 Research Methods/CRJS 240
- 3 Cyber Crime and Society/CRJS 241
- 3 Natural Science
- 3 Criminal Law and Proc./CRJS 320

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18

## JUNIOR

*Fall*

- 3 Criminal Justice Statistics/CRJS 360
- 3 Criminal Justice Ethics/CRJS 350
- 3 Investigative Concepts/CRJS 310
- 3 CRJS Elective
- 3 THEO/PHIL III Series
- 1 Leadership Seminar

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16
*Spring*

- 3 Cultural Diversity/CRJS 325
- 3 Internship/CRJS 490
- 3 CRJS Elective
- 3 CRJS Upper-Level Elective
- 3 General Elective
- 3 General Elective

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18

## SENIOR

*Fall*

- 3 Crime Scene Techniques/GCRIM 501
- 3 General Elective
- 6 CRJS Electives
- 3 CRJS Upper-Level Elective

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15
*Spring*

- 3 Senior Seminar/CRJS 495
- 3 Courtroom Procedures/GCRIM 508
- 6 General Electives
- 3 CRJS Upper-Level Elective

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15

## GRADUATE

*Fall*

- 3 Criminal Law of Evidence/GCRIM 507
- 3 Interview and Interrogation/GCRIM 612
- 3 Criminalistics/GCRIM 601
- 3 Psychology and the Law/GCRIM 602

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12
*Spring*

- 3 Courtroom Procedures/GCRIM 508
- 3 Medicolegal Investigation/GCRIM 622
- 3 Physical and Pattern Evidence/GCRIM 621
- 3 Digital Evidence/GCRIM 611

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12
*Summer*

- 3 Forensic Investigation Practicum/GCRIM 641
- 3 Applied Criminalistics/GCRIM 631

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6
**Criminal Justice Associate Degree Curriculum**

- 3 College Composition/LENG 111
- 3 Sacred Scripture/LTHE 121
- 3 Introduction to Philosophy/LPHI 131
- 3 Basic Sociology/SOCI 110 or Introduction to Psychology/PSYC 111
- 2 First-Year Seminar: Issues in CRJS/CRJS 108
- 3 Introduction to Criminal Justice/CRJS 110
- 3 Correctional Process/CRJS 201
- 3 Criminological Theory/CRJS 240
- 3 Cyber Crime and Society/CRJS 241
- 3 Investigative Concepts/CRJS 310
- 3 Criminal Law and Procedure/CRJS 320

- 3 Criminal Justice Ethics/CRJS 350
- 9 Criminal Justice Courses level 300 or 400
- 3 U.S. Government and Politics/POLI 111
- 3 Human Communication & Society/SPCH 113
- 3 Mathematics or Quantitative Reasoning
- 9 Electives
- 65 credits

Tracks or Specializations in the areas of Corrections, Cyber Security, Forensic Investigation, Juvenile Justice, and Law Enforcement are also available through the Criminal Justice Program.

### **Criminal Justice Minor**

Completion of the following courses and electives will satisfy the requirements for a minor in Criminal Justice:

- 3 Introduction to Criminal Justice/CRJS110
- 3 Correctional Process/CRJS 201
- 3 Criminological Theory/CRJS 240
- 9 Criminal Justice Electives\*

*\*These electives are to be selected in consultation with Minor advisor and chosen to meet student objectives in taking Criminal Justice as a minor*

### **Criminal Justice Tracks: Required and Elective Courses**

#### **Cyber Security Track**

Required: Information Tech & Operations/CIS 270; Intro to Networks/CIS 290; Digital Evidence & Computer Crime/CRJS 363

Electives: Internet Crime Investigation/CRJS 364; Internship Placement/CRJS 490; Issues in Science and Technology/CHEM 166; Business Technology/CIS150

#### **Corrections Track**

Required: Contemporary Correctional Programs/CRJS 302; Issues in Corrections/CRJS 304; Correctional Counseling and Case Management/CRJS 322

Electives: Gangs in Society/CRJS 327; Drugs of Abuse/328; Alternative Social Control Systems/CRJS 332; Victimology/CRJS 333; Women in Crime/CRJS 340; Internship Placement/CRJS 490; Psychopathology/PSYC 232; Helping Relationships/PSYC307; Interviewing Skills/SCWK 360

#### **Forensic Investigation**

Required: Intro to Forensic Investigation/CRJS 210; Intro to Forensic Psychology/CRJS 212; Principles of Forensic Interview & Interrogation/CRJS 365

Electives: Criminal Evidence/CRJS 321; Crime Scene Forensic Techniques/CRJS 361; Digital Evidence & Computer Crime/CRJS 363; Internet Crime Investigation/CRJS 364; Internship Placement/CRJS 490

#### **Juvenile Justice Track**

Required: Juvenile Delinquency & Adolescent Development/CRJS 230; Correctional Counseling and Case Management/CRJS 322; Juvenile Justice System/CRJS 330

Electives: Gangs in Society/CRJS 327; Drugs of Abuse/328; Alternative Social Control Systems/CRJS 332; Victimology/CRJS 333; Internship Placement/CRJS 490; Deviant Behavior/SOCI 210; Social Work with Trauma, Abused, and Neglected Children/SCWK 393; Helping Relationships/PSYC307; Interviewing Skills/SCWK 360

#### **Law Enforcement Track**

Required: Police Function/CRJS 202; Intro to Crime Mapping/CRJS 261; Issues in Law

Enforcement/CRJS 303; Criminal Evidence/CRJS 321; Principles of Forensic Interview & Interrogation/CRJS 365

Electives: Basic Firearms and Law Enforcement Application/CRJS 341; Crime Scene Forensic Techniques/CRJS 361; Internet Crime Investigation/CRJS 364; Internship Placement/CRJS 490

## THE NEXT STEP

### Baccalaureate Degree Program for Graduates of Two Year Colleges

#### Criminal Justice

(Numerals in front of courses indicate credits)

<i>Pre-Senior Year</i>	<i>Senior Year</i>
3 Basic Sociology/SOCI 110	3 Investigative Concepts/CRJS 310
3 CRJS Research Methods/CRJS 250	3 Culture Diversity in CRJS/CRJS 325
3 Criminal Justice Ethics/CRJS 350	3 Criminal Law and Procedure/ CRJS 320
3 Cyber Crime & Society/CRJS 241	12 Criminal Justice Upper Level Elect
3 Criminological Theory/CRJS 240	6 Foreign Language
3 Sacred Scriptures/LTHE 121	3 Senior Seminar/LBST 383 or Professional Capstone/CRJS 495
3 Introduction to Philosophy/LPHI 131	3 Theology or Phil III Series/ LTHE or LPHI
3 Literature Series/LENG	1 Leadership Seminar
3 Fine Arts Series/LFIN	
3 U.S. Gov't. & Politics/POLI 111 or Intro to International Relations/ POLI 133	
30	34

#### PREREQUISITES:

The above course requirements presume that the student has completed the following courses, or their equivalent, prior to matriculation. If not, they become additional required courses in the program.

Introduction to Criminal Justice (CRJS 110)  
Correctional Process (CRJS 201)

Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program. Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

All students graduating from the College of Humanities must have completed six credits of a Modern Foreign Language.

## SCHOOL OF EDUCATION

JANICE M. WHITEMAN, M.Ed., *Interim Director, School of Education*

FACULTY: *Associate Professors:* Leighann Forbes, Robin Quick. *Assistant Professors:* Tinukwa Boulder, William Hallock, Jill Merritt, Janice Whiteman. *Instructor:* Nancy Morris.

#### Mission of the Gannon School of Education:

The School of Education is committed to the preparation of teachers as reflected through the Gannon University Judeo-Christian tradition. Through the practice of modeling, professionalism, and collaboration, we deliver a student-centered teacher education program that provides opportunities for diverse community experiences and promotion of continuous learning.

All Gannon University teacher certification programs have Pennsylvania Department of Education approval. Gannon University's undergraduate programs have been identified by the Pennsylvania Department of Education as model, innovative programs in the areas of:

- Development, cognition, and learning coursework
- Use of academic standards and assessment anchors to design instruction
- Assessment skills and use of data to design instruction
- Faculty qualifications
- Use of educational technology
- Field experiences and student teaching
- New teacher support

The School of Education currently offers the following initial certification baccalaureate program options:

Early Childhood Education PreK-4

Early Childhood Education PreK-4 and Special Education PreK-8

Middle Level 4-8

- English/Language Arts and Reading
- Mathematics
- Science
- Social Studies
- English/Language Arts and Mathematics
- English/Language Arts and Science
- Mathematics and Science
- Social Studies and Mathematics
- Social Studies and Science

Middle Level 4-8 and Special Education PreK-8

- English/Language Arts and Reading AND Special Education PreK-8
- Mathematics AND Special Education PreK-8
- Science AND Special Education PreK-8
- Social Studies AND Special Education PreK-8

Secondary Education grades 7-12

- Biology (BA and BS programs)
- English
- Mathematics
- Social Studies

Associate Degrees

- Early Childhood Education
- Early Childhood Education/Early Intervention

### **Teacher Certification**

In compliance with Pennsylvania Law, Act 354, all individuals entering School of Education programs must have and maintain an overall GPA of 3.0 or greater. All individuals seeking teacher certification in Pennsylvania must fulfill the requirements of the University for the Baccalaureate Degree as well as the professional education requirements of the School of Education. Teacher candidates must also achieve passing scores, as determined by the Pennsylvania Department of Education (PDE), on the required teacher examinations. The process and requirements for teacher certification are described in the Gannon University Teacher Certification Handbook as well as this catalog. To obtain specific information about certification in other states, teacher candidates should review information online at each state's Department of Education web site.

**Please note that current Pennsylvania Department of Education standards and regulations take precedence over any information described in this document or the Gannon University Teacher Certification Handbook. Should these standards and regulations change, Gannon will change its requirements.** Teacher candidates will be responsible for meeting the new guidelines for certification. Candidates must meet the PDE guidelines that are in effect on the day candidates submit their certification application. Please refer to the PDE web site at <http://www.pde.state.pa.us> for changes in regulations.

### **Admission to the School of Education**

Acceptance and enrollment at Gannon University does not automatically guarantee acceptance into the School of Education as a teacher candidate. Each teacher candidate must apply for official admission to the School of Education. Applications are available in the School of Education office. Teacher candidates are required to formally apply to the School of Education between their first 48-60 credit hours. This usually occurs between the first and second semester of the sophomore year, but application must be made no later than the end of the sophomore year. Continuation in the Education program is dependent upon acceptance into the School of Education.

The Education Review Committee evaluates applications for admission to the School of Education each semester. Individuals who meet the criteria are recommended to the Director of the School of Education for admission. The standards for admission/retention have been developed by the School of Education and require that teacher candidates accomplish the following academic requirements:

- Candidates must earn a grade of C or better in all education courses.
- An overall GPA of 3.0 or greater is required for acceptance into the School of Education. Computation of the overall grade point average considers all coursework completed at the point of application to the program.
- The School of Education is authorized by the Pennsylvania Department of Education to permit candidates to proceed with Education coursework when the overall GPA is lower than 3.0 but at least 2.8. When all other criteria for admission to the School of Education have been met, candidates with GPAs between 2.8 and 3.0 may be granted permission to continue taking upper level Education courses for one additional semester. Please refer to the Teacher Certification Handbook for further details of the 2.8 GPA policy.
- All candidates, regardless of area of specialization, must have completed LENG 111, LENG 112, three credits of an approved literature course, six credits of math (103 or higher), EDCR 101, and EDCR 103 with a C or better.
- Early Childhood PreK-4 and Special Education PreK-8 majors also must have completed ECED 100, ECED 101, ECED 102, ECED 103, ECED 200, and SPED 101 with a C or better.
- Middle Level 4-8 majors also must complete MLED 200, MLED 201, MLED 202, and SPED 101 with a C or better.
- Secondary majors also must have passed EDFL 101.
- Before completion of 60 credits and before applying for admission to the School of Education, candidates must show evidence that they have met the basic skills requirement in reading, mathematics, and writing. Examinations meeting the basic skills requirement include: Core Academic Skills for Educators Tests (CORE), Pre-Service Academic Performance Assessments (PAPA), The Scholastic Achievement Test (SAT), and/or The American College Test (ACT). Candidates may combine reading, mathematics, and writing module scores from different test providers to meet the basic skills requirement. In addition, a composite score method is available when a candidate does well in one or two areas but lacks a qualifying score in another area. Please note that when using the composite score, each test must meet or exceed the minimum score listed. For complete details, refer to the PA Department of Education

website at [www.education.pa.gov](http://www.education.pa.gov) and enter Basic Skill Testing Requirements in the search box.

- Candidates who do NOT show evidence of meeting the basic skills requirement prior to enrolling in their 61st credit will not be permitted to enroll in upper level Education courses and may be required to change their major.
- Individuals who have earned a BS or BA degree and who enroll in coursework to prepare for teacher certification do not have to meet the basic skills requirement.
- **The School of Education has no control or responsibility for the timely receipt of test scores.** Applications to the School of Education are assessed upon the most recent test scores on file. Teacher candidates who are learning disabled may make requests for adapted testing conditions.
- Candidates must earn an overall satisfactory rating in the area of professional dispositions. Details are provided to teacher candidates during their first semester as Education majors.

### Field Experiences and Student Teaching Requirements

As freshmen, teacher candidates will complete their first field experience as part of EDCR 104 First-Year Seminar. This is an opportunity for candidates to observe for a total of 10 hours in two different educational settings. A variety of experiences in public, private, and diocesan schools located in urban, suburban, and rural locations are directly linked to coursework. Expectations for each experience are described in the School of Education Field Experience Handbooks.

Prior to beginning the first field experience, all teacher candidates must complete the following:

- Submit a valid Act 34 Criminal Background Clearance, Act 33/151 Child Abuse Clearance, and an FBI fingerprinting clearance. All clearances are required by the School of Education and mandated by Pennsylvania School Code, Act 114. If a teacher candidate is continuously enrolled in an education preparation program, the criminal background, child abuse, and fingerprint information originally submitted shall remain valid for 60 months. Complete details are available in the School of Education office.
- The FBI fingerprinting must be done in Pennsylvania, following these directions:
  1. Go to [www.pa.cogentid.com](http://www.pa.cogentid.com)
  2. Click on PA Department of Education.
  3. Register online.
  4. Once an individual registers, a code number is given. This number must be retained by the individual.
  5. To be fingerprinted, an individual must go to a designated fingerprinting site, taking the code number and a picture ID. Refer to [www.pa.cogentid.com](http://www.pa.cogentid.com) for a list of all designated sites.
  6. Once the individual has been fingerprinted, he/she must submit the registration identification PAE number to the School of Education.
  7. After processing the PAE number, the individual will receive a copy of the clearance via email.
- To enhance the safety of students, Act 82 of 2012 expands the provisions of Act 24. The Arrest or Conviction Report and Certification Form associated with Act 82 must be completed by teacher preparation candidates prior to participation in classroom teaching, clinical, or field experience. The form must also be completed by candidates to report arrests or convictions within 72 hours of the occurrence of such arrest or conviction. See the form for all reportable offenses. The form is available in the School of Education office.
- **Act 126 Child Abuse Training (3-hours):** Due to PDE Act 126 Child Abuse Recognition and Reporting Act, the PA Department of Education now requires a 3-hour seminar



which will include recognition of the signs of abuse, mandatory reporting requirements, maintenance of professional and appropriate relationships with students, etc. All school districts in the Erie area are requiring this clearance in order to student teach or complete a field experience in their schools. ACT 126 training can be completed online free of charge at [www.reportabuse.pa.pitt.edu](http://www.reportabuse.pa.pitt.edu).

- Candidates whose clearances are not on file during the first month of the semester in which they are enrolled for their first field experience will be required to drop the course from their schedules.
- Out-of-state candidates are also subject to background checks and must follow the same directions as residents of Pennsylvania.
- Candidates must have completed a Diocesan Creating a Safe Environment training session prior to the first field experience. The one hour training is offered free of charge online at [www.eriecd.org/protectyouth.htm](http://www.eriecd.org/protectyouth.htm).
- Candidates must have a valid negative TB test on file in the School of Education prior to the first field experience. Arrangements for the test are the responsibility of the teacher candidate.

All secondary majors also must earn a passing grade on each field experience before the next experience can be completed.

The grades for field experiences in the PreK-4, 4-8, and Special Education PreK-8 programs are included as part of specific courses. Ratings in the field experience must be satisfactory in order to pass the course.

Student teaching is a capstone experience. In order to qualify for student teaching, teacher candidates must have met or exceeded all program requirements. In addition, candidates for student teaching must do the following:

- Demonstrate acceptance into the School of Education.
- Apply for student teaching one year prior to beginning the experience.
- Demonstrate overall satisfactory ratings in the area of professional dispositions.
- Have a valid negative TB test on file in the School of Education prior to the first day of student teaching. Arrangements for the test are the responsibility of the teacher candidate.

If candidates are graduating in the semester of their student teaching experience, they are encouraged to complete the content specific exams designated by the Pennsylvania Department of Education prior to student teaching. Passage of these exams is required for recommendation for Level I teaching certification in Pennsylvania.

### **Individuals Returning for Initial Certification**

Individuals with a BA or BS degree who are returning for certification must apply and be accepted through the University's Center for Adult Learning and meet all criteria for admission to the School of Education. Post-baccalaureate teacher candidates are not required to meet the basic skills requirements.

### **Denial of Admission to the School of Education**

An overall grade point average of 3.0 must be maintained. Individuals who do not meet state mandated minimums are not eligible for admission into the School of Education. Incomplete School of Education applications will result in denial of admission.

Application essays that earn a score of less than 15 will have one opportunity for revision. If the second revision earns a score of less than 15, the candidate will be denied admission to the School of Education.

### **Retention in the School of Education**

Once admitted to the School of Education, candidates must abide by the following retention policies to remain in the program:

- **Candidates must maintain a minimum grade point average of 3.0 or greater in all coursework.**
- Candidates must maintain a C or better in all required coursework in professional education and the chosen teaching specialization(s).
- Candidates must successfully complete field experience requirements prescribed in the chosen teaching specialization(s).
- Candidates must demonstrate professional dispositions that are appropriate for teaching and managing instruction in diverse learning environments.
- The Director of the School of Education may recommend re-evaluation of status for any candidate previously admitted to the program when evidence exists that the individual may be unsuitable for the teaching profession.
- Only candidates meeting the Pennsylvania Department of Education requirements at the time of application are eligible to be recommended for certification.
- In some instances, the University may award a degree although the candidate is not eligible to be recommended for teacher certification.

### **Early Childhood Education PreK-4**

The Early Childhood PreK-4 program develops skilled professionals who create developmentally appropriate, child-centered curricula, instruction, and assessment; value and nurture children's development and their cognitive, physical, and social well-being; and respect diversity.

Gannon's Early Childhood Education curriculum provides a solid foundation in development and learning theory as well as instruction in content areas including language and literacy, mathematics, physical activity, creative arts, social studies, and science.

Gannon's unique developmental field experiences provide a practical hands-on application of knowledge with a diverse population of young children across all socioeconomic and cultural levels.

**When combined with the Special Education PreK-8 curriculum, teacher candidates in the Early Childhood program will have additional opportunities for employment.**

### **Middle Level 4-8**

The Middle Level Grades 4-8 programs develop skilled practitioners who will improve the educational experiences of young adolescents by delivering challenging and engaging curricula that are multifaceted and integrative and promote character development as well as developmentally appropriate growth.

Gannon's Grades 4-8 Middle Level Certification programs lead to a Bachelor of Science degree with certification in 13 possible areas. The curriculum provides extensive field-based experiences in both self-contained and content-specific classrooms in rural, urban, and suburban classrooms.

The professional education core creates a foundation for successful clinical practice. This core set of courses emphasizes middle level philosophy and strategies for success with young adolescents, regardless of whether the school is an elementary, middle, or junior high school. The curriculum includes courses designed to provide content-area expertise as well as foundational knowledge in all core subject areas. These courses require field-based experiences that total approximately 340 hours before student teaching.

**When combined with the Special Education PreK-8 curriculum, teacher candidates in the Middle Level program will have additional opportunities for employment.**

### Special Education PreK-8

The Special Education program prepares highly-qualified teachers who will meet the diverse educational needs of individuals with exceptionalities and all learners through the individualization of learning environments and instruction to be delivered in collaboration with general education.

A wide variety of field experiences are available to special education candidates. Experiences are available in life skills, emotional support, learning support, and autistic support classrooms.

The special education program contains specific content geared for learners with disabilities guided by the standards of the Council for Exceptional Children.

Through coursework, candidates develop extensive knowledge of law, policies, and procedures required of a special education professional.

Candidates are invited to join the Gannon University for Exceptional Children (GUSEC), a professional organization that participates in worthwhile community events providing beneficial experiences for individuals with disabilities, volunteers, and teacher candidates.

Gannon has a close affiliation with the Barber National Institute, a multi-faceted facility that provides education and services to individuals and their families.

The Special Education program exposes teacher candidates to the latest in assistive technologies and best practices in the field of special education.

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## SECONDARY EDUCATION

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The Secondary programs promote excellence in content knowledge, intellectual skills, and dispositions by emphasizing extensive practical field experiences, professional development, research, and practices which support the developmental needs of students.

Secondary teacher candidates receive a degree in their content area and are prepared for certification in the following areas:

Biology 7-12	Mathematics 7-12
English 7-12	Social Studies 7-12

These programs prepare teacher candidates to work in content-specific, inclusive, and diverse settings through a combination of required courses in Special Education and English as a Second Language as well as practical experiences in rural, urban, and suburban classrooms.

Secondary majors have unique opportunities to develop content-area expertise through internships in summer programs, international travel, completing coursework in off-campus locations such as Yellowstone National Park, writing for the Gannon newspaper and literary magazine, or working in the academic tutoring centers.

### SECONDARY PROFESSIONAL EDUCATION CORE – 38 CREDITS

- 3 Psychology of Learning and Teaching/EDCR 101
- 1 Foundations of Teaching/EDCR 103
- 3 Instructional Design and the Secondary Education Classroom/  
Field Experience/EDCR 206
- 1 Methods and Materials of Instruction Seminar/Field Experience/EDCR 321
- 3 Assessment and Evaluation/Field Experience/EDCR 330
- 3 Professional Seminar in Education/EDCR 401
- 3 Methods/Materials for ESL/ELL/Field Experience/EDCR 420
- 0 Secondary Education Field Experience/EDFL 101
- 0 Secondary Education Field Experience/EDFL 102

- 0 Secondary Education Field Experience/EDFL 103
- 12 Student Teaching/EDFL 410
- 3 Literacy Development, Strategies, and Assessments/Field Experience/MLED 301
- 3 Special Education Overview/SPED 101
- 3 Meeting the Need of Students with Exceptionalities Grades 7-12/  
Field Experience/SPED 340

## EARLY CHILDHOOD EDUCATION

### Associate Degree

This 64-credit two-year program is designed to meet entry-level Pennsylvania requirements for assistant teachers in preschools and kindergartens, as well as childcare/learning centers and Head Start programs. A GPA of 2.0 is required for graduation with an Associate degree.

For those individuals who complete the Associate degree and decide to continue their education, all qualifying credits earned in the program within a seven-year time frame will transfer to the four year baccalaureate degree in Early Childhood PreK-4.

Candidates who wish to earn teacher certification in Early Childhood PreK-4 will need to meet the Pennsylvania Department of Education requirements in effect at the time of application for certification.

## EARLY CHILDHOOD EDUCATION/

## EARLY INTERVENTION

### Associate Degree

This 68-credit two-year program is designed to meet entry-level Pennsylvania requirements for assistant teachers in preschools and kindergartens, as well as childcare/learning centers and Head Start programs. A GPA of 2.0 is required for graduation with an Associate degree.

For those individuals who complete the Associate degree and decide to continue their education, all qualifying credits earned in the program within a seven-year time frame will transfer to the four year baccalaureate degree in Early Childhood PreK-4 **or** Early Childhood PreK-4/Special Education PreK-8.

Candidates who wish to earn teacher certification in Early Childhood PreK-4 **or** Early Child PreK-4/Special Education PreK-8 will need to meet the Pennsylvania Department of Education requirements in effect at the time of application for certification.

## MINORS

The School of Education offers four education minors: The Education Minor, the Special Education and Diversity Minor, the Exceptional Child Minor, and the Training and Development Minor. Each minor provides opportunities for students to study aspects of the field of education that are relevant to their personal interests or professional aspirations. Completing one of these minors may position students to pursue education related careers or graduate programs, as well as develop understanding of education processes and issues that will benefit them as informed citizens and potential parents. The Training and Development Minor in particular would be advantageous to business majors.

Completing one of the Education minors does not result in eligibility for Pennsylvania teacher certification. Students may complete all or part of one of the minors and then decide to pursue teacher certification. In this case, all qualifying credits earned in the minor within a seven-year time frame may be applied to a teacher certification program at Gannon.

Students who declare one of the Education minors should work closely with the Director of the School of Education to receive assistance in planning course selections best suited to their interests or aspirations.

### Early Childhood Education PreK-4 Curriculum

(Numerals in front of courses indicate credits)

<b>FRESHMAN</b>	
<i>Fall</i>	
3	Psychology of Learning/Teaching/ EDCR 101
1	Foundations of Teaching/EDCR 103
2	First-Year Seminar/EDCR 104 *
3	Public Speaking/SPCH 111
3	College Composition/LENG 111
3	Quantitative Literacy/MATH 103
3	Introduction to Sacred Scripture/ LTHE 121
18	
<b>SOPHOMORE</b>	
<i>Fall</i>	
3	Child Development: K-4th Grade/ ECED 102
3	Early Language/Literacy Development/ECED 200 **
2	Concepts/Methods: Math I/ECED 204 *
3	Introduction to Philosophy/LPHI 131
3	History Without Borders/LHST 111
3	Meeting Learning Needs Students w/Except: PreK-8/SPED 245*
17	
<b>JUNIOR</b>	
<i>Fall</i>	
3	Concepts/Methods: Literacy/ Reading 2-4/ECED 203
3	Data Driven Instruction: PreK-4/ ECED 306 *
3	Concepts/Methods: Science/ Technology/ECED 308
3	Expressive Arts/EDCR 302
3	Literacy for Students w/ Exceptionalities/SPED 320 ++
15	
<b>SENIOR</b>	
<i>Fall</i>	
3	Integrated Curriculum PreK-4/ ECED 300 **
<i>Spring</i>	
3	Early Childhood Overview/ ECED 100 *
3	Child Development: Birth-Age 5/ ECED 101 *
3	Instructional Design & the Early Childhood Classroom/ECED 103 +
3	Critical Analysis/Composition/ LENG 112
3	Fundamentals of Mathematics/ MATH 105
3	Special Education Overview/ SPED 101
18	
<i>Spring</i>	
3	Concepts/Methods: Early Lit/ Reading PreK-1/ECED 202 **
2	Concepts/Methods: Math II/ ECED 205 *
3	Literature Series/LENG
3	Philosophy of Ethical Responsibility/ LPHI 237 <u>or</u> Theology of Moral Responsibility/LTHE 227
1	Leadership Seminar
3	Science Series
15	
<i>Spring</i>	
3	Concepts/Methods: Social Studies/ ECED 307
3	Family Involvement in Educational System/ECED 309
3	Physical Well-Being of the Child/ ECED 310
3	Children's Literature/EDCR 300
3	Program/Assessment in Special Ed/ SPED 343 *
15	
<i>Spring</i>	
3	Professional Seminar/EDCR 401
12	Student Teaching/EDFL 410

- 3 Concepts/Methods: ESL/ELL/  
EDCR 420 \*
- 3 Philosophy II Series/LPHI
- 3 Theology II Series/LTHE
- 3 Collaboration/Partnerships in  
Special Ed/SPED 242

15

15

Total credits: 128

\*Field experience embedded throughout the semester (6-15 hrs.)

+Field experience embedded throughout the semester (60 hrs.)

++Field experience embedded throughout the semester (30 hrs.)

\*\*Three-week field experience (90 hrs.)

{ Cohort Courses

**Early Childhood Education PreK-4 and Special Education PreK-8 Curriculum**

*(Numerals in front of courses indicate credits)*

**FRESHMAN**

*Fall*

- 3 Psychology of Learning/Teaching/  
EDCR 101
- 1 Foundations of Teaching/EDCR 103
- { 2 First-Year Seminar/EDCR 104 \*
- 3 Public Speaking/SPCH 111
- 3 College Composition/LENG 111
- 3 Quantitative Literacy/MATH 103
- 3 Introduction to Sacred Scripture/  
LTHE 121

18

*Spring*

- 3 Early Childhood Overview/  
ECED 100 \*
- 3 Child Development: Birth-Age 5/  
ECED 101 \*
- 3 Instructional Design & the Early  
Childhood Classroom/ECED 103 +
- 3 Critical Analysis/Composition/  
LENG 112
- 3 Fund. of Mathematics/MATH 105
- 3 Special Education Overview/SPED 101

18

**SOPHOMORE**

*Fall*

- 3 Child Development: K-4th Grade/  
ECED 102
- 3 Early Language/Literacy Development/  
ECED 200 \*\*
- 2 Concepts/Methods: Math I/ECED 204 \*
- 3 Introduction to Philosophy/LPHI 131
- 3 History Without Borders/LHST 111
- 3 Meeting Learning Needs Students  
w/Except: PreK-8/SPED 245\*

17

*Spring*

- 3 Concepts/Methods: Early Lit/  
Reading PreK-1/ECED 202 \*\*
- 2 Concepts/Methods: Math II/  
ECED 205 \*
- 3 Adolescent Literature (Literature  
Series)/MLED 201
- { 3 Philosophy of Ethical Responsibility/  
LPHI 237
- 1 Leadership Seminar
- 3 Science Series

15

**JUNIOR**

*Fall*

- 3 Concepts/Methods: Literacy/  
Reading 2-4/ECED 203
- 3 Integrated Curriculum: PreK-4/  
ECED 300 \*\*

*Spring*

- 3 Concepts/Methods: Social Studies/  
ECED 307
- 3 Family Involvement in Educational  
System/ECED 309

3	Concepts/Methods: Science/ Technology/ECED 308	3	Physical Well Being of the Child/ ECED 310
3	Expressive Arts/EDCR 302	3	Literacy for Students w/ Exceptionalities/SPED 320 ++
3	Data-Driven Instruction: Special Education/SPED 306 *	3	Positive Behavior Supports/ Interventions/SPED 322
3	High Incidence Disabilities/SPED 308	3	Program/Assessment in Special Ed/ SPED 343 *
<hr/>		<hr/>	
18		18	

## SENIOR

*Fall*

3	Concepts/Methods: ESL/ELL/EDCR 420 *
3	Philosophy II Series/LPHI
3	Theology II Series/LTHE
3	Collaboration/Partnerships in Special Ed/SPED 242
3	Low Incidence Disabilities/SPED 307 **
<hr/>	
15	

*Spring*

3	Professional Seminar/EDCR 401
12	Student Teaching/EDFL 410
<hr/>	
15	

Total credits: 134

\*Field experience embedded throughout the semester (6-15 hrs.)

+Field experience embedded throughout the semester (60 hrs.)

++Field experience embedded throughout the semester (30 hrs.)

\*\*Three-week field experience (90 hrs.)

{ Cohort Courses

**Middle Level Education 4-8****Concentration: English/Language Arts and Reading Curriculum***(Numerals in front of courses indicate credits)*

## FRESHMAN

*Fall*

1	Foundations of Teaching/EDCR 103
2	First-Year Seminar/EDCR 104 *
3	Fundamentals of Speech/SPCH 111
3	College Composition/LENG 111
3	History without Borders/LHST 111
3	College Algebra/MATH 111
<hr/>	
15	

*Spring*

3	Issues in Science/Technology/ CHEM 166
3	Psychology of Learning/Teaching/ EDCR 101
3	Critical Analysis/Composition/ LENG 112
3	Fundamentals of Mathematics/ MATH 105
3	Special Education Overview/ SPED 101
<hr/>	
15	

## SOPHOMORE

*Fall*

3	Introduction to Literature/LENG 247
3	Introduction to Sacred Scripture/ LTHE 121
3	Introduction to Philosophy/LPHI 131
3	Instructional Design & the Middle Level Classroom/MLED 200 +
<hr/>	

*Spring*

3	World Geography/GEOG 201
3	Philosophy of Ethical Responsibility/ LPHI 237 or Theology of Moral Resp/LTHE 227
1	Leadership Seminar/LHES 240
3	Applied Statistics/MATH 213
<hr/>	

3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	<b>or</b> Psychological Statistics I/ PSYC 211
		3 Adolescent Literature/MLED 201 +
		3 Adolescent Dev./MLED 202 *
<hr/> 15		<hr/> 16
	JUNIOR	
	<i>Fall</i>	<i>Spring</i>
3	General Biology/BIOL 101 <b>or</b> Human Biology/BIOL 104	3 U.S. Government/Politics/POLI 111
3	Intro to Nanotechnology/CHEM 121	3 Theology II Series/LTHE
3	Introduction to Linguistics/ENGL 217	3 Concepts/Methods: ESL/ELL/ EDCR 420 *
3	Philosophy II Series/LPHI	3 Program Plan/Assessment Special Education/SPED 343 *
3	Quantitative Literacy/MATH 103	Elective
3	Literacy Dev Strategies Assessment: 4-8/MLED 301 ++	3 Elective
<hr/> 18		<hr/> 18
	SENIOR	
	<i>Fall</i>	<i>Spring</i>
3	Expressive Arts/EDCR 302	3 Professional Seminar/EDCR 401
1	Methods/Materials for Instr Seminar/ EDCR 321 *	12 Student Teaching/EDFL 410
3	Advanced Composition/ENGL 211	
3	Structure of English Language/ENGL 363	
3	Concepts Natural Science/MLED 302 ++	
3	Data Driven Instruction on SpEd/ SPED 306*	
<hr/> 16		<hr/> 15

Total credits: 128

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

### Middle Level Education 4-8

#### Concentration: Mathematics Curriculum

(Numerals in front of courses indicate credits)

	FRESHMAN	
	<i>Fall</i>	<i>Spring</i>
1	Foundations of Teaching/EDCR 103	3 Psychology of Learning/Teaching/ EDCR 101
{2	First-Year Seminar/EDCR 104 *	3 Critical Analysis/Composition/ LENG 112
3	Fundamentals of Speech/SPCH 111	3 Fundamentals of Math/MATH 105
3	College Composition/LENG 111	3 Calculus I/MATH 140
3	History without Borders/LHST 111	3 Special Education Overview/ SPED 101
3	Introduction to Sacred Scripture/ LTHE 121	
3	Precalculus/MATH 135	
<hr/> 18		<hr/> 15



## SOPHOMORE

*Fall*

- 3 Issues in Science/Technology/CHEM 166  
 3 Introduction to Philosophy/LPHI 131  
 3 Calculus II/MATH 141  
 3 Discrete Mathematics/MATH 222  
 3 Instructional Design & the Middle  
 Level Classroom/MLED 200 +  
 3 Meet Needs Students Exceptionalities:  
 PreK-8/SPED 245 \*

18

*Spring*

- 3 World Geography/GEOG 201  
 3 Philosophy of Ethical Responsibility/  
 LPHI 237 **or** Theology of Moral  
 Resp/LTHE 227  
 1 Leadership Seminar/LHES 240  
 3 History of Mathematics/MATH 260  
 3 Adolescent Literature/MLED 201 +  
 3 Adolescent Dev./MLED 202 \*

16

## JUNIOR

*Fall*

- 3 General Biology/BIOL 101 **or**  
 Human Biology/BIOL 104  
 3 Expressive Arts/EDCR 302  
 1 Methods/Materials for Instr Seminar/  
 EDCR 321 \*  
 3 Calculus III/MATH 242  
 3 Literacy Dev, Strategies, Assessments/  
 MLED 301 ++  
 3 Applications of Mathematics/MLED 303 +

16

*Spring*

- 3 Intro to Nanotechnology/CHEM 121  
 3 Theology II Series/LTHE  
 3 Applied Statistics/MATH 213  
 3 Linear Algebra/MATH 252  
 3 US Government/Politics/POLI 111  
 3 Program/Plan Assessment Special  
 Education/SPED 343 \*

18

## SENIOR

*Fall*

- 3 Concepts/Methods ESL/ELL/  
 EDCR 420 \*  
 3 Philosophy II Series/LPHI  
 3 Geometry/MATH 226  
 3 Concepts of Natural Science/  
 MLED 302 ++  
 3 Data Driven Instruction Sp Ed/  
 SPED 306 \*

15

*Spring*

- 3 Professional Seminar/EDCR 401  
 12 Student Teaching/EDFL 410

15

Total credits: 131

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

**Middle Level Education 4-8****Concentration: Science Curriculum**

(Numerals in front of courses indicate credits)

## FRESHMAN

*Fall*

- 1 Foundations of Teaching/EDCR 103  
 { 2 First-Year Seminar/EDCR 104 \*  
 3 Fundamentals of Speech/SPCH 111  
 3 College Composition/LENG 111

*Spring*

- 3 Issues in Science/Technology/  
 CHEM 166  
 3 Psychology of Learning/Teaching/  
 EDCR 101

3	Introduction to Sacred Scripture/ LTHE 121	3	Critical Analysis/Composition/ LENG 112
3	College Algebra/MATH 111	3	Fundamentals of Mathematics/ MATH 105
		3	Special Education Overview/ SPED 101
15		15	
SOPHOMORE			
<i>Fall</i>		<i>Spring</i>	
3	General Biology/BIOL 101	3	Human Biology/BIOL 104
3	History without Borders/LHST 111	3	Instructional Technology/EDCR 102
3	Introduction to Philosophy/LPHI 131	3	Philosophy of Ethical Responsibility/ LPHI 237 <b>or</b> Theology of Moral Resp/LTHE 227
3	Quantitative Literacy/MATH 103	{	1 Leadership Seminar/LHES 240
3	Instructional Design & the Middle Level Classroom/MLED 200 +		
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3	Adolescent Literature/MLED 201 +
		3	Adolescent Dev./MLED 202 *
18		16	
JUNIOR			
<i>Fall</i>		<i>Spring</i>	
3	Environmental Issues/BIOL 103	3	Intro to Nanotechnology/CHEM 121
1	Methods/Materials for Instr Seminar/ EDCR 321 *	3	Expressive Arts/EDCR 302
3	Intro. to Environmental Sci. I/ENV 120	3	World Geography/GEOG 201
3	Reading Dev, Strategies, Assessments/ MLED 301 ++	3	Theology II Series/LTHE
3	Applied Statistics/MATH 213 <i>or</i> Psychological Statistics I/PSYC 211	3	US Government/Politics/POLI 111
3	Data Driven Instruction Sp Ed/SPED 306 *	3	Program/Plan Assessment Special Education/SPED 343 *
16		18	
SENIOR			
<i>Fall</i>		<i>Spring</i>	
{ 3	Physiological Chemistry/CHEM 105	3	Professional Seminar/EDCR 401
{ 1	Physiological Chemistry Lab/CHEM 108	12	Student Teaching/EDFL 410
3	Concepts/Methods: ESL/ELL/EDCR 420 *		
{ 3	Physical Geology/ENV 101		
{ 1	Physical Geology Lab/ENV 102		
3	Philosophy II Series/LPHI		
3	Concepts of Natural Science/MLED 302 ++		
17		15	

Total credits: 130

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

**Middle Level Education 4-8****Concentration: Social Studies Curriculum***(Numerals in front of courses indicate credits)*

<b>FRESHMAN</b>	
<i>Fall</i>	<i>Spring</i>
1 Foundations of Teaching/EDCR 103	3 Issues in Science/Tech/CHEM 166
2 First-Year Seminar/EDCR 104 *	3 Psyc of Learning/Teaching/EDCR 101
3 Fundamentals of Speech/SPCH 111	3 Critical Analysis/Comp/LENG 112
3 College Composition/LENG 111	3 Fund of Mathematics/MATH 105
3 History without Borders/LHST 111	3 Special Educ. Overview/SPED 101
3 College Algebra/MATH 111	
15	15
<b>SOPHOMORE</b>	
<i>Fall</i>	<i>Spring</i>
3 General Biology/BIOL 101 <b>or</b>	3 World Geography/GEOG 201
Human Biology/BIOL 104	3 Philosophy of Ethical Responsibility/LPHI 237 <b>or</b> Theology of Moral Resp/LTHE 227
3 Introduction to Philosophy/LPHI 131	1 Leadership Seminar/LHES 240
3 Intro. to Sacred Scripture/LTHE 121	3 Adolescent Literature/MLED 201 +
3 Quantitative Literacy/MATH 103	3 Adolescent Dev./MLED 202 *
3 Instructional Design & the Middle Level Classroom/MLED 200 +	3 U.S. Government/Politics/POLI 111
3 Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	
18	16
<b>JUNIOR</b>	
<i>Fall</i>	<i>Spring</i>
3 Expressive Arts/EDCR 302	3 Intro to Nanotechnology/CHEM 121
1 Methods/Materials for Instr Seminar/EDCR 321 *	3 Concepts/Methods: ESL/ELL/EDCR 420 *
3 History of U.S. to 1865/HIST 221	3 U.S. History 1865 to Present/HIST 222
3 Philosophy II Series/LPHI	3 Applied Statistics/MATH 213 <b>or</b> Psychological Statistics I/PSYC 211
3 Literacy Dev, Strategies, Assessments/MLED 301 ++	3 Intro to International Rel/POLI 133
3 Inquiry/Analysis in PA History/Government/MLED 304 +	3 Program/Plan Assessment Special Education/SPED 343 *
16	18
<b>SENIOR</b>	
<i>Fall</i>	<i>Spring</i>
3 Prin of Microeconomics/BCOR 111 <b>or</b>	3 Professional Seminar/EDCR 401
Prin of Macroeconomics/BCOR 112	12 Student Teaching/EDFL 410
3 Theology II Series/LTHE	
3 Concepts of Natural Sci./MLED 302 ++	
3 Cultural Anthropology/SOCI 292	
3 Data Driven Instr. Sp Ed/SPED 306 *	
15	15

Total credits: 128

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

**Middle Level Education 4-8**

**Concentration: English/Language Arts and Reading & Mathematics Curriculum**

(Numerals in front of courses indicate credits)

FRESHMAN				
	<i>Fall</i>	<i>Spring</i>		
1	Foundations of Teaching/EDCR 103	3	Psychology of Learning/Teaching/EDCR 101	
{	2	First-Year Seminar/EDCR 104 *		
	3	Fundamentals of Speech/SPCH 111	3	Critical Analysis/Composition/LENG 112
3	College Composition/LENG 111			
3	Intro. to Sacred Scripture/LTHE 121	3	Fundamentals of Math/MATH 105	
3	Precalculus/MATH 135	3	Calculus I/MATH 140	
		3	Special Educ. Overview/SPED 101	
15		15		
SOPHOMORE				
	<i>Fall</i>	<i>Spring</i>		
3	Issues in Sci/Technology/CHEM 166	{	3	Philosophy of Ethical Responsibility/LPHI 237 <b>or</b> Theology of Moral Resp/LTHE 227
3	History of West/World/LHST 111			
3	Introduction to Philosophy/LPHI 131		1	Leadership Seminar/LHES 240
3	Discrete Math I/MATH 222		3	Calculus II/MATH 141
3	Instructional Design & the Middle Level Classroom/MLED 200 +		3	Applied Statistics/MATH 213
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3	Adolescent Literature/MLED 201 +	
		3	Adolescent Dev./MLED 202 *	
18		16		
JUNIOR				
	<i>Fall</i>	<i>Spring</i>		
3	General Biology/BIOL 101 <b>or</b> Human Biology/BIOL 104	3	Concepts/Methods: ESL/ELL/EDCR 420 *	
3	Intro to Nanotechnology/CHEM 121	3	World Geography/GEOG 201	
1	Methods/Materials for Instr Seminar/EDCR 321 *	3	Theology II Series/LTHE	
3	Geometry/MATH 226	3	U.S. Government/Politics/POLI 111	
3	Literacy Dev Strategies Assessment: 4-8/MLED 301 ++	3	Program Plan/Assessment Special Education/SPED 343 *	
3	Applications of Math/MLED 303 +	3	Elective	
16		18		
SENIOR				
	<i>Fall</i>	<i>Spring</i>		
3	Expressive Arts/EDCR 302	3	Professional Seminar/EDCR 401	
3	Structure of English Lang./ENGL 363	12	Student Teaching/EDFL 410	
3	Philosophy II Series/LPHI			
3	Concepts Natural Science/MLED 302 ++			
3	Data Driven Instruction Sp Ed/SPED 306 *			
15		15		

Total credits: 128

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

### Middle Level Education 4-8

#### Concentration: English/Language Arts and Reading & Science Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
	<i>Fall</i>		<i>Spring</i>
1	Foundations of Teaching/EDCR 103	3	Issues in Science/Technology/ CHEM 166
{2	First-Year Seminar/EDCR 104 *		
3	Fundamentals of Speech/SPCH 111	3	Psychology of Learning/Teaching/ EDCR 101
3	College Composition/LENG 111	3	Critical Analysis/Composition/ LENG 112
3	Intro. to Sacred Scripture/LTHE 121	3	Fundamentals of Math/MATH 105
3	College Algebra/MATH 111	3	Special Educ. Overview/SPED 101
—		—	
15		15	
SOPHOMORE			
	<i>Fall</i>		<i>Spring</i>
3	General Biology/BIOL 101	3	Instructional Technology/EDCR 102
3	History of West/World/LHST 111	3	World Geography/GEOG 201
3	Introduction to Philosophy/LPHI 131	3	Philosophy of Ethical Responsibility/ LPHI 237 <b>or</b> Theology of Moral Resp/LTHE 227
3	Quantitative Literacy/MATH 103	1	Leadership Seminar/LHES 240
3	Instructional Design & the Middle Level Classroom/MLED 200 +	3	Adolescent Literature/MLED 201 +
—		3	Adolescent Dev./MLED 202 *
15		16	
JUNIOR			
	<i>Fall</i>		<i>Spring</i>
3	Human Biology/BIOL 104	3	Intro to Nanotechnology/CHEM 121
3	Expressive Arts/EDCR 302	3	Concepts/Methods: ESL/ELL/ EDCR 420 *
3	Philosophy II Series/LPHI	3	Theology II Series/LTHE
3	Applied Statistics/MATH 213 <b>or</b> Psychological Statistics I/PSYC 211	3	US Government/Politics/POLI 111
3	Literacy Dev Strategies Assessment: 4-8/MLED 301 ++	3	Program Plan/Assessment Special Ed/SPED 343 *
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3	Elective
—		—	
18		18	
SENIOR			
	<i>Fall</i>		<i>Spring</i>
1	Methods/Materials for Instr Seminar/EDCR 321 *	3	Professional Seminar/EDCR 401
		12	Student Teaching/EDFL 410

3	Structure of English Language/ ENGL 363	
{3	Physical Geology/ENV 101	
1	Physical Geology Lab/ENV 102	
3	Concepts of Natural Sci./MLED 302++	
3	Data Driven Instr. Sp Ed/SPED 306 *	
3	Elective	
17		15

Total credits: 129

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

**Middle Level Education 4-8**  
**Concentration: Mathematics and Science Curriculum**

*(Numerals in front of courses indicate credits)*

FRESHMAN		
<i>Fall</i>		
1	Foundations of Teaching/EDCR 103	3
{2	First-Year Seminar/EDCR 104 *	3
3	Fundamentals of Speech/SPCH 111	3
3	College Composition/LENG 111	3
3	History of West/World/LHST 111	3
3	Precalculus/MATH 135	3
		3
		3
		3
15		18
SOPHOMORE		
<i>Fall</i>		
3	Issues in Science/Technology/CHEM 166	3
3	Introduction to Philosophy/LPHI 131	{
3	Discrete Mathematics/MATH 222	
3	Instructional Design & the Middle Level Classroom/MLED 200 +	
3	U.S. Government/Politics/POLI 111	1
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3
		3
18		16
JUNIOR		
<i>Fall</i>		
3	Expressive Arts/EDCR 302	3
1	Materials/Methods for Instr Seminar/ EDCR 321 *	3
{3	Physical Geology/ENV 101	3
1	Physical Geology Lab/ENV 102	3
3	Geometry/MATH 236	3
<i>Spring</i>		
3	Intro to Nanotechnology/CHEM 121	
3	Instructional Technology/EDCR 102	
3	World Geography/GEOG 201	
3	Theology II Series/LTHE	
3	Program/Plan Assessment Special Ed/SPED 343 *	

3	Literacy Dev, Strategies, Assessments/ MLED 301 ++	
3	Applications of Math/MLED 303 +	
<u>17</u>		<u>15</u>
SENIOR		
	<i>Fall</i>	<i>Spring</i>
3	General Biology/BIOL 101	3 Professional Seminar/EDCR 401
3	Human Biology/BIOL 104	12 Student Teaching/EDFL 410
3	Concepts/Meth: ESL/ELL/EDCR 420 *	
3	Philosophy II Series/LPHI	
3	Concepts Natural Science/MLED 302 ++	
3	Data Driven Instruction Sp Ed/ SPED 306 *	
<u>18</u>		<u>15</u>

Total credits: 132

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

#### Middle Level Education 4-8

##### Concentration: Social Studies and Mathematics Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN		
	<i>Fall</i>	<i>Spring</i>
1	Foundations of Teaching/EDCR 103	3 Psychology of Learning/Teaching/ EDCR 101
2	First-Year Seminar/EDCR 104 *	3 Critical Analysis/Composition/ LENG 112
3	Fundamentals of Speech/SPCH 111	3 Introduction to Sacred Scripture/ LTHE 121
3	College Composition/LENG 111	3 Fundamentals of Math/MATH 105
3	History of West/World/LHST 111	3 Calculus I/MATH 140
3	Precalculus/MATH 135	3 Special Educ. Overview/SPED 101
<u>15</u>		<u>18</u>
SOPHOMORE		
	<i>Fall</i>	<i>Spring</i>
3	Intro to Nanotechnology/CHEM 121	3 Philosophy of Ethical Responsibility/ LPHI 237 <u>or</u> Theology of Moral Resp/LTHE 227
3	Issues in Sci/Technology/CHEM 166	
3	Introduction to Philosophy/LPHI 131	
3	Discrete Mathematics/MATH 222	1 Leadership Seminar/LHES 240
3	Instructional Design & the Middle Level Classroom/MLED 200 +	3 Calculus II/MATH 141
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3 Applied Statistics/MATH 213
		3 Adolescent Literature/MLED 201 +
		3 Adolescent Dev/MLED 202 *
<u>18</u>		<u>16</u>

JUNIOR			
<i>Fall</i>		<i>Spring</i>	
3	Expressive Arts/EDCR 302	3	Concepts/Methods: ESL/ELL/ EDCR 420 *
1	Methods/Materials for Instr Seminar/ EDCR 321 *	3	World Geography/GEOG 201
3	History of U.S. to 1865/HIST 221	3	History of U.S. 1865 to Present/ HIST 222
3	Geometry/MATH 226	3	Philosophy II Series/LPHI
3	Literacy Dev, Strategies, Assessments/ MLED 301 ++	3	U.S. Government/Politics/POLI 111
3	Applications of Math/MLED 303 +	3	Program/Plan Assessment Special Ed/SPED 343 *
<hr/>		<hr/>	
16		18	
SENIOR			
<i>Fall</i>		<i>Spring</i>	
3	General Biology/BIOL 101 <u>or</u> Human Biology/BIOL 104	3	Professional Seminar/EDCR 401
3	Theology II Series/LTHE	12	Student Teaching/EDFL 410
3	Concepts Natural Science/MLED 302 ++		
3	Inquiry/Analysis in PA History/ Government/MLED 304 +		
3	Data Driven Instr Sp Ed/SPED 306 *		
<hr/>		<hr/>	
15		15	

Total credits: 131

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

**Middle Level Education 4-8**  
**Concentration: Social Studies and Science Curriculum**

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>Fall</i>		<i>Spring</i>	
1	Foundations of Teaching/EDCR 103	3	Issues in Science/Technology/ CHEM 166
{	2 First-Year Seminar/EDCR 104 *	3	Psychology of Learning/Teaching/ EDCR 101
	3 Fundamentals of Speech/SPCH 111	3	Critical Analysis/Composition/ LENG 112
3	College Composition/LENG 111	3	Fundamentals of Math/MATH 105
3	History of West/World/LHST 111	3	Special Educ Overview/SPED 101
3	College Algebra/MATH 111		
<hr/>		<hr/>	
15		15	
SOPHOMORE			
<i>Fall</i>		<i>Spring</i>	
3	General Biology/BIOL 101	3	Instructional Technology/EDCR 102
3	Introduction to Philosophy/LPHI 131	3	World Geography/GEOG 201



3	Intro to Sacred Scripture/LTHE 121	3	Philosophy of Ethical Responsibility/ LPHI 237 <b>or</b> Theology of Moral Resp/LTHE 227
3	Quantitative Literacy/MATH 103		
3	Instructional Design & The Middle Level Classroom/MLED 200 +	1	Leadership Seminar/LHES 240
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3	Adolescent Literature/MLED 201 +
		3	Adolescent Dev/MLED 202 *
18		16	

## JUNIOR

*Fall*

3	Intro to Nanotechnology/CHEM 121
1	Materials/Methods for Instr Seminar/ EDCR 321 *
3	History of U.S. to 1865/HIST 221
3	Applied Statistics/MATH 213 <b>or</b> Psychological Statistics I/PSYC 211
3	Literacy Dev, Strategies, Assessments/ MLED 301 ++
3	Inquiry/Analysis in PA History/ Government/MLED 304 +

16

*Spring*

3	Human Biology/BIOL 104
3	Concepts/Methods: ESL/ELL/ EDCR 420 *
3	History of U.S. 1865 to Present/ HIST 222
3	Theology II Series/LTHE
3	U.S. Government/Politics/POLI 111
3	Program Plan/Assessment Special Ed/SPED 343 *

18

## SENIOR

*Fall*

3	Expressive Arts/EDCR 302
3	Physical Geology/ENV 101
1	Physical Geology Lab/ENV 102
3	Philosophy II Series/LPHI
3	Concepts of Natural Science/MLED 302 ++
3	Data Driven Instruction Sp Ed/ SPED 306

16

*Spring*

3	Professional Seminar/EDCR 401
12	Student Teaching/EDFL 410

15

Total credits: 129

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

### Middle Level Education 4-8 and Special Education PreK-8 Concentration: English/Language Arts and Reading Curriculum

(Numerals in front of courses indicate credits)

## FRESHMAN

*Fall*

1	Foundations of Teaching/EDCR 103
2	First-Year Seminar/EDCR 104 *
3	Fundamentals of Speech/SPCH 111
3	College Composition/LENG 111
3	History of West/World/LHST 111
3	Intro. to Sacred Scripture/LTHE 121

*Spring*

3	Issues in Sci./Technology/CHEM 166
3	Psychology of Learning/Teaching/ EDCR 101
3	Critical Analysis/Composition/ LENG 112
3	Fund. of Mathematics/MATH 105

3	College Algebra/MATH 111	3	U.S. Government/Politics/POLI 111
—		3	Special Educ. Overview/SPED 101
18		18	
SOPHOMORE			
<i>Fall</i>		<i>Spring</i>	
3	Intro to Nanotechnology/CHEM 121	3	World Geography/GEOG 201
3	Introduction to Literature/LENG 247	3	Philosophy of Ethical Responsibility/ LPHI 237 <b>or</b> Theology of Moral Resp/LTHE 227
3	Introduction to Philosophy/LPHI 131	}	
3	Quantitative Literacy/MATH 103		1 Leadership Seminar/LHES 240
3	Instructional Design & the Middle Level Classroom/MLED 200 +	3	Applied Statistics/MATH 213 <b>or</b> Psychological Statistics I/PSYC 211
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3	Adolescent Literature/MLED 201 +
—		3	Adolescent Dev./MLED 202 *
18		16	
JUNIOR			
<i>Fall</i>		<i>Spring</i>	
3	General Biology/BIOL 101 <b>or</b> Human Biology/BIOL 104	3	Concepts/Methods: ESL/ELL / EDCR 420 *
3	Introduction to Linguistics/ENGL 217	3	Philosophy II Series/LPHI
3	Literacy Dev Strategies Assessment: 4-8/MLED 301 +	3	Theology II Series/LTHE
3	Collaboration/Partnerships/SPED 242	3	Literature for Student Exceptionalities: PreK-8/SPED 320 +
3	Data-Driven Instruction: Special Education/SPED 306 *	3	Pos Behav Supp/Interv/SPED 322 *
3	High Incidence Disabilities/SPED 308	3	Program Plan/Assessment Special Education/SPED 343 *
18		18	
SENIOR			
<i>Fall</i>		<i>Spring</i>	
3	Expressive Arts/EDCR 302	3	Professional Seminar/EDCR 401
1	Methods/Materials for Instr Seminar/EDCR 321 *	12	Student Teaching/EDFL 410
3	Advanced Composition/ENGL 211		
3	Structure of English Lang./ENGL 363		
3	Concepts Natural Science/MLED 302++		
3	Low Incidence Disabilities/SPED 307++		
16		15	

Total credits: 137

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

**Middle Level Education 4-8 and Special Education PreK-8****Concentration: Mathematics**

(Numerals in front of courses indicate credits)

FRESHMAN		
<i>Fall</i>		<i>Spring</i>
1	Foundations of Teaching/EDCR 103	3 Psychology of Learning/Teaching/EDCR 101
2	First-Year Seminar/EDCR 104 *	3 Critical Analysis/Comp/LENG 112
3	Fundamentals of Speech/SPCH 111	3 Fundamentals of Math/MATH 105
3	College Composition/LENG 111	3 Calculus I/MATH 140
3	History of West/World/LHST 111	3 U.S. Government/Politics/POLI 111
3	Intro. to Sacred Scripture/LTHE 121	3 Special Educ. Overview/SPED 101
3	Precalculus/MATH 135	
18		18
SOPHOMORE		
<i>Fall</i>		<i>Spring</i>
3	Introduction to Philosophy/LPHI 131	3 General Biology/BIOL 101 <u>or</u> Human Biology/BIOL 104
3	Calculus II/MATH 141	3 Philosophy of Ethical Responsibility/LPHI 237 <u>or</u> Theology of Moral Resp/LTHE 227
3	Discrete Mathematics/MATH 222	1 Leadership Seminar/LHES 240
3	Instructional Design & the Middle Level Classroom/MLED 200 +	3 History of Mathematics/MATH 260
3	Collaborations/Partnerships/SPED 242	3 Adolescent Literature/MLED 201 +
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3 Adolescent Dev./MLED 202 *
18		16
JUNIOR		
<i>Fall</i>		<i>Spring</i>
3	Issues in Science/Technology/CHEM 166	3 Theology II Series/LTHE
3	Expressive Arts/EDCR 302	3 Applied Statistics/MATH 213
1	Methods/Materials for Instr Seminar/EDCR 321 *	3 Linear Algebra/MATH 252
3	Calculus III/MATH 242	3 Literature for Student Exceptionalities: PreK-8/SPED 320 ++
3	Applications of Mathematics/MLED 303 +	3 Pos Behav Supp/Interv/SPED 322 *
3	Data-Driven Instruction: Special Education/SPED 306 *	3 Program/Plan Assessment Special Education/SPED 343 *
3	High Incidence Disabilities/SPED 308	
19	(no charge for 19th credit)	18
SENIOR		
<i>Fall</i>		<i>Spring</i>
3	Intro to Nanotechnology/CHEM 121	3 Professional Seminar/EDCR 401
3	Concepts/Methods: ESL/ELL/EDCR 420 *	12 Student Teaching/EDFL 410
3	Philosophy II Series/LPHI	3 World Geography/GEOG 201
3	Geometry/MATH 226	
3	Concepts of Natural Sci./MLED 302++	
3	Low Incidence Disabilities/SPED 307++	
18		18

Total credits: 143

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

**Middle Level Education 4-8 and Special Education PreK-8  
Concentration: Science Curriculum**

*(Numerals in front of courses indicate credits)*

FRESHMAN			
<i>Fall</i>		<i>Spring</i>	
1	Foundations of Teaching/EDCR 103	3	Issues in Sci/Technology/CHEM 166
{ 2	First-Year Seminar/EDCR 104 *	3	Psychology of Learning/Teaching/EDCR 101
3	Fundamentals of Speech/SPCH 111	3	Critical Analysis/Composition/LENG 112
3	College Composition/LENG 111	3	Fund. of Mathematics/MATH 105
3	History of West/World/LHST 111	3	U.S. Government/Politics/POLI 111
3	Intro. to Sacred Scripture/LTHE 121	3	Special Educ. Overview/SPED 101
3	College Algebra/MATH 111		
<hr/>		<hr/>	
18		18	
SOPHOMORE			
<i>Fall</i>		<i>Spring</i>	
3	General Biology/BIOL 101	3	Human Biology/BIOL 104
3	Intro to Nanotechnology/CHEM 121	3	Instructional Technology/EDCR 102
3	Introduction to Philosophy/LPHI 131	3	Philosophy of Ethical Responsibility/LPHI 237 <b>or</b> Theology of Moral Resp/LTHE 227
3	Quantitative Literacy/MATH 103	{	1 Leadership Seminar/LHES 240
3	Instructional Design & the Middle Level Classroom/MLED 200 +		3 Adolescent Literature/MLED 201 +
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *		3 Adolescent Dev./MLED 202 *
			3 Pos Behav Supp/Interv/SPED 322 *
<hr/>		<hr/>	
18		19	(no charge for 19th credit)
JUNIOR			
<i>Fall</i>		<i>Spring</i>	
3	Expressive Arts/EDCR 302	3	Environmental Issues/BIOL 103
1	Methods/Materials for Instr Seminar/EDCR 321 *	3	Concepts/Methods ESL/ELL/EDCR 420
3	Introduction to Environmental Science I/ENV 120	3	Philosophy II Series/LPHI
3	Applied Statistics/MATH 213 <b>or</b> Psychological Statistics I/PSYC 211	3	Theology II Series/LTHE
3	Data-Driven Instruction: Special Ed/SPED 306 *	3	Literature for Student Exceptionalities: PreK-8/SPED 320 ++
3	High Incidence Disabilities/SPED 308	3	Program/Plan Assessment Special Education/SPED 343 *
<hr/>		<hr/>	
16		18	
SENIOR			
<i>Fall</i>		<i>Spring</i>	
{ 3	Physiological Chemistry/CHEM 105	3	Professional Seminar/EDCR 401
{ 1	Physiological Chemistry Lab/CHEM 108	12	Student Teaching/EDFL 410

{ 3	Physical Geology/ENV 101	3	World Geography/GEOG 201
1	Physical Geology Lab/ENV 102		
3	Concepts of Natural Science/MLED 302++		
3	Collaboration/Partnerships/SPED 242		
3	Low Incidence Disabilities/SPED 307++		
<u>17</u>		<u>18</u>	

Total credits: 142

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

### Middle Level Education 4-8 and Special Education PreK-8

#### Concentration: Social Studies Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>Fall</i>		<i>Spring</i>	
1	Foundations of Teaching/EDCR 103	3	Issues in Science/Technology/ CHEM 166
{ 3	First-Year Seminar/EDCR 104 *	3	Psychology of Learning/Teaching/ EDCR 101
3	Fundamentals of Speech/SPCH 111	3	Critical Analysis/Composition/ LENG 112
3	College Composition/LENG 111	3	Fund. of Mathematics/MATH 105
3	History of West/World/LHST 111	3	U.S. Government/Politics/POLI 111
3	Introduction to Sacred Scripture/ LTHE 121	3	Special Educ. Overview/SPED 101
3	College Algebra/MATH 111		
<u>18</u>		<u>18</u>	
SOPHOMORE			
<i>Fall</i>		<i>Spring</i>	
3	General Biology/BIOL 101 <b>or</b> Human Biology/BIOL 104	3	Intro to Nanotechnology/CHEM 121
3	Introduction to Philosophy/LPHI 131	{ 3	Philosophy of Ethical Responsibility/ LPHI 237 <b>or</b> Theology of Moral Resp/LTHE 227
3	Quantitative Literacy/MATH 103	1	Leadership Seminar/LHES 240
3	Instructional Design & the Middle Level Classroom/MLED 200 +	3	Adolescent Literature/MLED 201 +
3	Collaboration/Partnerships/SPED 242	3	Adolescent Dev./MLED 202 *
3	Meet Needs Students Exceptionalities: PreK-8/SPED 245 *	3	Pos Behav Supp/Interv/SPED 322 *
<u>18</u>		<u>16</u>	
JUNIOR			
<i>Fall</i>		<i>Spring</i>	
3	Expressive Arts/EDCR 302	3	Concepts/Methods: ESL/ELL/ EDCR 420 *
1	Methods/Materials for Instr Seminar/EDCR 321 *	3	U.S. History 1865 to Present/ HIST 222
3	History of U.S. to 1865/HIST 221	3	Philosophy II Series/LPHI
3	Applied Statistics/MATH 213 <b>or</b> Psychological Statistics I/PSYC 211	3	Cultural Anthropology/SOCI 292

3	Inquiry/Analysis in PA History/ Government/MLED 304 +	3	Literature for Student Exceptionalities: PreK-8/SPED 320 ++
3	High Incidence Disabilities/SPED 308	3	Program/Plan Assessment Special Education/SPED 343 *
<hr/>		<hr/>	
16		18	
SENIOR			
<i>Fall</i>		<i>Spring</i>	
3	Prin of Microeconomics/BCOR 111 <b>or</b>	3	Professional Seminar/EDCR 401
	Prin of Macroeconomics/BCOR 112	12	Student Teaching/EDFL 410
3	Theology II Series/LTHE	3	World Geography/GEOG 201
3	Intro to International Relations/ POLI 133		
3	Concepts of Natural Sci./MLED 302 ++		
3	Data-Driven Instruction: Special Ed/ SPED 306 *		
3	Low Incidence Disabilities/SPED 307 ++		
<hr/>		<hr/>	
18		18	

Total credits: 140

\* Field experience embedded throughout the semester (6-15 hrs.)

+ Field experience embedded throughout the semester (60 hrs.)

++ Field experience embedded throughout the semester (30 hrs.)

{ Cohort Courses

**Early Childhood Education Curriculum/Associate Degree**

*(Numerals in front of courses indicate credits)*

FRESHMAN			
<i>Fall</i>		<i>Spring</i>	
3	Psychology of Learning/Teaching/ EDCR 101	3	Early Childhood Overview/ ECED 100 *
1	Foundations of Teaching/EDCR 103	3	Child Development: Birth-Age 5/ ECED 101 *
{ 2	First-Year Seminar/EDCR 104 *	3	Instructional Design & the Early Childhood Classroom/ECED 103 +
3	Public Speaking/SPCH 111	3	Intro to Philosophy/LPHI 131
3	College Composition/LENG 111	3	Special Education Overview/ SPED 101
3	Collaboration/Partnerships/ SPED 242		
<hr/>		<hr/>	
15		15	
SOPHOMORE			
<i>Fall</i>		<i>Spring</i>	
3	Early Language/Literacy Development/ECED 200 **	3	Concepts/Methods: Early Lit/ Reading PreK-1/ECED 202 **
2	Concepts/Methods: Math I/ECED 204 *	2	Concepts/Methods: Math II/ ECED 205 *
3	Integrated Curriculum: PreK-4/ ECED 300 +	3	Family Involvement in Education System/ECED 309
3	Data Driven Instruction: PreK-4/ ECED 306 *	3	Physical Well-Being of the Child/ ECED 310
3	Expressive Arts/EDCR 302		

3 Meeting Learning Needs Students  
w/Except: PreK-8/SPED 245\*

—  
17

3 Introduction to Sacred Scriptures/  
LTHE 121  
3 Program Planning/Assessment in  
Sp Ed/SPED 343 \*

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17

Total credits: 64

\*Field experience embedded throughout the semester (6-15 hrs.)

+Field experience embedded throughout the semester (60 hrs.)

\*\*Three-week field experience (90 hrs.)

{ Cohort Courses

### Early Childhood Education/Early Intervention Curriculum/Associate Degree

(Numerals in front of courses indicate credits)

#### FRESHMAN

*Fall*

3 Psychology of Learning/Teaching/  
EDCR 101  
1 Foundations of Teaching/EDCR 103  
2 First-Year Seminar/EDCR 104 \*  
3 Public Speaking/SPCH 111  
3 College Composition/LENG 111  
3 Collaboration/Partnerships/  
SPED 242

—  
15

*Spring*

3 Early Childhood Overview/  
ECED 100 \*  
3 Child Development: Birth-Age 5/  
ECED 101 \*  
3 Instructional Design & the Early  
Childhood Classroom/ECED 103 +  
3 Critical Analysis/Composition/  
LENG 112  
3 Introduction to Philosophy/LPHI 131  
3 Special Education Overview/  
SPED 101

—  
18

#### SOPHOMORE

*Fall*

3 Early Language/Literacy  
Development/ECED 200 \*\*  
2 Concepts/Methods: Math I/ECED 204 \*  
3 Integrated Curriculum: PreK-4/  
ECED 300 +  
3 Data Driven Instruction: PreK-4/  
ECED 306 \*  
3 Expressive Arts/EDCR 302  
3 Meeting Learning Needs Students  
w/Except: PreK-8/SPED 245\*

—  
17

*Spring*

3 Concepts/Methods: Early Lit/  
Reading PreK-1/ECED 202 \*\*  
3 Family Involvement in Education  
System/ECED 309  
3 Physical Well-Being of the Child/  
ECED 310  
3 Introduction to Sacred Scripture/  
LTHE 121  
3 Positive Behavior Supports/Inter/  
SPED 322  
3 Program Planning/Assessment in  
Sp Ed/SPED 343 \*

—  
18

Total credits: 68

\*Field experience embedded throughout the semester (6-15 hrs.)

+Field experience embedded throughout the semester (60 hrs.)

\*\*Three-week field experience (90 hrs.)

{ Cohort Courses

## Education Minor Curriculum

### I. Required Courses (10 credits)

#### A. Foundations

3 EDCR 101 Psychology of Learning and Teaching

1 EDCR 103 Foundations of Teaching

#### B. Development (one of the following)

3 ECED 101 Child Development, Birth – Age 5\*

3 ECED 102 Child Development, Kindergarten – Grade 4

3 MLED 202 Adolescent Development\*

#### C. Planning (one of the following)

3 ECED 103 Instructional Design and the Early Childhood Classroom +

3 EDCR 206 Instructional Design and the Secondary Education Classroom +

3 MLED 200 Instructional Design and the Middle Level Classroom +

### II. Elective Courses (6 credits)

*Select from the following:*

3 ECED 100 Early Childhood Overview\*

3 ECED 203 Concepts and Methods of Instruction: Literacy/Reading Grades 2-4

3 ECED 309 Family Involvement in the Educational System

3 EDCR 300 Children's Literature

3 EDCR 320 Methods and Materials of Instruction: Math, Science, Social Studies\*

3 EDCR 326 Methods and Materials of Instruction: Reading across Content Areas\*

3 EDCR 330 Assessment and Evaluation

3 MLED 201 Adolescent Literature\*\*

3 SPED 101 Special Education Overview

Additional courses may be elected with approval of the Director of the School of Education and the course instructor.

#### Field Experiences

\*Field experience embedded throughout the semester (6–15 hrs.)

+Field experience embedded throughout the semester (60 hrs.)

\*\*Field experience embedded throughout the semester (90 hrs.)

## Special Education and Diversity Minor Curriculum

### I. Required Courses (12 credits)

#### A. Foundations

3 EDCR 420 Methods and Materials for Teaching ESL

3 SPED 101 Overview of Special Education

3 SPED 322 Positive Behavioral Supports and Interventions

#### B. Development (one of the following)

3 SPED 245 Meeting the Needs of Students with Exceptionalities: PreK – 8 grade

3 SPED 340 Meeting the Needs of Students with Exceptionalities: 7 – 12 grade

### II. Elective Courses (4-6 credits)

*Select from the following:*

1 LHES 240 Comparative Cultures: Living the Gannon Mission in Thailand

3 SCWK 230 Human Diversity



- 3 SOCI 292 Cultural Anthropology
- 3 SPED 242 Collaboration and Partnerships in Special Education
- 3 SPED 308 High Incidence Disabilities
- 3 SPED 320 Literacy for Students with Exceptionalities

### Exceptional Child Minor Curriculum

#### I. Required Courses (9 credits)

##### *Exceptionalities Core*

- SPED 101 Overview of Special Education (3)
- SPED 322 Positive Behavioral Supports and Interventions (3 credits)
- SPED 343 Program Planning and Assessment\* (3 credits)

#### II. Electives Courses (6 credits)

##### *Select from the following:*

- EDCR 420 Methods/Materials of Instruction for ESL/ELL\* (3 credits)
- SPED 242 Collaboration and Partnerships in Special Education (3 credits)
- SPED 307 Low Incidence Disabilities\*\* (3 credits)
- SPED 308 High Incidence Disabilities (3 credits)
- SPED 323 Autism Spectrum Disorders: Theory and Practice (3 credits)
- SPED 325 Autism Spectrum Disorders: Strategies for Social Competence (3 credits)

### Training and Development Minor Curriculum

#### I. Required Courses (9 credits)

- 3 EDCR 101 Psychology of Learning and Teaching
- 3 EDCR 206 Instructional Design and the Secondary Education Classroom

##### *Select one of the following:*

- 3 ENGL 212 Business and Professional Communications
- 3 SPCH 313 Intercultural Communication

#### II. Elective Courses (9 credits)

##### *Select one of the following tracks and its associated courses:*

##### Instructional Technology Concentration Track

- 3 EDCR 102 Instructional Technology
- 3 CIS 150 Business Technology I
- 3 CIS 245/246 Multimedia Production/Lab

##### Business Concentration Track Pre-requisite BCOR 240, BCOR 250, Junior status

- 3 MGMT 220 Making Teams Work
- 3 MGMT 311 Organizational Innovation
- 3 MGMT 316 Organizational Behavior

##### Psychology Track Pre-requisite PSYCH 111 Introduction to Psychology

- 3 PSYC 292 Industrial Organization
- 3 PSYC 225 Social Psychology
- 3 PSYC 316 Human Factors Psychology

The Training and Development Minor in particular would be advantageous to business majors.

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## EDUCATION COURSE DESCRIPTIONS

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### ECED 100: Early Childhood Overview/Field Experience

This course examines the structure of early childhood education. Social and cultural foundations are addressed in the context of interpersonal relations among children, families,

and communities. An introduction to curricular approaches, observation and assessment of young children, play, and developmentally appropriate practice is provided. The field experience associated with this course is an Observation and Exploration (Stage 1) experience which is embedded throughout the course (six hours). *3 credits, Spring*

**ECED 101: Child Development: Birth through Age 5**

This course provides a broad study of child development theories and concepts from conception through age 5. Teacher candidates explore the physical, emotional, social, and cognitive development of typical and atypical children from birth through 5 years of age. The field experience associated with this course is an Observation and Exploration (Stage 1) experience which is embedded throughout the course (six hours). *3 credits, Spring*

**ECED 102: Child Development: Kindergarten through Fourth Grade**

This course provides a broad study of child development theories and concepts from kindergarten through fourth grade. Teacher candidates explore the physical, emotional, social, and cognitive development of typical and atypical children from kindergarten through fourth grade. *3 credits, Fall*

**ECED 103: Instructional Design and the Early Childhood Classroom/Field Experience**

This course introduces pre-service teachers to creating and managing instruction in the learning environment which fosters quality teaching and learning. They develop lessons connecting learning theories, academic standards, subject matter, student learning, and student achievement. Emphasis is given to the connections among curriculum, instruction, and assessment that result in successful learning. Pre-service teachers develop effective techniques and strategies for classroom management, ensuring a safe, valued, and respectful environment for all students. The field experience associated with this course is an Observation and Exploration (Stage 2) experience which is embedded throughout the course (60 hours). *3 credits, Spring*

**ECED 200: Early Language and Literacy Development/Field Experience**

This course focuses on how language develops and how this development can be enhanced and sustained. The teacher's role in supporting language development and the characteristics of a language-rich classroom are studied. The importance of emergent literacy, children's literature, and appropriate assessment are emphasized. The field experience associated with this course is an Observation and Exploration (Stage 2) experience which takes place for three weeks (90 hours). *3 credits, Fall*

**ECED 202: Concepts and Methods of Instruction: Early Literacy and Reading PreKindergarten through First Grade/Field Experience**

This course focuses on developing effective instructional strategies for the teaching of reading and literacy in prekindergarten through first grade. Traditional and holistic approaches in reading instruction are studied. The importance of instructional reading strategies, writing assessment, and the National Reading Panel's research findings are emphasized as teacher candidates understand and learn how to facilitate children becoming independent readers. The field experience associated with this course is an Observation and Exploration (Stage 2) experience which takes place for three weeks (90 hours).

Prerequisites: ECED 103 and ECED 200

*3 credits, Spring*

**ECED 203: Concepts and Methods of Instruction: Literacy and Reading Second through Fourth Grade**

This course takes an in depth look at the reading and writing processes across the content areas as they pertain to diverse learners in second through fourth grade. Instructional methodology and materials, appropriate assessments, and the use of technology are presented and modeled during this course.

Prerequisite: ECED 103

*3 credits, Fall*

**ECED 204: Concepts and Methods of Instruction: Mathematics I/Field Experience**

This course provides teacher candidates with the conceptual framework, appropriate strategies, and methods to teach mathematics to diverse learners in the early childhood classroom. Using technology and a variety of materials, teacher candidates learn to assess children's needs and evaluate instruction with an emphasis on integrating mathematics across the curriculum. The field experience associated with this course is an Observation and Exploration (Stage 2) experience which is embedded throughout the course (six hours).

Prerequisite: ECED 103

*2 credits, Fall*

**ECED 205: Concepts and Methods of Instruction: Mathematics II/Field Experience**

This course is a continuation of ECED 204 Concepts and Methods: Mathematics I, providing teacher candidates with the conceptual framework, appropriate strategies, and methods to teach mathematics to diverse learners in the early childhood classroom. Using technology and a variety of materials, teacher candidates learn to assess children's needs and evaluate instruction with an emphasis on integrating mathematics across the curriculum. The field experience associated with this course is an Observation and Exploration (Stage 2) experience which is embedded throughout the course (six hours).

Prerequisite: ECED 204

*2 credits, Spring*

**ECED 221: Early Care and Education**

This course emphasizes making appropriate choices to plan and implement a developmentally appropriate environment for infants and toddlers at home or in a child care center. Cognitive and psychosocial learning theories are applied to the selection and adaptation of materials and strategies to meet the particular needs of very young children, including those who are at risk.

*3 credits, Spring*

**ECED 300: Integrated Curriculum PreKindergarten through Fourth Grade/Field Experience**

This course provides the conceptual framework for developing and implementing appropriate curriculum for children prekindergarten through fourth grade. Instruction utilizing research-based approaches will be focused upon while linking instruction, curriculum, and assessment to plan effectively. The integration of content is stressed as teacher candidates plan, adapt, and analyze curriculum content, instructional materials, and strategies to enhance learning. The field experience associated with this course is a PreStudent Teaching (Stage 3) experience which takes place for three weeks (90 hours).

Prerequisite: ECED 103

*3 credits, Spring*

**ECED 306: Data Driven Instruction: PreKindergarten through Fourth Grade/Field Experience**

This course focuses on how to choose assessment tools and how to utilize data from informal, formal, and anecdotal assessments to improve student achievement. This course teaches participants how to collect, analyze, and use various forms of data to drive instruction, inform curriculum decisions, and improve instructional practices. Strong emphasis is placed on state and local assessments. The field experience associated with this course is a PreStudent Teaching (Stage 3) experience which is embedded throughout the course (nine hours).

Prerequisite: ECED 103, SPED 101

*3 credits, Fall*

**ECED 307: Concepts and Methods of Instruction: Social Studies**

This course is designed to introduce teacher candidates to the various disciplines and approaches to teaching social studies for diverse learners in prekindergarten through fourth grade. Teacher candidates will learn planning, resource selection, and developmentally appropriate methods and materials to enhance classroom instruction. Emphasis is on social studies as a powerful integrative force across the curriculum. Teacher candidates will be reintroduced to social studies content and concepts traditionally covered in a primary setting. Particular attention will be paid to curriculum development and alignment with state and national standards.

Prerequisite: ECED 103

*3 credits, Spring*

**ECED 308: Concepts and Methods of Instruction: Science and Technology**

This course provides prekindergarten through fourth grade teacher candidates with the conceptual framework, appropriate strategies, and methods used to teach inquiry-based science that supports standards across the curriculum. Using a variety of instructional models, teacher candidates will learn to design, implement, assess, modify, and evaluate science curriculum and lessons. This course is aligned with the National Research Council's National Science Education Standards as well as the Pennsylvania Academic Standards for Science and Technology and Environment and Ecology.

Prerequisite: ECED 103

*3 credits, Fall*

**ECED 309: Family Involvement in the Educational System**

This course examines the complex relationship that exists between family and school. Specifically, this course focuses on the practical components of family involvement that teachers encounter: home and school communications; parent and teacher conferences; administrative issues; and obstacles or barriers to parent and family involvement in the educational system.

*3 credits, Spring*

**ECED 310: Physical Well-being of the Child**

This course prepares teacher candidates to promote physical well-being of children. Through active participation, the teacher candidates learn games, techniques, and strategies appropriate for prekindergarten through sixth grade school age children as well as students with special needs. Candidates learn to teach children how to become physically, emotionally, and socially healthy. Emphasis is given to important current issues affecting a healthy lifestyle for children.

Prerequisite: ECED 103 or MLED 200

*3 credits, as offered*

**EDCR 101: Psychology of Learning and Teaching**

Participants explore the nature of learning, theories of motivation, and cultural and individual differences found in the classroom which affect learning. Through an investigation of behaviorist, cognitivist, constructivist, and social psychology perspectives and approaches, teacher candidates begin to apply concepts and principles of psychology to educational settings in their field experiences.

*3 credits, Fall, Spring*

**EDCR 102: Instructional Technology**

Instructional Technology provides teacher candidates with laboratory-based experiences using various and emergent technologies. Teacher candidates demonstrate competency in the integration of selected programs and examine the ethical ramifications of the instructional choices they make. Strategies and tools to cope with rapid changes are presented.

*3 credits, as offered*

**EDCR 103: Foundations of Teaching**

This course introduces teacher candidates to the philosophical and pedagogical aspects of the profession, including the structure of effective schools, lesson planning, and classroom management. As part of this course, reflective examination of the decision to pursue teaching as a career begins the building of professional portfolios.

*1 credit, Fall*

**EDCR 104: First-Year Seminar**

The First-Year Seminar is a discussion and experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to University life, and to encourage development of academic, personal, and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered. The field experience associated with this course is an Observation and Exploration (Stage 1) experience which is embedded throughout the course (ten hours).

*2 credits, Fall*

**EDCR 206: Instructional Design and the Secondary Education Classroom/Field Experience**

This course introduces pre-service teachers to creating and managing instruction in the

learning environment. They develop standards-based lessons and instruction as part of the scope and sequence of instructional planning. Assessment anchors are included as they relate to instruction. Emphasis is given to the connections among curriculum, instruction, and assessment that results in successful learning. Course participants are introduced to the approaches for differentiating instruction for all adolescents, including those with academic diversity and other special needs. Pre-service teachers also learn how to interact effectively with instructional support staff, paraprofessionals, and parents. The field experience associated with this course is an Observation and Exploration (Stage 2) experience (60 hours) throughout the course. This course is cross-listed with MLED 200. *3 credits*

**EDCR 240: Leadership Seminar**

The leadership seminar introduces students to a three dimensional model of leadership (leaders, followers, and situation), including a repertoire of leadership skills and means of using those skills responsibly in various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic Social Justice Teaching serve as the basis for the students' leadership development as reflected both in this course and the co-requisite Philosophy of Ethical Responsibility course. Students enrolled in this leadership seminar will engage in service learning, civic action, and problem solving as they participate in a six step leadership training program. This training program focuses on a project-based learning approach known as Community Action and Problem Solving (CAPS). Following this training, students will be prepared to apply the elements of leadership in solving real world problems. This course, while housed in the School of Education, is open to all University students. *1 credit*

**EDCR 302: Expressive Arts**

This course emphasizes the importance of the arts in children's lives through the analysis and evaluation of works of art. Teacher candidates examine and explore how to help all children use art, music, dance, drama, and literature to express and communicate their developing ideas, experiences and feelings about themselves and the diverse world in which we live. Through active experiences with various media, strategies, technology, and resources, students create lesson plans to integrate the arts in the classroom.

Prerequisites: ECED 103 or MLED 200

*3 credits, as offered*

**EDCR 321: Methods and Materials of Instruction Seminar/Field Experience**

This course is designed for middle level and secondary majors. It emphasizes teaching methodologies, standards-based instruction, and integration of content areas. Emphasis is given to the preparation of effective lessons in the content area and selection of instructional methods and materials appropriate for adolescents. This course is associated with a field experience to provide an opportunity for teacher candidates to work with a content expert in their field. There is a 60 hour Observation and Exploration (Stage 2) field experience for 7-12 majors; 15 hours for 4-8 majors. *1 credit, Fall*

**EDCR 330: Assessment and Evaluation/Field Experience**

Teacher candidates investigate a variety of traditional and alternative assessments in the context of classroom instruction; meeting the needs of diverse learners; recognizing measurement principles; and national, state, and local standards. Teacher candidates construct and evaluate content specific classroom assessments. This course also gives teacher candidates an opportunity to develop an understanding of the need for and interpretation of the results of standardized tests. There is a 60 hour Pre-Student Teaching (Stage 3) field experience throughout this course. *3 credits, Fall*

**EDCR 400: Critical Inquiry Seminar**

This course provides teacher candidates with the opportunity to synthesize their work from both Liberal Studies and education courses in an inquiry-based participatory seminar. The course focuses on issues, reflection, and research relevant to education. Through extensive reading, independent research, writing, questioning, and discussion teacher candidates

pursue areas of particular interest in depth. They share their work with each other, presenting the results of their inquiry in professional presentations. *3 credits, as offered*

#### **EDCR 401: Professional Seminar in Education**

In this course, teacher candidates reflect upon the student teaching experience. The seminar emphasizes concurrent professional problems encountered during clinical practice. Discussion topics deal with the prediction and solution of problems in a variety of school situations. Teacher candidates also prepare for employment through activities connected with the construction of their professional portfolios. This course is taken in conjunction with EDFL 410 Student Teaching. *3 credits, Fall, Spring*

#### **EDCR 414: Sociology of Education**

This course addresses the intersection of education and various other institutions and structures in American society such as family, marriage, economics, politics, religion, gender, ability, social class, race, and ethnicity. Participants study: theoretical perspectives underlying education systems; learning theories that inform educational curricula and programs; the structure, positions, roles, and processes involved in schools; and the relationship between educational systems and societies. *3 credits, as offered*

#### **EDCR 417: Assessment and Support for English Language Learners**

This is a 45-hour, seven-week online course designed to provide specific knowledge specified by the Pennsylvania Department of Instruction in its requirements for English as a Second Language (ESL) training. Specifically, the course will address part three: English Language Learners (ELLs) Language and Support Services Knowledge. It is designed to expand participants' knowledge of effective assessment practices and support services available for ELL candidates. In addition to effective assessment practices, purposes for assessment, multiple assessment models, use of evaluation techniques, scaffolding of assessments, and formal/informal assessment tools are discussed. Participants learn the availability of school support services to assist ELLs in language acquisition and content learning and ways to promote parental/family involvement with their children's educational program. Participants gain hands-on experience in test administration, interpretation, and reporting. Individualized Education Plans for ELLs identified as special education candidates are also reviewed. Participants in this course must also register for EDCR 422, the field experience that accompanies EDCR 417. *3 credits, spring*

#### **EDCR 418: Multicultural Aspects of Cross Cultural Communication**

This is a 45-hour, seven-week online course that explores cultural diversity, the nature of cross cultural communication, and the relationship between language and culture in educational contexts. Participants in this course must also register for EDCR 423, the field experience that accompanies EDCR 418. *3 credits, spring*

#### **EDCR 419: Structures of English**

This is a 45-hour, seven-week online course that examines (American) English usage, fundamentals of linguistics as well as first and second language acquisition. Current theories and research in these fields are introduced and applied. Course content also includes English Language Learner (ELL) literacy development and characteristics of ELL learners. Participants in this course must also register for EDCR 424, the field experience that accompanies EDCR 419. *3 credits, fall*

#### **EDCR 420: Methods and Materials for Teaching English as a Second Language (ESL)/Teaching English Language Learners (ELL)/Field Experience**

This course provides participants with a survey of current research and theory in English as a second language (ESL)/teaching English language learners (ELL). The participants explore and practice traditional and innovative methodologies for teaching language skills to non-native speakers in kindergarten through grade 12. Fifteen hours of Pre-Student Teaching (Stage 3) field experience are embedded throughout the course, providing candidates with an opportunity to work in an ESL setting. The course is offered in both face-to-face and online

modes. Participants in this course who wish to pursue ESL certification must also register for EDCR 425, the field experience that accompanies EDCR 420. Participants in this course who are not considering pursuing ESL certification complete do not have to register for a separate field experience.

*3 credits, fall and spring*

#### **EDCR 422: Assessment and Support for English Language Learners Field Experience**

This field experience is taken together with EDCR 417 Assessment and Support for English Language Learners. The field experience is a 15-hour course that allows for the application of skills and knowledge learned in EDCR 417. During the field experience, candidates observe effective assessment practices and participate in implementing an assessment of an English Language Learner.

*3 credits, spring*

#### **EDCR 423: Multicultural Aspects of Cross Cultural Communication Field Experience**

This 15-hour course is taken together with EDCR 418 Multicultural Aspects of Cross Cultural Communication. During the field experience, candidates conduct a cultural assessment through observation and interaction with a group of ELL candidates in order to put into practice the concepts and skills learned in EDCR 418.

*3 credits, spring*

#### **EDCR 424: Structures of English Field Experience**

This 15-hour course is taken together with EDCR 419 Structures of English. During the field experience, candidates observe an ELL in order to put into practice the concepts and skills learned in EDCR 419 and apply these insights and knowledge to a classroom setting.

*3 credits, fall*

#### **EDCR 425: Methods and Materials for Teaching English as a Second Language Field Experience**

This 15-hour course is taken together with EDCR 420 Methods and Materials for Teaching English as a Second Language. During the field experience, candidates observe effective assessment practices and participate in implementing an assessment of an English Language Learner in order to put into practice the concepts and skills learned in EDCR 420.

*3 credits, fall and spring*

#### **EDFL 101: Secondary Education Field Experience I**

This 60 hour experiential learning opportunity is an Observation and Exploration (Stage 2) experience in an educational setting assigned by the Coordinator of Clinical Experiences. This field experience focuses on classroom interaction and student observation and is linked to EDCR 206.

*0 credit, Fall, Spring*

#### **EDFL 102: Secondary Education Field Experience II**

This 60 hour experiential learning opportunity is a Pre-Student Teaching (Stage 3) experience in an educational setting assigned by the Coordinator of Clinical Experiences. In addition to observation, this field experience offers teacher candidates the opportunity to teach all or part of several lessons. Candidates also complete tasks at the direction of their cooperating teacher. This field experience is linked to EDCR 321.

*0 credit, Fall, Spring*

#### **EDFL 103: Secondary Education Field Experience III**

This 60 hour experiential learning opportunity is a Pre-Student Teaching (Stage 3) experience in an educational setting assigned by the Coordinator of Clinical Experiences. The requirements of this field experience include teaching at least three lessons, planning a unit, and completing tasks at the direction of the cooperating teacher. This field experience is linked to EDCR 330.

*0 credit, Fall, Spring*

#### **EDFL 410: Student Teaching**

This experience in the field encompasses one full semester of directed observation and supervised student teaching, with gradual assumption of total teaching responsibilities. This course is taken in conjunction with EDCR 401 Professional Seminar.

Prerequisite: All methods courses; SOE acceptance.

*12 credits, Fall, Spring*



**EDUC 355: Museum Internship**

This internship introduces participants to the field of museum education which is object or art centered. Teacher candidates have an opportunity to examine museum education as an enrichment to their classroom teaching activities, and they design activities which integrate curriculum with the museum collection.

*3 credits, as offered*

**EDUC 357: Adult Literacy**

This course explores a variety of approaches and materials used for reading and numeracy instruction of the adult learner. Familiarity with the social and psychological characteristics of the adult learner is stressed. Participants will be expected to spend contact hours in direct tutoring of adult literacy students.

*3 credits, Fall, Spring*

**EDUC 358: American Sign Language I**

This course teaches a basic vocabulary of 300 – 500 signs used in American Sign Language in conversational settings by Deaf and hearing signers. Students learn important aspects of ASL grammar and ASL culture and are given a brief introduction to hearing loss and some practical issues in the education of Deaf children.

*3 credits, Fall, Spring*

**EDUC 359: American Sign Language II**

This course teaches more advanced vocabulary of signs used in American Sign Language. It will also analyze conversational settings of various Deaf and hearing signers. Detailed aspects of ASL grammar and ASL culture are taught. A major emphasis is placed on expressive signing by students. Practical issues in Deaf culture and in Deaf education are discussed.

Prerequisite: EDUC 358

*3 credits, Spring*

**EDUC 390-394: Special Topics in Education**

*1-6 credits, as offered*

**EDUC 395-399: Independent Study**

Students choose a topic of study with faculty approval and supervision.

*1-6 credits. By arrangement*

**MLED 200: Instructional Design and the Middle Level Classroom/Field Experience**

This course introduces pre-service teachers to creating and managing instruction in the learning environment. They develop standards-based lessons and instruction as part of the scope and sequence of instructional planning. Assessment anchors are included as they relate to instruction. Emphasis is given to the connections among curriculum, instruction, and assessment that result in successful learning. Pre-service teachers are introduced to the approaches for differentiating instruction for adolescents with academic diversity and other special needs. They also learn how to interact effectively with instructional support staff, paraprofessionals, and parents. The field experience associated with this course is an Observation and Exploration (Stage 2) 60 hour experience. This course is cross-listed with EDCR 206.

*3 credits, Fall*

**MLED 201: Adolescent Literature/Field Experience**

This course helps teacher candidates to develop an appreciation, understanding, and evaluation of literature appropriate for young adolescents ages nine-15. Through the study of a variety of prose, drama, and poetry, teacher candidates have the opportunity to focus on the diverse characteristics and needs of adolescents; to examine cultural differences; and to develop criteria for selection and use of literature across the curriculum. Strategies for instruction are modeled and practiced. During this course, the participants become familiar with the PA Academic Standards and Assessment Anchors and utilize them when planning instruction. The field experience associated with this course is a Pre-Student Teaching (Stage 3) 60 hour experience.

Prerequisite: ECED 103 or MLED 200 or EDCR 206

*3 credits, Spring*

**MLED 202: Adolescent Development/Field Experience**

This course provides a broad study of major concepts, principles, theories, and research related to middle childhood and adolescent development. Teacher candidates explore the physical, cognitive, behavioral, and social changes that take place during the middle level



years as well as the events, circumstances, and strategies that influence and promote normal development. An examination of the middle school philosophy and how it supports adolescent development through the transitions from an early childhood school environment to the middle school environment and then to the high school environment is important for teachers in fourth through eighth grade. The field experience associated with this course is an Observation and Exploration (Stage 1) experience which is embedded throughout the course (nine hours). *3 credits, every other Spring*

**MLED 300: Data-Driven Instruction/Field Experience**

This course focuses on how to choose assessment tools and how to utilize data from informal, formal, and anecdotal assessments to improve academic achievement for young adolescent learners. Teacher candidates investigate a variety of traditional and alternative assessments in the context of the following: classroom instruction; meeting the needs of diverse learners; recognizing measurement principles; and national, state, and local standards. This course teaches participants how to collect, analyze, and use various forms of data to drive instruction, inform curriculum decisions, and improve instructional practices. Teacher candidates construct and evaluate specific classroom assessments. Strong emphasis is placed on state and local assessments and gives teacher candidates an opportunity to develop an understanding of the need for and interpretation of the results of standardized tests, including PSSA. The field experience associated with this course is a PreStudent Teaching (Stage 3) 90 hour experience.

Prerequisite: MLED 200

*3 credits, Spring*

**MLED 301: Literacy Development, Strategies, and Assessments/Field Experience**

This course apprises teacher candidates of the literacy needs of middle level and secondary students and models methods of instruction, curriculum development, strategies, and assessments to meet those needs. There is a 30 hour PreStudent Teaching (Stage 3) field experience for 4-8 majors; 15 hour for 7-12 majors.

Prerequisite: MLED 200 or EDCR 206

*3 credits, Fall*

**MLED 302: Concepts of Natural Science/Field Experience**

This is a descriptive and conceptual course in natural sciences designed for education majors. Teacher candidates engage in the Earth Force Community Action and Problem Solving approach to explore selected topics from life sciences, physical science, and earth/space sciences to develop a necessary scientific attitude and background for teaching in today's society. The field experience associated with this course is a PreStudent Teaching (Stage 3) 30 hour experience. Individuals with a science concentration should complete 60 hours.

Prerequisite: MLED 200 or EDCR 206

*3 credits, Fall*

**MLED 303: Applications of Mathematics/Field Experience**

Middle level teacher candidates will develop, implement, assess, and modify middle level curriculum and lessons which build new mathematical knowledge through problem solving, mathematical representations, and technology; solve problems that arise in math and other discipline areas; and learn how to apply appropriate strategies to solve these problems. This course is only taken by middle level teacher candidates with a mathematics concentration. The field experience associated with this course is a PreStudent Teaching (Stage 3) 60 hour experience.

Prerequisites: MLED 200

*3 credits, Fall*

**MLED 304: Inquiry and Analysis in Pennsylvania History and Government/Field Experience**

The course design helps teacher candidates identify and explain the political and cultural contributions of individuals and groups in Pennsylvania history; identify and explain primary documents, material artifacts, and historic sites important in Pennsylvania history; identify and explain how continuity and change have influenced the history of Pennsylvania. Curriculum development and alignment with state and national standards are emphasized.

This course is taken by middle level teacher candidates with a social studies concentration and Secondary Social Studies majors. The field experience associated with this course is a PreStudent Teaching (Stage 3) 60 hour experience for middle level candidates only.

Prerequisites: MLED 200 or EDCR 206

*3 credits, Fall*

### **SPED 101: Special Education Overview**

This course provides teacher candidates with a basic understanding of the federal mandates associated with special education. Teacher candidates are introduced to: characteristics of various exceptionalities; pre-referral strategies and interventions; cultural diversity; curricular and behavioral modifications, adaptations, and instructional strategies; educational assessment; historical legislations and current legal issues in special education; and the collaboration of regular education and special education teachers. Focus is given to the special education process for evaluation, identification, eligibility determination, and placement of students with exceptionalities in special education.

*3 credits, Spring*

### **SPED 242: Collaboration and Partnerships in Special Education: PreKindergarten through Eighth Grade**

This course examines the various human resources and support services available to build partnerships that meet the needs of diverse student populations. Specifically, this course focuses on collaborative problem-solving, consultation, and co-teaching in education.

Attention is given to ethical interpersonal and conflict resolution skills required for effective collaboration and partnerships in professional education environments.

*3 credits, Fall*

### **SPED 245: Meeting the Learning Needs of Students with Exceptionalities: PreKindergarten through Eighth Grade/Field Experience**

This course examines the educational programming for prekindergarten through eighth grade children with delays or exceptionalities. In this course, teacher candidates are introduced to: historical legislations and current legal issues in special education; the concept of early intervention; the Individual Family Service Plan (IFSP) and the Individual Education Plan (IEP); and the best practices in teaching, managing, and supporting children with exceptionalities in the educational environment. The field experience associated with this course is an Observation and Exploration (Stage 2) experience which is embedded throughout the course (nine hours).

Prerequisite: SPED 101

*3 credits, Fall*

### **SPED 306: Data-Driven Instruction: Special Education/Field Experience**

This course focuses on how to choose an assessment tool and how to utilize data from formal, informal, and anecdotal assessments to improve the achievement of students with special needs. This course teaches participants how to ethically collect, analyze, and use various forms of data to drive instruction related to Individualized Education Plans (IEP) goals, inform program decisions, and improve instructional practices. Strong emphasis will be placed on state and local assessments as they relate to students with special needs. Nine hours of PreStudent Teaching (Stage 3) field experience are embedded throughout the course.

Prerequisite: SPED 101 and ECED 103 or MLED 200

*3 credits, Fall*

### **SPED 307: Low Incidence Disabilities: PreKindergarten through Eighth Grade/Field Experience**

This course is designed to focus on specific issues related to a variety of significant disabilities that are included in the general category of low incidence. The following aspects of low incidence are included: pervasive development disorders; moderate to significant mental retardation; medically fragile; multiple disabilities; functional and sensory curriculum; instructional techniques and strategies; community-based instruction; assistive technology; and service and program options and coordination. Teacher candidates are exposed to a variety of instructional environments on the least restrictive environment (LRE) continuum that serve children with low incidence disabilities. The field experience associated with this course is a 90 hour PreStudent Teaching (Stage 3) experience in a special education setting.

Prerequisite: SPED 308

*3 credits, Fall*

**SPED 308: High Incidence Disabilities: PreKindergarten through Eighth Grade/Field Experience**

This course is designed to focus on specific issues related to high incidence disabilities in both special education and regular education environments. The following aspects of high incidence disabilities are included: communication disorders; specific learning disabilities; emotional disturbance; curricular adaptations and modifications; instructional techniques and strategies; and service and program options and coordination. Teacher candidates are exposed to a variety of instructional environments on the least restrictive environment continuum that serve children with high incidence disabilities. The field experience associated with this course is an Observation and Exploration (Stage 1 and 2) six hour experience.

Prerequisite: SPED 101

*3 credits, Fall*

**SPED 320: Literacy for Students with Exceptionalities: PreKindergarten through Eighth Grade/Field Experience**

This course is designed to focus on specific corrective, remedial, and compensatory strategies for all aspects of language, reading, and writing development of children with exceptionalities. Specifically, this course addresses: utilization of assessment data to choose and plan instructional strategies for teaching reading and writing; the evidence-based connection between literacy and behavior; progress monitoring; use of explicit and systematic instruction; selection of research-based writing strategies and interventions; and the impact of language development and literacy. The field experience associated with this course is a PreStudent Teaching (Stage 3) experience which is embedded throughout the semester (30 hours).

Prerequisites: SPED 101

*3 credits, Fall*

**SPED 322: Positive Behavioral Supports and Interventions/Field Experience**

This course is designed to introduce teacher candidates to a variety of positive behavioral supports and interventions in order to create and maintain a classroom environment that is conducive to learning. Included in this course are the following areas: Response to Intervention (RTI); school-wide positive behavioral supports; classroom-based positive behavioral intervention approaches; selecting, instructional planning, and teaching social skills; identification of the causes and functions of behaviors; the assessment of behavioral issues; and the development and implementation of effective positive behavioral support plans. The teacher candidates complete a functional behavior assessment and develop, implement, and evaluate effective positive behavioral support plans through the use of a variety of progress monitoring and data gathering techniques. The field experience associated with this course is a PreStudent Teaching (Stage 3) experience which is embedded throughout the semester (six hours).

Prerequisites: SPED 101

*3 credits, Spring*

**SPED 340: Meeting the Needs of Students with Exceptionalities: Seventh through Twelfth Grade/Field Experience**

This course examines intervention strategies appropriate for the instruction and classroom management of students with exceptionalities in seventh through twelfth grades. Focus is given to planning, implementing, and evaluating strategies appropriate for maintaining an effective learning environment and for creating adaptations across all content areas, as well as developing and practicing authentic collaboration techniques. The field experience associated with this course is a PreStudent Teaching (Stage 3) experience which is embedded throughout the course (nine hours).

Prerequisites: SPED 101

*3 credits, Fall*

**SPED 341: Contemporary Issues in Special Education**

This course examines contemporary trends and issues in special education and the impact of those issues upon schools, teachers, students, and parents. Current research in the field of special education is reviewed through discussion of topics. Content also includes an overview of the various legal issues in special education, including the rights of students, parents, and educators.

*3 credits, as offered*

**SPED 343: Program Planning and Assessment in Special Education/Field Experience**

This course examines the purposes and kinds of assessment procedures used to identify, evaluate, place, and plan instruction for children and adolescents with special needs. In order for teacher candidates to take part in the writing of an Individualized Education Plan (IEP) and engage in a full range of progress monitoring strategies, this course addresses: the assessment process; formal and informal procedures; assessment of general performance areas; assessment of academic areas; and using assessments to plan instruction. Focus is given to a variety of assessments, including authentic, screening, benchmark, diagnostic, formative and summative. Nine hours of PreStudent Teaching (Stage 3) field experience are embedded throughout the course.

Prerequisites: SPED 101

*3 credits, Spring*

**SPED 412: Autism Spectrum Disorders: Theory and Practice**

This course is an introduction to the education and habilitation of children diagnosed with autism spectrum disorder (ASD). The course concentrates on historical development, identification, assessment, and characteristics, including communication and social skills, of ASD. Instructional interventions are also identified and examined. The course is a competency-based course which will be delivered in a seven week online modality. *3 credits*

**SPED 413: Autism Spectrum Disorders: Field Experience One**

This course is a field experience taken concurrently or upon completion of SPED 412 Autism Spectrum Disorders: Theory and Practice. The experiential learning takes place during a 30 hour field placement in an educational or therapeutic setting assigned by the Coordinator of Clinical Experiences. The candidate observes, serves as a teacher aide, and begins to practice skills. Online communications are required during this course. *1 credit*

**SPED 426: Autism Spectrum Disorder: Applied Behavior Analysis and Intervention**

This course is designed to identify the components of applied behavior analysis (ABA) and the development of effective behavioral interventions pertaining to children and adolescents diagnosed along the autism spectrum. Focus is given to identification of the causes and function of behaviors, the assessment and diagnosis of behavioral issues, and the development and implementation of effective behavior and therapeutic treatment plans. The course participants will be able to assess, develop, implement, and evaluate effective behavioral and therapeutic intervention plans using a variety of positive behavioral supports and management techniques.

*3 credits*

**SPED 427: Autism Spectrum Disorders: Field Experience Two**

This course is a field experience taken concurrently or upon completion of SPED 426 Autism Spectrum Disorders: Applied Behavior Analysis and Interventions. The experiential learning takes place during a 30 hour field placement in an educational or therapeutic setting assigned by the Coordinator of Clinical Experiences. The candidate observes, serves as a teacher aide, and begins to practice skills. Online communications are required during this course. *1 credit*

**SPED 431: Autism Spectrum Disorder: Strategies for Social Competence**

This course is designed to identify the components of language and social skills and the development of those skills as they pertain to children and adolescents with ASD. Emphasis will be placed on information processing and the development of language, communication strategies, pragmatics, augmentative, and alternative communication systems. This course will also focus on social skills deficits and approaches for teaching social skills to students with ASD.

*3 credits*

**SPED 432: Autism Spectrum Disorders: Field Experience Three**

This course is a field experience taken concurrently or upon completion of SPED 431 Strategies for Social Competence. The experiential learning takes place during a 30 hour field placement in an educational or therapeutic setting assigned by the Coordinator of Clinical Experiences. This field experience is intended to afford the candidates the opportunity to take over most of the responsibilities throughout the day which have been approved by the cooperating teacher. The cooperating teacher will critique the candidate's planning,

instructional delivery, and classroom environment skills, as well as the candidate's professionalism. Online communications are required during this course.

1 credit

**Please note:** For ASD endorsement candidates who live in the Erie area, arrangements for the field experience will be done by the School of Education. For ASD endorsement candidates who live outside of the Erie area, special arrangements will need to be made. The candidate must contact the Program Coordinator **prior to** enrolling in SPED 413 to discuss field experience site arrangements.

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## ENGLISH

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LAURA RUTLAND, Ph.D., *Chairperson*

**FACULTY:** *Professors:* Sally LeVan, Berwyn Moore, Patrick O'Connell. *Associate Professors:* Douglas King, Laura Rutland. *Assistant Professors:* Ann Bomberger, Matthew Darling, Shreelina Ghosh, Kaustav Mukherjee, Penelope Smith, Jennie Vaughn. *Instructor:* Carol Hayes. *Lecturers:* Emmett Lombard, Mary Wagner, Lora Zill.

### Mission Statement:

The Gannon University English Department inspires students to be informed readers and seasoned writers. Guided by the belief that the study of language and literature enriches the imagination, promotes lifelong learning, and enhances appreciation of diversity, it engages students in ongoing critical and cultural debates whose implications extend beyond the classroom.

### Program Description:

The Department offers four curricular tracks to help students tailor the major to fit their interests and professional goals.

- **Secondary Education in English Track:** For students interested in teaching English at the high school level
- **Legal Career Track:** For students preparing to attend law school or wanting to pursue another law-related career (e.g., paralegal)
- **Professional Writing Track:** For students aspiring to writing careers of various types (e.g., corporate communications, marketing or public relations, magazine or news writing)
- **Literary Studies Track:** For students preparing for graduate school in English literature or a related discipline or seeking careers demanding strong liberal arts preparation

All tracks cultivate the student's ability to write in a variety of genres for different audiences and purposes. The Department also offers students a variety of internships, and a 3-3 program in legal studies with Duquesne University, and features student-run publications such as the Totem (an award-winning literary magazine). Whether they seek careers in education, publishing, journalism, media, public relations, government, business, industry or law, Gannon English Majors acquire the scholarly focus, broad preparation and intellectual awareness that form the basis of an intensive liberal arts education. Students in all tracks are required to complete an internship as part of their academic program.

The English Department also offers a 4+1 B.A./M.A. program, which allows high achieving students to complete a 4-year Bachelor's program and a 2-year Master's program in only five years.

*LENG 111 and LENG 112 are normally prerequisites for upper level literature and writing courses.*

*\*These courses meet Department diversity outcomes.*

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## COURSE DESCRIPTIONS:

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*LENG 111, 112, 241, 243, 245, 247, 249, LFIN 252 and 254 are courses taught by the English Department. See the section on the Liberal Studies Core Curriculum for course descriptions of these courses.*

### **ENGL 100: First-Year Seminar**

The First-Year Seminar is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life, and to encourage development of academic, personal and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered.

(Freshman are expected to complete the First-Year Seminar during the first semester at Gannon.

If not, the student must complete the requirement prior to the sophomore year.) 3 credits

### **ENGL 206: Pursuits of English**

Pursuits of English introduces students to the dynamic, evolving field of English and prepares them for advanced course work. Students will explore ways to approach and understand literature, linguistics, composition, and career and graduate studies opportunities for English majors. LENG 112 should be taken either before or concurrently with Pursuits of English.

Prerequisite: LENG 111

3 credits

### **ENGL 210: Creative Writing**

An introductory course providing instruction and practice in the techniques and principles of writing poetry and short fiction.

Prerequisites: LENG 111, LENG 112

3 credits

### **ENGL 211: Advanced Composition**

A rhetorical approach to problems of written communication. Although primary stress will be on developing the student's writing ability, knowledge of rhetorical theory and of critical norms for prose will be required.

Prerequisites: LENG 111, LENG 112

3 credits

### **ENGL 212: Business and Professional Communication**

A detailed study of the various methods of communication used in the professions, business, and industry, for audiences both within and outside the organization. Numerous written exercises. (This course is also listed as BCOR 231).

Prerequisites: LENG 111, LENG 112

3 credits

### **ENGL 214: Writing for Print/News Media**

This workshop course introduces new students to the basics of journalistic reporting and writing. Students receive practice in how to identify, gather, and write news; and make ethical judgments about news. The course should help students who want to work for newspapers and magazines as well as for broadcast and online media. This course is a prerequisite for ENGL 216 and ENGL 252.

Prerequisites: LENG 111, 112

3 credits

### **ENGL 215: Editing/Production of Print Media**

The course introduces students to the production of printed material, whether for newspaper, magazines, advertising, in-house publications, brochures, books, or anything else on paper.

Prerequisites: LENG 111, LENG 112

3 credits

### **ENGL 216: Advanced and Specialized Reporting**

This workshop course focuses on specialized news beats including police, courts, government, education and the environment and introduces students to computer-assisted reporting and research techniques.

Prerequisites: ENGL 214/JCOM 214

3 credits

**ENGL 217: Introduction to Linguistics \***

An introduction to the basic concepts of linguistics with an emphasis on both theory and application of linguistic principles. Topics include origin, structure, morphology, syntax, dialects, oral, and written language.

Prerequisites: LENG 111, LENG 112

*3 credits*

**ENGL 218: Feature Writing**

This workshop course introduces students to various genres of feature writing for newspapers, magazines and online publications, including profiles, entertainment pieces and trend stories.

Prerequisites: LENG 111, LENG 112

*3 credits*

**ENGL 225: Special Topics**

Prerequisites: LENG 111, LENG 112

*1 credit*

**ENGL 240: Leadership Seminar**

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in the various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for students' leadership development as reflected both in this course and in the co-requisite Theology or Philosophy III course. (LTHE 227 or LTHE 237)

*1 credit*

**ENGL 250: Introduction to Photography**

Taking effective and well-composed photographs; using the 35mm camera, its lenses, filters, and flash; developing black and white film; printing artistic enlargements.

Corequisite: ENGL 251

*3 credits*

**ENGL 251: Photography Lab**

Corequisite: ENGL 250

*0 credit*

**ENGL 252: Photojournalism**

This course introduces students to the principles of photojournalism. Students study and practice photojournalism techniques, with consideration of the ethical issues involved with creating and using visual images.

Prerequisite: ENGL 214/JCOM 214

*3 credits*

**ENGL 301: Workshop: Special Topics in Writing**

Specialized forms of writing in a workshop format for advanced writing.

Prerequisite: ENGL 210 or 211

*3 credits*

**ENGL 312: Poetry Writing Workshop**

An advanced seminar and workshop focusing on student's original poetic composition.

Prerequisites: LENG 111, LENG 112

*3 credits*

**ENGL 313: Fiction Writing Workshop**

An advanced seminar and workshop focusing on student's original composition of short fiction.

Prerequisites: LENG 111, LENG 112

*3 credits*

**ENGL 321: Literature For Young Adults**

A study of distinguished literature for young adults and of the historical development and current trends in adolescent literature.

Prerequisites: LENG 111, LENG 112

*3 credits*

**ENGL 322-326: Author Seminars**

These seminars are opportunities for students to study and enjoy the work of a particular author, whose work is not usually studied in depth in other departmental courses.

Prerequisites: LENG 111, LENG 112

*1 credit*



**ENGL 331: American Literature to 1865**

American prose and poetry to 1865. Major figures include Taylor, Edwards, Franklin, Hawthorne, Melville, Emerson, and Thoreau.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 332: American Literature, 1865 to 1914**

American prose and poetry from the Civil War to World War I. Major figures include Whitman, Twain, James, Dickinson, Crane, Dreiser.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 333: American Literature, 1915 to 1945 \***

American prose, poetry and drama between the World Wars. Major figures include Frost, Hemingway, O'Neill, Faulkner.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 334: American Literature after 1945 \***

American prose and poetry from WW II to the present. Major figures include Arthur Miller, Ralph Ellison, Sylvia Plath, Flannery O'Connor, Toni Morrison, and Thomas Pynchon.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 341: British Literature: Medieval and Renaissance**

The dramatic and non-dramatic literature of the Medieval Period and non-dramatic literature of the Renaissance, with emphasis on the works of Chaucer, More, Sidney, Spenser, Milton, Donne, and Jonson.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 342: British Literature: Classic and Romantic \***

The major writers involved in the shift from classicism to romanticism, with emphasis on Dryden, Pope, Johnson, Swift, Blake, Wordsworth, Coleridge, and Keats.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 343: British Literature: Victorian and Modern \***

Major writers of the Victorian and Modern periods, with emphasis on Dickens, Tennyson, Browning, Yeats, Joyce, Woolf, and Rhys.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 350: Drama of Shakespeare \***

An historical-critical approach to selected plays in terms of the intellectual assumptions, native traditions, and theatrical conventions of the Elizabethan-Jacobean periods.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 352: Modern/Contemporary Drama \***

A critical approach to significant drama from Ibsen to the present and to the intellectual forces and assumptions that contribute to their development.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 354: African American Literature \***

This course examines literature written by African-Americans. Emphasis is on literary and cultural analyses, including issues of race, ethnicity, gender and social class.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 362: History of the English Language \***

Phonological and morphological development of Modern English from the Indo-European period. Methodology of historical linguistics.

Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 363: The Structure of English**

Rationale and application of transformational grammar to linguistic and stylistic analysis.

Prerequisites: LENG 111, LENG 112 3 credits



**ENGL 371: Mass Media and Popular Culture**

This course covers the history, organization and management of mass media. It also covers the concepts and theories of popular culture and mass media, including advertising and public relations as well as news organizations. It examines critical approaches to newspapers, magazines and broadcast and online media as sources of information and entertainment. Among its focuses are the ethical and legal issues faced by news organizations.  
Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 372: Public Relations**

Strategies and communication tools of public relations as a link between an institution and its external and internal public. Cross-listed with ADVC 372.  
Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 375: English Internship**

A semester-long internship providing field experience in areas related to the student's concentration. Students may use no more than 6 practicum credits toward graduation requirement.  
Prerequisites: LENG 111, LENG 112 1-6 credits

**ENGL 381: Literary Criticism \***

Historical and analytical study of critical theory isolating the central critical problems and evaluating some answers that theorists and critics have provided.  
Prerequisites: LENG 111, LENG 112 3 credits

**ENGL 389: Methods of Teaching English**

Cross listed as EDCR 325, methods of teaching literature, writing, critical reading, and grammar in the classroom. Replaces EDCR 324 for English secondary education students only.  
Prerequisites: EDCR 101, 103, LENG 111, 112 3 credits

**ENGL 390-394: Special Topics**

Prerequisites: LENG 111, LENG 112 1-3 credits

**ENGL 395-398: Independent Study**

Prerequisites: LENG 111, LENG 112 1-3 credits

**ENGL 400: Senior Research Project and Oral Exam**

Prerequisites: LENG 111, LENG 112 3 credits

**English Curriculum**

**Professional Writing Track**

FRESHMAN			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	College Composition/LENG 111	3	Crit Analysis & Comp/LENG 112
3	Modern Language	3	Modern Language
3	Sacred Scriptures /LTHE 121	3	Introduction to Philosophy/ LPHI 131
3	Psychology/PSYC 111	3	Pursuits of English/ENGL 206
3	History Without Borders/LHST 111	3	LS Science
2	First-Year Seminar	3	
17		15	
SOPHOMORE			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Linguistics/ENGL 217	3	Upper-level American Lit/ENGL
3	Theology II series/LTHE	3	Philosophy II series/LPHI
3	Basic Sociology/SOC 110	3	Math/PSYC 211 or SOCI 351

- 3 Public Speaking/SPCH 111  
 3 US History/HIST 221 or 222 or  
 English Hist/241 or 242 or US  
 Government/POLI 111 or Public  
 Policy/POLI 122 or Minority  
 Groups/SOCI 230 or Intro to  
 Women's Studies/WMST 100

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 15

### JUNIOR

#### *Fall Semester*

- 3 Theology or Philosophy III Series/  
 LTHE or LPHI  
 3 Upper-level British Lit/ENGL  
 3 Advanced Composition/ENGL 211  
 3 Upper -level Lit/ENGL  
 3 Elective  
 1 Leadership seminar

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 16

### SENIOR

#### *Fall Semester*

- 3 Creative Writing/ENGL 210  
 3 English elective/ENGL  
 3 Elective  
 3 Elective  
 3 Research Project & Oral Report/  
 ENGL 400

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- 3 Fine Arts Series/LFIN  
 3 US History/HIST 221 or 222 or  
 English Hist/241 or 242 or US  
 Government/POLI 111 or Public  
 Policy/POLI 122 or Minority  
 Groups/SOCI 230 or Intro to  
 Women's Studies/WMST 100  
 1 Co-op seminar or equivalent/  
 ENGL 296

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 16

#### *Spring Semester*

- 3 Principles of Marketing/BCOR 241  
 3 Writing course/ENGL  
 3 Upper-level Linguistics/ENGL 373  
 or GENGL 504  
 3 Public Relations/ENGL 372  
 3 English Internship/ENGL 375  
 3 Elective

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 18

## Literature Track

### FRESHMAN

#### *Fall Semester*

- 3 College Composition/LENG 111  
 3 Modern Language  
 3 Sacred Scriptures /LTHE 121  
 3 Psychology/PSYC 111  
 3 History Without Borders/LHIST111  
 2 First-Year Seminar

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 17

#### *Spring Semester*

- 3 Crit Analysis & Comp/LENG 112  
 3 Modern Language  
 3 Intro to Philosophy/LPHI 131  
 3 Pursuits of English/ENGL 206  
 3 LS Science

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 15

### SOPHOMORE

#### *Fall Semester*

- 3 Linguistics/ENGL 217  
 3 Theology II series/LTHE  
 3 Basic Sociology/SOC 110  
 3 Public Speaking/SPCH 111  
 3 US History/HIST 221 or 222 or  
 English Hist/241 or 242 or US  
 Government/POLI 111 or Public  
 Policy/POLI 122 or Minority

#### *Spring Semester*

- 3 Upper-level American Lit/ENGL  
 3 Philosophy II series/LPHI  
 3 Mathematics  
 3 Fine Arts Series/LFIN  
 3 US History/HIST 221 or 222 or  
 English Hist/241 or 242 or US  
 Government/POLI 111 or Public  
 Policy/POLI 122 or Minority

	Groups/SOCI 230 or Intro to Women's Studies/WMST 100		Groups/SOCI 230 or Intro to Women's Studies/WMST 100
		1	Co-op seminar or equiv/ENGL 296
15		16	
JUNIOR			
	<i>Fall Semester</i>		<i>Spring Semester</i>
3	Theology or Philosophy III Series/LTHE or LPHI	3	Upper-level Lit/ENGL
3	Upper-level British Lit/ENGL	3	Upper-level Lit/ENGL
3	Creative Writing/ENGL 210	3	History of the Language/ENGL 362
3	Drama of Shakespeare/ENGL 350	3	Writing Course/ENGL
3	Elective	3	English Internship/ENGL 375
1	Leadership seminar	3	Elective
16		18	
SENIOR			
	<i>Fall Semester</i>		<i>Spring Semester</i>
3	Upper-level Lit/ENGL	3	Upper-level Lit/ENGL
3	Upper-level Lit/ENGL	3	English elective/ENGL
3	Literary Criticism/ENGL 381	3	Elective
3	Elective	3	Elective
3	Research Project & Oral Report/ENGL 400	3	Integrating Seminar/LBST 383
		1	Elective
15		16	

### Legal Career Track

Students pursuing the legal career track are encouraged to use elective credits to earn a Legal Studies certificate.

FRESHMAN			
	<i>Fall Semester</i>		<i>Spring Semester</i>
3	College Composition/LENG 111	3	Crit Analysis & Comp/LENG 112
3	Modern Language	3	Modern Language
3	Sacred Scriptures /LTHE 121	3	Intro to Philosophy/LPHI 131
3	Psychology/PSYC 111	3	Pursuits of English/ENGL 206
3	History Without Borders/LHIST111	3	LS Science
2	First-Year Seminar		
17		15	
SOPHOMORE			
	<i>Fall Semester</i>		<i>Spring Semester</i>
3	Introduction to Law/LEGL 111	3	Upper-level American Lit/ENGL
3	Theology II series/LTHE	3	Philosophy II series/LPHI
3	Advanced Composition/ENGL 211	3	Mathematics
3	Public Speaking/SPCH 111	3	Fine Arts Series/LFIN
3	US History/HIST 221 or 222 or English Hist/241 or 242 or US Government/POLI 111 or Public Policy/POLI 122 or Minority Groups/SOCI 230 or Intro to Women's Studies/WMST 100	3	US History/HIST 221 or 222 or English Hist/241 or 242 or US Government/POLI 111 or Public Policy/POLI 122 or Minority Groups/SOCI 230 or Intro to Women's Studies/WMST 100
		1	Co-op seminar or equivalent/ENGL 296
15		16	

JUNIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Theology or Philosophy III Series/ LTHE or LPHI	3	Upper-level Lit/ENGL
3	Linguistics/ENGL 217	3	Business/Prof. Comm./ENGL 212
3	Basic Sociology/SOCI 110	3	Structure of English/ENGL 363 or Sociolinguistics/GENGL 504
3	Upper-level British Lit/ENGL	3	English Internship/ENGL 375ENGL
3	Legal Research and Writing I/ LEGL 211	3	Legal Research and Writing II/ LEGL 212
1	Leadership seminar	3	Elective
16		18	
SENIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Upper-level Lit/ENGL	3	Upper-level Lit/ENGL
3	Research Project & Oral Report/ ENGL 400	3	Trial Preparation & Procedure/ LEGL 345
3	English Elective/ENGL	3	Elective
3	Elective	3	Elective
3	Elective	3	Integrating Seminar/LBST 383
		1	Elective
15		16	

**English Curriculum with Secondary Education**

Students majoring in English qualify for Teacher Certification in English/Secondary Education.

**Aims and Objectives**

The objectives of the program are: (1) to give the students an opportunity to become broadly educated in the areas of language, literature and writing, and (2) to provide a program of teacher education which promotes growth, development, professionalism and expertise for successful teaching.

Students who wish to prepare themselves as secondary English teachers must make formal application to the teacher education program through the School of Education. For a detailed explanation of all requirements refer to the catalog portion under Education.

**English/Secondary Education Curriculum**

*(Numerals in front of courses indicate credits)*

FRESHMAN			
<i>Fall</i>		<i>Spring</i>	
1	Foundations of Teaching/EDCR 103	3	Psychology of Learning/Teaching/ EDCR 101
2	First-Year Seminar/EDCR 104*	3	Pursuits of English/ENGL 206
3	Public Speaking/SPCH 111	3	Critical Analysis/Composition/ LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
3	History Without Borders/LHST 111	3	Basic Sociology/SOCI 110
3	Introduction to Philosophy/LPHI 131	3	Modern Foreign Language
3	Modern Language		
18		18	

## SOPHOMORE

<i>Fall</i>		<i>Spring</i>	
3	Instr Design & Sec Educ Classroom/ EDCR 206	{1 3	Leadership Seminar Phil of Ethical Respons/LPHI 237
0	Secondary/Education Field Exp I+/ EDFL 101	3	or Theo of Moral Respons/LTHE 227 Literature for Young Adults/ ENGL 321
3	Advanced Composition/ENGL 211	3	Fine Arts Series/LFIN 253
3	Linguistics/ENGL 217	3	Applied Statistics/MATH 213 or Psychological Statistics I/PSYC 211
3	Theology II Series/LTHE	3	Special Education Overview/ SPED 101
3	HIST 221, 241, POLI 111, 122, or SOCI 230	3	
3	Quantitative Literacy/MATH 103	—	
18		16	

## JUNIOR

<i>Fall</i>		<i>Spring</i>	
3	Literacy Development, Strategies and Assessments/MLED 301*	3	English Elective/ENGL
1	Mat/Meth for Instr Sem/EDCR 321	3	American British Lit/ENGL
0	Secondary/Education Field Exp II+/ EDFL 102	3	Structure of English/ENGL 363
3	Drama of Shakespeare/ENGL 350	3	Mass Media/ENGL 371
3	Literary Criticism/ENGL 381	3	Writing Course/ENGL
3	Writing Course/ENGL	{3 0	Meet Need Stu. Exceptionalities 7-12/SPED 340
3	Philosophy II Series/LPHI	0	Secondary Education Field Exp III+/ EDFL 103
16		18	

## SENIOR

<i>Fall</i>		<i>Spring</i>	
3	Assessment and Evaluation/EDCR 330*	3	Professional Seminar/EDCR 401
3	Methods/Materials for ELL/EDCR 420*	12	Student Teaching/EDFL 410
3	Science Series		
3	Methods of Teaching English/ENGL 389		
3	Research Project/Oral Report/ENGL 400		
3	British Literature/ENGL		
18		15	

Total credits: 137

\*Field Experience embedded throughout semester

## { Cohort Courses

All education courses require a grade of C or better.

All field experience require a grade of pass (P).

LENG 111, LENG 112, Literature Series, MATH 103, and MATH 213 or PSYC 211 require a C or better.

A GPA of 3.0 or greater is required of all students seeking teacher certification.

Diversity courses (9 credits) are part of the 48 credits in the field of concentration and are designated by an \* in the catalog. Part of the 48 credits in the field of concentration must address American, British, and World Literature.

**4 + 1 B.A./M.A. in English**

This program allows highly qualified students to complete the Bachelor's and Master's degree in five years rather than six. Students of exceptional promise may be admitted to the program at the time of undergraduate admission; admitted students would be in the top 10%

of their graduating class, have earned a B+ or above average in their English courses, and have scored 600 or above on the SAT verbal section. These students would be accepted with the understanding that at the completion of their junior year they would have maintained a sufficiently high GPA both overall and particularly in their major (3.2 overall and 3.5 in the major). Students not initially recruited for the program who met these criteria could also be invited to participate. A definite commitment on the part of the department and of the student would be made at the conclusion of the fifth semester (midway through the junior year). Students accepted into the program upon admission would be able to complete it without having to take summer courses. Students who are admitted later, and who have completed fewer than 68 credit hours by the end of the sophomore year, will need to take summer credits during the third and/or fifth summer. Students who are interested in the program, but who are not accepted at admission, will be encouraged to complete several major courses during the sophomore year and to take a full load.

**4+1 B.A. to M.A. Matrix**

FRESHMAN			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	College Composition/LENG 111	3	Critical Analysis & Comp/LENG 112
3	Modern Language	3	Modern Language
3	Sacred Scriptures/LTHE 121	3	Intro to Philosophy/LPHI 131
3	Intro to Psychology/PSYC 111	3	Speech/SPCH 111, 113, or 115
3	History without Borders/LHIST 111	3	Mathematics
2	First-year seminar	3	Pursuits of English/ENGL 206
17		18	
SOPHOMORE			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Theology II Series/LTHE	3	Philosophy II Series/LPHI
3	US History/HIST 221 or 222 or English Hist/241 or 242 or US Government/POLI 111 or Public Policy/POLI 122 or Minority Groups/SOCI 230 or Intro to Women's Studies/WMST 100	3	US History/HIST 221 or 222 or English Hist/241 or 242 or US Government/POLI 111 or Public Policy/POLI 122 or Minority Groups/SOCI 230 or Intro to Women's Studies/WMST 100
3	LS Science	3	American Literature/ENGL
3	Linguistics/ENGL 217	3	Writing course/ENGL
3	Writing course/ENGL	3	Upper-level literature elective/ENGL
3	British Literature/ENGL	3	English elective/ENGL
18		18	
JUNIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Theology or Philosophy III series/LTHE or LPHI	3	Upper-level Linguistics/ENGL 362 or ENGL 363
3	Drama of Shakespeare/ENGL 350	3	English Internship/ENGL 375
3	Literary Criticism or Mass Media Media & Communications/ENGL 381 or ENGL 371	3	English elective/ENGL
3	Writing course/ENGL	3	Undergraduate elective
3	Undergraduate elective	3	Undergraduate elective
1	Leadership seminar		
1	Co-op seminar/ENGL 296		
17		18	

## SENIOR

<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Research Project & Oral Report/ ENGL 400	3	Basic Sociology/SOCI 110
3	LS Fine Arts/LFIN	3	Integrating Seminar/LBST 383
3	Undergraduate elective	3	Undergraduate elective
3	Intro to Grad Studies in English/ GENGL 500	3	Undergraduate elective
3	Linguistics/GENGL	3	Creative Writing/GENGL 602
1	Undergraduate electives	3	American Literature/GENGL
16		18	

## GRADUATE

<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Theory course/GENGL	3	Later British Literature/GENGL
3	Early British Literature/GENGL	3	Literary Criticism or Free Elective/ GENGL*
3	Directed Research/GENGL 690	3	Free elective
9		9	

\* Students who take an undergraduate Literary Criticism course may substitute an elective for Literary Criticism if desired.

## ENGLISH MINOR

A minor in English will consist of 18 hours beyond the Liberal Studies Core Curriculum required courses. At least 3 of the credits will be in literature, 3 credits in linguistics and 3 credits in writing. The remaining hours will be in any ENGL designated credits.

*The Gannon University – Duquesne School of Law, 3+3 Early Admissions Program* has been designed for qualified students to earn an undergraduate and a law degree in six years rather than seven. Under the early admissions program students may receive a *Bachelors Degree in English* after three years of undergraduate work and the successful completion of the first year of full time study at the Duquesne School of Law. Students would then receive their Law Degree after successful completion of the second year at Duquesne School of Law. Qualified students may wish to pursue this option.

## THE NEXT STEP

## Baccalaureate Degree Program for Graduates of Two Year Colleges

## Prerequisite:

Six credits of composition equivalent to LENG 111 and LENG 112.

## English

(Numerals in front of courses indicate credits)

## PRE-SENIOR YEAR

<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Introduction to Philosophy/LPHI 131	3	Pursuits of English/ENGL 206
6	US History/HIST 221 or 222 or English History/HIST 241 or 242 or US Government/POLI 111 or Public Policy/POLI 122 or Minority Groups/SOCI 230	3	ENGL 200 or ENGL 300 level writing course
3	Intro to Linguistics/ENGL 217	3	ENGL 362, ENGL 363, ENGL 300 level linguistics course
3	Foreign Language	3	Foreign Language
15		15	Sacred Scriptures/LTHE 121

SENIOR YEAR	
<i>Fall Semester</i>	<i>Spring Semester</i>
3 Shakespeare/ENGL 350	3 ENGL 300 level literature before the 19th Century
3 Literacy Criticism/ENGL 381 or Mass Media/ENGL 371	12 ENGL 200 or 300 level literature electives
3 Fine Arts Series/LFIN	3 ENGL 400 Senior Project
3 Theology or Philosophy Series III/LTHE or LPHI	
3 ENGL 300 level literature before the 19th Century	
1 Leadership Seminar	
<hr/> 16	<hr/> 18

Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program. Students are required to complete 7-19 credits in the Liberal Studies Core Curriculum. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series, and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon University.

All students graduating from the College of Humanities must have completed six credits of a Modern Foreign Language.

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# FINE ARTS

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*(School of Communication and the Arts)*

FACULTY: *Professor:* Michael E. DeSanctis. *Visiting Professor:* Megan Woller.

American education at all levels is giving increasing recognition to the importance of Art and Music in the educational process. As technology makes more and more leisure time available to people, it is imperative that they be prepared to use this time in a way that truly enriches them; for leisure, if not used constructively for personal growth and enrichment, can become enervating rather than re-creative. Throughout history it has been acknowledged that communion with works of art and music has promoted such personal growth.

Each historical period has its own formal language, called style, by which the artists or composer expresses himself. Courses in Art History are designed to help the student comprehend the various period styles – including those of today – in architecture, sculpture, painting and the so-called minor arts, in a personally satisfying way. Courses in Music provide similar opportunities for growth through that medium. In all course the works of art and music are set against the social and cultural background of their time.

It is commonplace to say that the professional person must be a person of culture, not merely a technician. Art and music form an integral part of the western culture which shapes our lives. Moreover, career opportunities in musicology, art history, museum curatorships and similar professions are beckoning more and more men and women who specialize in the knowledge to which the Fine Arts provides an introduction.

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# COURSE DESCRIPTIONS:

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## Art

### FINA 221: Renaissance Art

The arts of the so-called “rebirth” of western culture, from the International Style of ca. 1400



A.D. and "Late Gothic" style in Northern Europe, through the early and high Renaissance in Italy and their spread northward. *3 credits*

**FINA 224: Baroque Art**

The development of art and architecture from the change in style ca. 1520 known as Mannerism, through the Baroque and Rococo phases in Mediterranean and Northern Europe. *3 credits*

**FINA 232: Erie Architecture**

A close-up study of the built environment in Erie, Pennsylvania. The course examines the various ways in which architecture shapes the places, in which Erie residents live, work, pray, and recreate. Class sessions are almost entirely outside the classroom and will include tours of important buildings and local architectural firms. *3 credits*

**FINA 235: Christian Art and Architecture**

A broad survey of the various ways in which Christian faith has been expressed in the pictorial and building arts. Special attention is devoted to the evolution of the Christian place of worship, from the earliest house-church and basilica settings to the high-tech, televangelization centers of today. *3 credits*

**FINA 281: Problems in Contemporary Art and Architecture**

The role of modern art criticism, the desacralization of modern art, and the demise of the art object. One seminar meeting per week. *3 credits*

**FINA 282: Modern Art**

A survey of the leading movements in painting, sculpture, and architecture during the 19th and 20 centuries. *3 credits*

**FINA 284: American Art**

The development of American painting, sculpture and architecture from their provincial status in colonial times to their preeminence on the world scene after World War II. *3 credits*

**FINA 380: Art and the Sacred**

This course invites students to explore the historic relationship between aesthetic and spiritual experience. While the course focuses primarily on artistic expression in the Judeo-Christian tradition, students are encouraged to examine the ways in which other world religions give rise to sacred image-making, music, dance, drama, sculpture and architecture. A fundamental premise of the course is that the arts are, in the Christian sense, both "incarnational" and "sacramental" in that they mimic Jesus Christ's own enfleshment as "the visible image of the invisible God" (Col. 1:15), and serve as means by which people of faith make contact with the sacred, the transcendent, the divine. The course relies heavily on group discussion of ideas and images related to the topic. As often as possible, students are introduced to the work of local artists, theologians and persons involved in religious ministries and receive firsthand experience of sacred artworks. *3 credits*

**FINA 390: American Architecture**

A broad survey of the American architectural tradition. The entire range of American building practices is examined, from the earliest colonial experiments to the latest Postmodern skyscrapers. *3 credits*

**FINA 391-394: Special Topics in Art History/Theory**

*1-3 credits*

**FINA 395-99: Independent Study**

*1-3 credits*

**FINA 400: Senior Seminar**

*3 credits*

**Music**

**MUSC 100-105: Mixed Chorus 1-6**

Reading, rehearsal and performance of sacred and secular choral literature. Open to all qualified students. One hour rehearsal weekly. May be taken on a non-credit basis. *1 credit*

**MUSC 110-180: Instrumental Ensemble 1-8**

Opportunity for students with instrumental background to perform in small ensembles (string, wind, etc.)

*1 credit*

**MUSC 200-208: Band 1-9**

Opportunity for qualified students to perform in the Concert Band. Two-hour rehearsal weekly with performances at the end of each semester. May be taken on a non-credit basis.

*1 credit*

**MUSC 231: Beethoven and His Influence**

The music of the Classical Era, centering on the personality and works of Beethoven. Several of the artist's compositions are studied in depth, with special emphasis on the socio-political context of their creation and the influence of musical antecedents.

*3 credits*

**MUSC 238: Expansive Sounds of the 19th Century**

A course treating the various sounds developed by the Romantic composers and their social/psychological effects. Topics include the works of contemporaneous composers and artists, the influence of the Industrial Revolution, the expansion of the musical audience, and the "spontaneous overflow" of music in 19th-century society.

*3 credits*

**MUSC 246: The Music of Our Century**

A study of the music of our time and the forces shaping it, especially technology, the intellectual climate of the 20th century, and relations between humanity and its environment. In addition to art music, popular and experi-music and their role in our society will be examined.

*3 credits*

**MUSC 250: Music and Psychology**

An exploration of the impact of music on the human psyche and reasons for our responses to various types of musical stimuli. Such areas in music as consonance/dissonance, rhythmic patterns, volume and density, melodic and harmonic structure will be examined in detail.

*3 credits*

**MUSC 251: Music in Advertising and Marketing**

Explores the contribution of music to modern advertising and marketing. The course devotes particular attention to the relationship between audio and visual effects in radio and television advertising. Rhythmic patterns, voice timbre, consonance/dissonance, and melodic devices will be examined.

*3 credits*

**MUSC 252: Music in the Theatre**

Examines the role of music as an inherent element of drama. The course surveys various forms of musical and dramatic expression and their application in theatrical productions.

Prerequisite: THEA 111 or LFIN 250

*3 credits*

**MUSC 390-394: Special Topics in Music**

*1-3 credits*

**MUSC 395-399: Independent Study**

*1-3 credits*

**MUSC 400: Senior Seminar**

*3 credits*

**Fine Arts Minor**

The Fine Arts Minor is intended to serve those students who, while not necessarily choosing to pursue professional involvement in the fine arts, nevertheless wish to learn more about the history, theory and practice of the various modes of human creativity. The minor is conceived as a broad, interdisciplinary survey of the expressive arts that places heavy emphasis on the creative act as a way of shaping thought. Guiding students through the minor are faculty members from various academic departments whose own interests lie in the area of creative expression. Students pursuing the minor are encouraged to make use of the University's urban campus and close proximity to such local art resources as the Fine Art Museum, Erie Playhouse, and the Erie Philharmonic.

The minor offers two options or 'tracks' students may take to suit their particular, academic interests:

**Track 1: Theoretical**

This track consists exclusively of theoretical courses offering participants a broad view of various modes of creative expression and their interrelatedness.

**Track 2: Applied**

This track requires participants to complete no fewer than two studio-type courses (e.g., Introduction to Photography, Fiction Writing) that challenge them to apply their acquired knowledge of arts theory and history to some creative act. Students opting for Track 2 will be required to present for faculty review a formal portfolio or performance demonstrating growth in their chosen art form.

**Course Requirements:**

**Track 1: Theoretical:** 6 credits from Level One, Foundation Course Selection, plus 12 credits from Level Two, Elective Course Selection.

**Track 2: Applied:** 6 credits from Level One, Foundation Course Selection, plus 12 credits from Level Two, Elective Course Selection (of which 6 must be applied arts.) A non-credit, synthesizing portfolio or performance is also required for successful completion of this track.

**Level One – Foundation Course Selection (6 credits)**

LFIN 250	Theatre and Culture
LFIN 251	Introduction to Music
LFIN 253	Introduction to Visual Arts
LFIN 254	Art of the Film

**Level Two – Elective Course Selection (12 credits)**

COMM 356	Digital Graphics*
COMM 357	Animation*
COMM 358	Digital Drawing*
COMM 390	Special Topics
ENGL 210	Creative Writing*
ENGL 250	Introduction to Photography*
ENGL 312	Poetry Writing Workshop*
ENGL 313	Fiction Writing*
ENGL 390	Special Topics
FINA 232	Erie Architecture
FINA 235	Christian Art and Architecture
FINA 380	Art and the Sacred
FINA 281	Problems in Contemporary Art and Architecture
FINA 282	Modern Art
FINA 390	American Architecture
FINA 391	Special Topics
LFIN 252	Women in Photography
LFIN 310	Music and Medicine
MUSC 200-208	Band (1 credit)*
MUSC 231	Beethoven and His Influence
MUSC 250	Music and Psychology
MUSC 251	Music in Advertising and Marketing
MUSC 252	Music in the Theater
MUSC 390	Special Topics
PSYC 300	Psychology of Creativity*
THEA 251	Psychology of Design*
THEA 252	Costume and Makeup*
THEA 390	Performance and Production in Theatre*

THEA 396 Dance (1 credit)\*

THEA 390 Special Topics

\*denotes applied course

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## FOREIGN LANGUAGES AND CULTURES

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MARTHA KOSIR, Ph.D., *Chairperson*

FACULTY: *Associate Professors:* Martha Kosir, Carlos Mamani. *Adjunct Faculty:* Linda Brown.

Latin, Greek and Arabic are taught by affiliate faculty in the Philosophy, Theology, English, and History departments.

### Aims and Objectives:

The Department of Foreign Languages and Cultures offers the following programs: Foreign Language, Foreign Languages/Government and, Foreign Languages/Business options. The staff offers courses in language, literature and linguistics as well as specialized courses in terminology and practices in such fields as business, criminal justice, social services, and health sciences. Courses in political science and business are presented in conjunction with the respective departments. The languages offered are French, German, Spanish, Latin, Chinese, and occasionally Greek, and Hebrew, **with majors only in French and Spanish.**

Instruction is given in modern classrooms, all equipped with a digital dais. Instructional and informative technology is an integral part of foreign language instruction at Gannon University. For use outside of classroom, additional computers are available in the departmental Language Lab.

The University maintains affiliations with programs for study abroad and encourages students to spend a summer or a semester at a university in Europe, Latin America, French Canada, or worldwide.

CAREER OPPORTUNITIES: Employment here and the U.S. and abroad with governmental and private agencies; multinational businesses; in tourism and travel industry; in communication and translation; in education on the primary and secondary level and in bilingual/bicultural agencies. Excellent preparation for graduate studies in languages, international business, law, international relations and global studies.

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### Foreign Language Programs

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The Foreign Language Program is available in three options: Foreign Languages, Foreign Languages/Government and, Foreign Languages/Business.

#### A. Foreign Language/Government Option:

In an increasingly complex and global world, learning about the ways in which other nations live, think and conduct their affairs is of the greatest importance. In recognition of this fact, this program option is offered jointly by the Department of Foreign Languages and the Department of Political Science, Legal and International Studies. Thorough study of one modern language is combined with courses in political science, geography, history, economics and the appropriate area studies. A working knowledge of a second foreign language may be acquired through electives. Internships on the state and federal level are available and strongly recommended, as is study abroad. This program provides excellent preparation for entry level positions in government service, as well as for graduate studies in political science, international relations, intercultural/global studies and law.

**B. Foreign Language/Business Option:**

In recognition of the ever increasing interdependence of the leading economies of the world, and of the vital role of cross-cultural understanding and international cooperation, this program is offered in conjunction with the School of Business. The program prescribes competency in one or two modern languages including orientation in the culture of the regions where these languages are spoken and in the ways they conduct their business affairs. Internships are highly recommended and provide important practical experience. Study abroad is strongly recommended. This program provides excellent preparation for entry level positions in companies doing business internationally, in government service and international agencies, and for graduate studies in business as well as public and international affairs.

**C. Foreign Language Program:**

The literature and civilization course offerings are designed to develop the student's appreciation of the cultural and aesthetic system of the people under study. They are supported by courses in linguistics as well as by cognate courses in philosophy, psychology, sociology, history and the arts. Study abroad is strongly recommended as it provides an excellent opportunity for students to fully immerse themselves in the language and culture of their study. This track prepares the student for graduate school, college teaching and professional translation.

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**Foreign Language Minor**

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The department grants a minor to qualified seniors upon graduation. Seniors who major in fields other than foreign languages but who have successfully passed four upper level courses plus FL 210 and FL 211 in one foreign language qualify for the minor. Students entering with a level higher than 211, take 6 upper level courses. The total of credits necessary for a minor in language is 18 credits. Students interested in this minor should consult with the chairperson of the language department early in their academic career for advice on the sequence of courses to take and must complete an application form for a minor in the Dean's office.

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**GUIDELINES FOR PLACEMENT IN FOREIGN LANGUAGE COURSES**

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Advisors please follow these guidelines or consult the Language Department.

All students who have studied a foreign language for a year or less in high school should take CHIN 111, FREN 111, GREK 111, GRMN 111, LATN 111 or SPAN 111. Those who have studied 2 years should begin with 112. Students who have taken 3 or 4 years in high school and wish to continue with the same language, should begin at the intermediate level. Students with more than 4 years should start at the Reading level.

Native speakers cannot fulfill their foreign language requirement with Introductory (111, 112), Intermediate (210, 211) and Conversation (314) courses in their native language. They must substitute their language requirement with a different foreign language course.

PLEASE NOTE THAT STUDENTS SHOULD FULFILL THEIR LANGUAGE REQUIREMENT NO LATER THAN THE JUNIOR YEAR.

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## COURSE DESCRIPTIONS:

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### Foreign Language Program

#### Arabic Language

##### **ARABI 111: Introductory Arabic I**

Acquisition of basic skills in listening, speaking, reading, and writing Arabic. For students with no background in Arabic or only one year of high school Arabic.

Prerequisite: Director's permission

*3 credits*

##### **ARABI 112: Introductory Arabic II**

Acquisition of basic skills in listening, speaking, reading, and writing Arabic. For students with one semester of university level Arabic or equivalent.

Prerequisite: ARABI 111 or equivalent or Director's permission

*3 credits*

##### **ARABI 210: Intermediate Arabic I**

Continuation of all skills acquisition with emphasis on spoken Arabic.

Prerequisite: ARABI 112 or equivalent or Director's permission

*3 credits*

##### **ARABI 211: Intermediate Arabic II**

Review of language skills and further study of intermediate Arabic grammar.

*3 credits*

#### Chinese Language

##### **CHIN 111: Introductory Chinese I**

Acquisition of basic skills in listening, speaking, reading, and writing Chinese. For students with no background in Chinese or only one year of high school Chinese.

*3 credits*

##### **CHIN 112: Introductory Chinese II**

Acquisition of basic skills in listening, speaking, reading, and writing Chinese. For students with one semester of university level Chinese or equivalent.

Prerequisite: CHIN 111

*3 credits*

##### **CHIN 210: Intermediate Chinese I**

Continuation of all skills acquisition with emphasis on spoken Chinese.

Prerequisite: CHIN 112 or equivalent or Director's permission.

*3 credits*

##### **CHIN 211: Intermediate Chinese II**

Review of language skills and further study of intermediate Chinese grammar.

Prerequisite: CHIN 210 or equivalent or Director's permission.

*3 credits*

##### **CHIN 390-395: Independent Study/Special Topics**

Prerequisites: CHIN 210, CHIN 211

*1-3 credits*

#### French Language

##### **FREN 111: Introductory French I**

Acquisition of basic skills in listening, speaking, reading and writing French. For students with no background in French or only one year of high school French.

Prerequisite: Directors permission.

*3 credits, Fall*

##### **FREN 112: Introductory French II**

Acquisition of basic skills in listening, speaking, reading and writing French.

Prerequisite: FREN 111 or equivalent or Directors permission.

*3 credits, Spring*

##### **FREN 210: Intermediate French I**

Continuation of all skills acquisition with emphasis on spoken French.

Prerequisites: FREN 112 or equivalent or Directors permission.

*3 credits*

**FREN 211: Intermediate French II**

Review of the language skills and further study of intermediate French grammar.

Prerequisite: FREN 210 or equivalent or Director's permission. *3 credits*

**FREN 232: Reading French**

Preparation for more advanced reading in French.

Prerequisite: FREN 211 or equivalent. *3 credits*

**FREN 240: French Phonetics**

Theory of speech production; discrimination of oral styles including voice inflection and gesture.

Prerequisite: FREN 211 or equivalent *3 credits*

**FREN 312: French Civilization I**

French civilization from beginning to French Revolution.

Prerequisites: FREN 211, FREN 232 or equivalent *3 credits*

**FREN 313: French Civilization II**

Contemporary society in France.

Prerequisites: FREN 211, FREN 232 or equivalent *3 credits*

**FREN 314: French Conversation**

Increased fluency, idiomatic and cultural authenticity are emphasized.

Prerequisites: FREN 211 or equivalent, not open to native speakers *3 credits*

**FREN 315: Advanced French Grammar**

Further training in correct grammar, speech, and composition. Required for majors.

Prerequisites: FREN 211 or equivalent *3 credits*

**FREN 316: French Composition**

Advanced training in composition and stylistics.

Prerequisites: FREN 211, 315 or equivalent *3 credits*

**FREN 317: French for Business I**

Introduction to general business vocabulary to cover the organization of French businesses, banking, transport, international business, stock market, insurance, looking for a job, business letters.

Prerequisite: FREN 211 or Director's permission. *3 credits*

**FREN 318: French for Business II**

A continuation of FREN 317 with further development of French business culture, case studies of businesses, study of overall French economy, and its links in the global economy.

Prerequisite: FREN 317 or equivalent. *3 credits*

**French Literature****FREN 320: Popular French Fiction**

Study of the popular short story and novel in post-war France.

Prerequisite: FREN 211, FREN 232 or equivalent *3 credits*

**FREN 331: Survey of French Literature, Part I**

Major movements and figures. Reading of representative works from the beginnings to 1800.

Prerequisites: FREN 211, FREN 232 or equivalent *3 credits*

**FREN 332: Survey of French Literature, Part II**

Major movements and figures. Reading of representative works.

Prerequisites: FREN 211, FREN 232 or equivalent *3 credits*

**FREN 335-338: Readings in French Literature and Culture**

Topics for this advanced course will vary from semester to semester by genre and literary period.

Prerequisites: 3 upper level French courses or Director's permission *3 credits*

**FREN 390-395: Independent Studies/Special Topics***1-3 credits***FREN 396-397: Study Abroad**

Credit awarded for participation in classes and activities taught in French and arranged abroad by the University, either for a semester or in the summer.

Prerequisite: Permission of the Department.

*12-18 credits, Fall and Spring  
6-12 credits, Summer*

**FREN 399: Senior Oral**

Required of all foreign language majors except teacher candidates, in the semester immediately prior to graduation. Independent study/research on a topic approved by the department, resulting in a paper written in the foreign language and defended in the language during the oral examination.

*1 credit***GLOBL: Global Cultures/Literatures**

This series explores diverse world cultures and their productions—including music, art, film, and literature.

**GLOBL 280: The Cultures of Mesoamerica**

This course is a survey of the Indigenous cultures of Mesoamerica—México and Central America—before and after the Encounter. It aims to show the continuity of Indian cultures, their cultural and political struggles and it will also focus on the worldviews shared by many of the native groups and their contributions.

*3 credits***GLOBL 281: Literatures of the Native Americas 1: Pre-Colombian and Colonial**

This course is a survey of the “literatures” and oral traditions of the Native Cultures of the Americas from before the arrival of the Europeans to the colonial periods.

*3 credits***GLOBL 282: Literatures of the Native Americas 2: Postcolonial to the Present**

This is an overview of the cultural productions of the Indigenous Cultures in the context of their relationship with the new national governments following the collapse of the European domination in the Americas. We will examine how that relationship is represented in different types of “texts.”

*3 credits***GLOBL 283: France and the Francophone world**

This course provides an overview of contemporary cultural, political, and social climate in France and the Francophone world. Using a multidisciplinary approach, the course explores topics such as the media, the role of women in those cultures, religious, ethnic and racial diversity. This course explores the search for identity in the Francophone world, given the challenges of the colonialism and acculturation.

*3 credits***GLOBL 290-295: Independent Study/Special Topics in English**

Taught in English. No foreign language credit. These courses can only be used as free electives.

*1-3 credits***GLOBL 390-395: Independent Study/Special Topics in English**

Taught in English. No foreign language credit. These courses can only be used as free electives.

*1-3 credits***German Language**

At present the Department offers only the first year (GRMN 111 and GRMN 112) courses regularly. The other courses are offered on as needed basis.

**GRMN 111: Introductory German I**

Acquisition of basic skills in listening, speaking, reading, and writing German. For students with no background in German or only one year of high school German.

Prerequisite: Director’s permission.

*3 credits, Fall*



**GRMN 112: Introductory German II**

Acquisition of basic skills in listening, speaking, reading, and writing German.

Prerequisite: GRMN 111 or equivalent or Director's permission.

*3 credits, Spring*

**GRMN 210: Intermediate German I**

Continuation of all skills acquisition with emphasis on spoken German.

Prerequisites: GRMN 112 or equivalent or Director's permission.

*3 credits*

**GRMN 211: Intermediate German II**

Review of language skills and further study of intermediate German grammar.

Prerequisite: GRMN 210 or equivalent or Director's permission.

*3 credits*

**GRMN 232: Reading German**

Preparation for more advanced reading in German.

Prerequisite: GRMN 211 or equivalent.

*3 credits*

**GRMN 314: German Conversation**

Increased fluency, idiomatic and cultural authenticity are emphasized.

Prerequisites: GRMN 211 or equivalent, not open to native speakers

*3 credits*

**GRMN 315: Advanced German Grammar**

Further training in correct grammar, composition and speech.

Prerequisite: GRMN 211 or Director's permission or equivalent

*3 credits*

**GRMN 316: German Composition**

Advanced training in composition and stylistics.

Prerequisites: GRMN 211, 315

*3 credits*

**GRMN 390-395: Independent Study/Special Topics**

*1-3 credits*

**GRMN 396-397: Study Abroad**

Credit awarded for participation in classes and activities taught in German and arranged abroad by the University, either for a semester or in the summer.

Prerequisite: Permission of the Department.

*12-18 credits, Fall or Spring*

*6-12 credits, Summer*

**Greek Language****GREK 111: Introductory Greek I**

Introduction to the language of the Greek New Testament.

*3 credits*

**GREK 112: Introductory Greek II**

Advanced syntax and reading of selected passages of the New Testament, and patristic writers.

Prerequisite: GREK 111

*3 credits*

**GREK 390-395: Independent Study/Special Topics**

Prerequisite: GREK 112

*1-3 credits*

**Hebrew Language****HEBR 111: Introductory Hebrew I**

An introduction to Biblical Hebrew grammar, syntax, and vocabulary with selected passages from original writings (Hebrew Bible/Old Testament) read throughout the course.

*3 credits*

**HEBR 112: Introductory Hebrew II**

Advanced grammar, syntax, and reading of selected passages of the Hebrew Bible/Old Testament, allowing students to gain a familiarity not only with the language itself but also with important aspects of Ancient Near Eastern Thought and Culture.

Prerequisite: HEBR 111 or equivalent

*3 credits*

**HEBR 390-395: Independent Study/Special Topics**

*1-3 credits*

## Latin Language

### **LATN 111: Introductory Latin I**

Acquisition of the morphology and syntax.

*3 credits, Fall*

### **LATN 112: Introductory Latin II**

Language and Civilization of Ancient Rome, selected readings.

Prerequisite: LATN 111

*3 credits, Spring*

### **LATN 121: Intermediate Latin I**

Prerequisite: LATN 112 or equivalent

*3 credits, Fall*

### **LATN 122: Intermediate Latin II**

Review of grammar with selected readings.

Prerequisite: LATN 121 or equivalent

*3 credits, Spring*

### **LATN 391: Independent Study/Special Topics**

*1-3 credits*

## Spanish Language

### **SPAN 111: Introductory Spanish I**

Acquisition of basic skills in listening, speaking, reading and writing Spanish. For students with no background in Spanish or only one year of high school Spanish.

Prerequisite: Director's permission.

*3 credits*

### **SPAN 112: Introductory Spanish II**

Acquisition of basic skills in listening, speaking, reading and writing Spanish.

Prerequisite: SPAN 111 or equivalent or Director's permission.

*3 credits*

### **SPAN 210: Intermediate Spanish I**

Continuation of all skills acquisition with emphasis on spoken Spanish.

Prerequisite: SPAN 112 or equivalent or Director's permission.

*3 credits*

### **SPAN 211: Intermediate Spanish II**

Review of language skills and further study of intermediate Spanish grammar.

Prerequisite: SPAN 210 or equivalent or Director's permission.

*3 credits*

### **SPAN 232: Reading Spanish**

Preparation for more advanced reading in Spanish.

Prerequisite: SPAN 211 or equivalent

*3 credits*

### **SPAN 235: Spanish for Medical Personnel**

Acquisition of skills necessary for effective medical communication with Spanish-speaking clientele.

Prerequisite: SPAN 112 or Director's permission.

*3 credits*

### **SPAN 236: Spanish for Social Work and Mental Health Majors**

This course is designed for majors in social work and health sciences. It stresses job related vocabulary and conversational patterns in simulated career situations.

Prerequisites: SPAN 112 or Director's permission. Non-credit course for Spanish majors. *3 credits*

### **SPAN 237: Spanish for Law Enforcement Careers**

For Criminal Justice majors and law enforcement personnel. Job related Spanish in simulated career situations.

Prerequisites: SPAN 112 or Director's permission. Non-credit course for Spanish majors. *3 credits*

### **SPAN 238/GMLTD 538: Spanish for Medical Personnel (trip)**

Acquisition of skills necessary for effective medical communication with Spanish-speaking clientele. The course has an integral 10-day travel component to a Spanish-speaking country, which takes place in May following the end of the spring semester.

Prerequisite: SPAN 112 or Director's permission.

*3 credits*

**SPAN 240: Spanish Phonetics**

Theory of speech production; discrimination of oral styles including voice inflection and gesture.  
Prerequisite: SPAN 211 or equivalent 3 credits

**SPAN 312: Latin-American Civilization**

Historic and contemporary society of Latin American countries.  
Prerequisites: SPAN 211 or equivalent 3 credits

**SPAN 313: Spanish Civilization**

Historic and contemporary society in Spain.  
Prerequisites: SPAN 211 or equivalent 3 credits

**SPAN 314: Spanish Conversation**

Increased fluency, idiomatic and cultural authenticity are emphasized.  
Prerequisites: SPAN 211 or equivalent, not open to native speakers 3 credits

**SPAN 315: Advanced Spanish Grammar**

Further training in correct grammar, composition, and speech.  
Prerequisite: SPAN 211 or Director's permission. 3 credits

**SPAN 316: Spanish Composition**

Advanced training in composition and stylistics.  
Prerequisites: SPAN 211, or Director's permission. 3 credits

**SPAN 317: Spanish for Business I**

Introduction to general business vocabulary to cover the organization of Spanish businesses, banking, transport, international business, stock market, insurance, looking for a job, business letters.  
Prerequisite: SPAN 211, SPAN 315 or Director's permission. 3 credits

**SPAN 318: Spanish for Business II**

A continuation of SPAN 317 with further development of Spanish business culture, case studies of businesses, study of overall Spanish economy, and its links in the global economy.  
Prerequisite: SPAN 317 or Director's permission 3 credits

**SPAN 333: Mexican Civilization**

Historic and contemporary society in Mexico.  
Prerequisites: SPAN 211, SPAN 232 or equivalent 3 credits

**Spanish and Latin American Literature****SPAN 331: Survey of Spanish Literature, Part I**

Major works and their historic context.  
Prerequisites: SPAN 211, SPAN 232 or equivalent 3 credits

**SPAN 332: Survey of Spanish Literature, Part II**

Major works and their historic context.  
Prerequisites: SPAN 211, SPAN 232 or equivalent 3 credits

**SPAN 335: Survey of Latin American Literature I**

Representative works from the pre-Columbian era through the 18th Century.  
Prerequisites: SPAN 211, SPAN 232 or equivalent 3 credits

**SPAN 336: Survey of Latin American Literature II**

Representative literary works from the 19th Century to the present.  
Prerequisites: SPAN 211, SPAN 232 or equivalent 3 credits

**SPAN 337: Golden Age of Spanish Literature**

Novel and Theater. Principal emphasis on Cervantes and Lope de Vega.  
Prerequisites: SPAN 211, SPAN 232 or equivalent 3 credits

**SPAN 340: Spanish American Novel**

Major movements and representative works.

Prerequisites: SPAN 211, SPAN 232 or equivalent

3 credits

**SPAN 390-395: Independent Study/Special Topics**

1-3 credits

**SPAN 396-397: Study Abroad**

Credit awarded for participation in classes and activities taught in Spanish and arranged abroad by the University, either for a semester or in the summer.

Prerequisite: Permission of the Department.

12-18 credits, Fall or Spring

3-9 credits, Summer

**SPAN 399: Senior Oral**

Required of all foreign language majors, in the semester immediately prior to graduation.

Independent study/research on a topic approved by the department, resulting in a paper written in the foreign language and defended in Spanish during the oral examination. 1 credit

**Foreign Languages Curriculum**

(Numerals in front of courses indicate credits)

FRESHMAN			
Fall		Spring	
2	First-Year Seminar	3	Crit Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Intro to Philosophy/LPHI 131
3	History Without Borders/LHST 111	6	Foreign Language
3	Sacred Scriptures/LTHE 121	3	Elective
6	Foreign Language		
17		15	
SOPHOMORE			
Fall		Spring	
3	Public Speaking/SPCH 111	3	Theology II Series/LTHE
3	Philosophy II Series/LPHI	3	Fine Art Series/LFIN
3	Literature Series/LENG	3	Science
6	Foreign Language	6	Foreign Language
15		15	
JUNIOR			
Fall		Spring	
3	Theology or Phil III Series/ LTHE or LPHI	6	Cognates
1	Leadership Seminar	6	Foreign Language
3	Linguistics/ENGL 217	4	Electives
3	Cognates		
6	Foreign Language		
16		16	
SENIOR			
Fall		Spring	
3	Mathematics	3	Senior Seminar/LBST 383
3	Elective	9	Foreign Language
6	Foreign Language	6	Cognates
3	Cognates		
1	Senior Oral		
16		18	

**Total credits: 128**

**Foreign Language/Business Option Curriculum***(Numerals in front of courses indicate credits)*

<b>FRESHMAN</b>	
<i>Fall</i>	<i>Spring</i>
2 First-Year Seminar	3 Critical Analysis/Composition/ LENG 112
3 College Composition/LENG 111	3 Principles of Systems/CIS 195
3 Foundations of Bus. Entprs./BCOR 105	3 Micro Economics/BCOR 111
3 Foreign Language	3 Intro. to Philosophy/LPHI 131
3 Business Technology 1/CIS 150	3 Calculus for Business Students/ MATH 115
3 History Without Borders/LHST 111	3 Foreign Language
—	—
17	18
<b>SOPHOMORE</b>	
<i>Fall</i>	<i>Spring</i>
3 Philosophy II Series/LPHI	3 Theology II Series/LTHE
3 Public Speaking/SPCH 111	3 Princ. of Accounting II/BCOR 215
3 Macro Economics/BCOR 112	3 Sacred Scriptures/LTHE 121
3 Principles of Accounting I/BCOR 214	3 Management Theory and Practice/ BCOR 250
3 Literature Series/LENG	6 Foreign Language
3 Foreign Language	—
—	—
18	18
<b>JUNIOR</b>	
<i>Fall</i>	<i>Spring</i>
3 Theology/Philosophy III Series/ LTHE or LPHI	6 International Business
1 Leadership Seminar	6 Foreign Language
3 Science	3 Fine Arts Series/LFIN
3 Marketing in Globl. Env./BCOR 240	—
6 Foreign Language	—
—	—
16	15
<b>SENIOR</b>	
<i>Fall</i>	<i>Spring</i>
1 Senior Oral/FL 399	3 Liberal Studies Senior Capstone
6 International Business	3 Cognate
3 Cognate	3 International Business
6 Foreign Language	6 Foreign Language
—	—
16	15
<b>Total credits: 133</b>	

**Foreign Languages/Government Option Curriculum***(Numerals in front of courses indicate credits)*

<b>FRESHMAN</b>	
<i>Fall</i>	<i>Spring</i>
2 First-Year Seminar	3 Crit Analysis & Comp/LENG 112
3 College Composition/LENG 111	3 Sacred Scriptures/LTHE 121
3 US Government & Politics/POLI 111	3 Intro to Philosophy/LPHI 131
3 History Without Borders/LHST 111	6 Foreign Language

3	Public Speaking/SPCH 111		
3	Foreign Language		
17		15	
SOPHOMORE			
	<i>Fall</i>		<i>Spring</i>
3	Fine Art Series/LFIN	3	Theology II Series/LTHE
3	Philosophy II Series/LPHI	3	Science
3	Public Policy Analysis/POLI 122	3	Political Science Sequence
3	Introduction to International Relations/POLI 133	6	Foreign Language
6	Foreign Language	3	Electives
18		18	
JUNIOR			
	<i>Fall</i>		<i>Spring</i>
3	Theology or Phil III Series/LTHE or LPHI	6	Political Science/International Studies Sequence
1	Leadership Seminar	6	Foreign Language
3	Mathematics	3	Electives
3	World Geography/GEOG 201		
3	Cognates		
3	Foreign Language		
16		15	
SENIOR			
	<i>Fall</i>		<i>Spring</i>
3	Literature Series/LENG	3	Senior Seminar/LBST 383
3	Political Science/International Studies Sequence	3	Political Science/International Studies Sequence
3	Foreign Language	6	Foreign Language
6	Cognates	3	Cognates
1	Senior Oral		
16		15	
Total credits: 130			

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## GERONTOLOGY

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PARRIS J. BAKER, PhD, MSSA, *Program Director*

FACULTY: Sam Harakal, Audrey McLaughlin, Tom Kolbchar, Parris Baker, Assistant Professor

In the next several decades care of our aging seniors will become one of our nation's most urgent social issues. The needs of older citizens require new interventions and have placed new and greater demands on current family and financial resources. Present and future caregiving responsibilities for the older adult challenge and in some cases exhaust, individual, family, and community social service resources. Greater attention must be directed toward the growing demands for our seniors. Students pursuing four year degree programs of study in all disciplines may expand their professional competencies and increase their employment opportunities by obtaining a minor in Gerontology.

### Gerontology Minor

Students enrolled in other disciplines may obtain a minor in Gerontology upon completion of 18 credits in Gerontology.

- 3 Introduction to Gerontology/GERO or SCWK 211
- 3 Bio-Medical Aspects of Aging/GERO 315 or SCWK 315
- 3 Counseling Older Adults/GERO 316 or SCWK 316
- 3 Mental Health & the Elderly/GERO 336 or SCWK 336
- 3 Gerontology Internship/GERO 375
- 3 Death, Dying, and Bereavement/GERO 400 or SCWK 220

18 credits

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## COURSE DESCRIPTIONS

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### **GERO 211: Introduction to Gerontology**

An overview of the study of gerontology. Examines aging in America, stereotypes, theories on aging, adult development, work and living arrangements, and selected problems of the elderly. This course has a service learning component. 3 credits

### **GERO 213: Medical Terminology**

Basic principles of education to include lecture presentation and preparation, writing behavioral objectives, and taxonomy levels. 1 credit

### **GERO 315: Bio-Medical Aspects of Aging**

This course is designed to familiarize students with the biological and medical changes occurring in people during the aging process. 3 credits

### **GERO 316: Counseling Older Adults**

This course focuses on assessment, counseling interventions and techniques geared to enriching the worlds of mature adults and their families. 3 credits

### **GERO 336: Mental Health and the Elderly**

Factors involved in successful aging and maintenance of healthy personality functioning are investigated. The most common psychological disorders of the elderly are considered from etiological, diagnostic, and therapeutic aspects. 3 credits

### **GERO 375: Gerontology Internship**

Students are provided an opportunity to work with elderly in a field internship of 8 to 16 hours per week at a local agency serving the elderly. 3-6 credits

### **GERO 390-395: Special Topics in Gerontology**

3-6 credits

### **GERO 400: Death, Dying, and Bereavement**

This course explores dying, death, grief, and bereavement, a topic of interest to personnel in the health and human service and other related professions. Issues discussed are theories of dying, death, and bereavement of the aged and assessments and interventions with clients and their families. Socio-cultural differences in attitude and behavior toward death as well as ethical. Legal issues, resources and support services are explored.

Prerequisite: GERO 211

3 credits

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## DEPARTMENT OF HISTORY AND ARCHAEOLOGY

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JEFFREY H. BLOODWORTH, Ph.D., *Chairperson*

FACULTY: *Professor:* Suzanne Richard. *Associate Professor:* Jeffrey H. Bloodworth. *Assistant Professors:* Carolyn Baugh, Geoffrey A. Grundy, John M. Vohlidka. *Adjunct in Geography:* Sue Nelson. *Adjunct in History:* Alexandra Holbrook. *Lecturer:* Peter Agresti.

### **Aims and Objectives:**

We must probe the past if we are to understand the problems of the present as well as the

identity of humankind. Without history, we have no knowledge of who we are or how we came to be; we are like victims of collective amnesia groping in the dark for our identity.

The history major is designed to enable the student to acquire a skilled and sustained sense of historical perspective as well as informed insight into historical method. But beyond this it seeks to develop those skills and attitudes of mind that distinguish the educated person: the habits of skepticism and criticism; of thinking with perspective and objectivity; of judging the good and bad and the in-between. It is hoped, in short, that the history major will lead the student to the attainment of life's greatest value: wisdom. To this end, the specific aims are to acquaint the student with the basic tools and methods of research and expression—both written and oral; and to develop in him/her the skills of analysis and synthesis for the evaluation of historical evidence with particular stress on sound writing and reading skills.

The Department of History offers courses covering the remote and recent periods of history and stressing American, and European, and non-Western history. Thirty-three hours of credits, twenty-one in the upper level courses, are required of majors. The History Seminar integrates the student's previous concentration in either American or European History, and is required for all majors. A minor in history may be obtained by completing fifteen credits, including LHST 111, HIST 221, 222, and six additional upper division history credits.

### **Career Opportunities**

Because of its breadth, its concern with people and their institutions, and its essential connection with language, the study of history prepares a person for a considerable number of occupations and professions to which these qualities are essential. Thus, a concentration in history is an excellent, generally well recognized and often ideal way to prepare one for many vocations besides teaching. Moreover, those who wish to prepare for graduate or professional school will find that an undergraduate concentration in history, coupled with a sequence of courses dictated by special interests, is one of the most flexible preparatory programs for future study in many fields. Law schools in particular look upon a major in history as one of the best means to prepare for training in that profession.

Specific career opportunities exist in the areas of teaching (at all levels), public historian and archivist, library work, educational and public administration, museum work, social service occupations and urban planning. History is also an excellent preparation for most positions in the federal, state, and local governments. Specifically, government intelligence work and the foreign service demand preparation in history. Other areas include politics, public relations, advertising, banking, journalism, editing, fund-raising, and related fields.

### **Alternative History Concentrations and Majors**

#### **The Gannon University – Duquesne School of Law, 3+3 Early Admissions Program**

This program has been designed for qualified students to earn an undergraduate and a law degree in six years rather than seven. Under the early admissions program students may receive a *Bachelors Degree in History after three years of undergraduate work and the successful completion of the first year of full time study at the Duquesne School of Law*. The student would then receive their Law Degree after successful completion of the second year at Duquesne School of Law. Qualified students may wish to pursue this option.

Students, who qualify for the Pre-Law 3+3 Early Admission Program in collaboration with the Duquesne School of Law, may choose to major in history and complete the B.A. requirements in three years. Refer to the Admissions section for a description of and qualifications for the Pre-Law 3+3 Early Admissions Program. This course of study offers 33 hours of upper division historical studies, an excellent preparation for law school.



### **Archaeology and Public History Track**

This track is for students who would like to include a concentration or focused area of study as part of their history major. This track enhances career-path and professional opportunities for history majors, including the areas of museum studies, archival and library work and other public history vocations; it also prepares students for graduate work in those fields. A number of cross-listings between history and archaeology make this concentration quite attractive, with such resources as The Archaeology Museum Gallery at Gannon, the Collins Institute for Archaeological Research, and the Khirbat Iskandar Excavations, Jordan.

The history program offers opportunities for internships and field work within the public and private museums, archives, libraries, and government agencies which incorporate an appropriate program of "hands-on" experiences. Ample opportunities are also available in study-abroad programs, on a summer or semester basis, whereby the student can study and experience history through a variety of opportunities and forums.

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### **COURSE DESCRIPTIONS:**

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#### **Liberal Studies/LHST 111: History Without Borders**

This course chronicles the West's interaction with the world from the fifteenth century to the present. Particular attention will be paid to the West's interaction with the non-Western world. In the course of understanding the process of globalization, students will encounter Asian, Latin American, African, and Western perspectives. 3 credits

#### **HIST 100: First-Year Seminar: Outliers: Hidden Stories of Human Greatness**

This course is a First Year Seminar in the Liberal Studies core curriculum, which will provide an introduction to the field of History. This seminar will introduce students to a more sophisticated understanding of history and humanity. Why do some people transcend their situation and achieve greatness while others plod along and remain mired in their surroundings? Using Malcolm Gladwell's work *Outliers: The Story of Success* as a common reading and a model, this Seminar will develop students' understanding of and appreciation for historical processes, causation, and the ultimate mystery of human greatness. Through integrating the readings, discussion, and experiential learning, Seminar students will research, write, and present their own "Hidden Story of Human Greatness," at the conclusion of the semester.

In addition to information literacy, service learning, writing, and analytical skills, in the seminar students will develop an understanding of the complex relationship between culture and human greatness. The History & Archaeology Department and its faculty believe that it is essential for students to understand how their studies can be applied to ameliorating the world's ills. The course will also investigate career options so that the student can plan their academic courses accordingly. 2 credits

#### **HIST 110: Foundations of Western Heritage**

The most important ideas, issues, problems, and developments that mark the changing fortunes of the West from the Ancient World to the end of the Wars of the Reformation (ca.1648). 3 credits

#### **HIST 210: Ancient History**

An analysis of intellectual, social, economic, and political developments of the Ancient World. Prerequisite: LHST 111 3 credits

#### **HIST 220: Medieval History**

An examination of the intellectual, social, economic and political ethos of the Middle Ages with emphasis on the period 1000-1350. Prerequisite: LHST 111 3 credits

#### **HIST 226: The Contemporary Middle East**

This is an inter-disciplinary course focusing on the history, culture, and languages of the Contemporary Middle East. As such, course instruction will include rudimentary Hebrew and

Arabic language training, the diplomatic and political history of the Middle East, and an examination of Jewish, Arabic, Persian and Kurdish culture. *3 credits*

**HIST 241: English History to Elizabeth I**

Celtic and Roman Britain, Christianity and the Norman Conquest, the role of medieval institutions, the Wars of the Roses, consolidation of a dynastic state. Nationalism and the Reformation provide the focus in the Tudor period.

Prerequisite: LHST 111 *3 credits*

**HIST 242: British History 1600 to Present**

The history of the British state and the British people from the Restoration of the Stuart Monarchy to the present.

Prerequisite: LHST 111 *3 credits*

**HIST 245: Tudor and Stuart England**

A study of sixteenth and seventeenth century England beginning from the reign of Henry VII to the Glorious Revolution.

Prerequisite: LHST 111 *3 credits*

**HIST 287: The History of Science and Technology**

The development of science and technology from antiquity to the beginning of the 21st century. The methodology, uses and aims of science. The scientific revolution and its greatest figures from Copernicus to Newton.

Prerequisite: LHST 111 *3 credits*

**HIST 290: Comics & Culture**

The purpose of this course is to examine a particular form of popular media known generally as 'comics' (this pertain to both comic books and comic strips but will not included animation although some animation will be shown) in their intellectual, social, political and cultural context. The course is designed to provide students with a foundation of knowledge as well as to encourage them to develop a capacity for historical analysis. *3 credits*

**HIST 301: East Asia, From Confucius to Revolution**

This course involves a study of East Asian Civilization from its ancient origins through the contemporary period. The course emphasizes the dominant ideas, institutions, and individuals shaping East Asian history. *3 credits*

**HIST 302: Becoming Human–Becoming the World: World History I**

This course intends to study culture continuity and change by concentrating on the most important turning points and developments in Asia, Europe, Africa, and the Americas, covering the time span from Human Origins to the edge of the Renaissance. The orientation is global, the themes integrative, the overall goal being to show interconnections in the development of civilization(s), along with divergence across cultural and societal boundaries. The course stresses the archaeological and textual evidence. Some of the over-arching themes that express both culture and cultural diversity in antiquity include: becoming human, first states, nomadic movements, empires, and universal religions. *3 credits*

**HIST 303: Global Connections: World History II**

This course examines world history from the early modern period to the present. Its goal is to develop understanding of global processes by examining changes within and across world regions, by comparing and contrasting political, social, and economic systems and values, and by examining the connections between various regions, including circulations of people, goods, and ideologies. *3 credits*

**HIST 304: Introduction to Museum Studies**

This course intends to survey the field of museum studies and introduce the student to the world of museums/historical societies and to various facets of exhibit research, design, and implementation. There will be a "hands-on" component as well as a theoretical underpinning

to museum best practices. The course will cover methods adopted by curators and educators in the care and preservation of artifacts, and issues currently debated in the field. Topics include: collection, acquisition, cataloguing, and inventorying. There will be a class project in museum exhibit design, utilizing archaeological resources in the Archaeology Museum Gallery at Gannon. *3 credits*

### **HIST 307: History Through Arabic Literature**

Literature is a key cultural element throughout Arabic history, from pre-Islamic poetry slams to brilliant court poets to jailed dissidents “then and now.” This course aims to give a general survey of literary works written in Arabic from the 6th century until the present and their links to historical developments vital to understanding Arabic and Middle Eastern/North African history. It adopts a chronological format appropriate to such a historical survey, examining from the outset the important role of the Qur’an in the literary heritage and the poetic milieu into which it emerged. We will explore the earliest prose tradition, popular literature such as the Arabian Nights, and the renaissance (nahda) in the 19th century as well as the emergence of a modern tradition of Arabic literature, with special attention to the novel. The course is literary-historical, using a sequencing that avoids tying literary trends strictly to external events, while yet investigating the myriad political, religious and social influences upon literature.

### **HIST 310: The Renaissance and Reformation**

The development of humanism and the great intellectual, artistic and cultural achievements of the Renaissance in Italy and subsequently in northern Europe. The religious, social, political and economic factors underlying the division of Christianity, the great Protestant reformers, their life and work.

Prerequisite: LHST 111

*3 credits*

### **HIST 311: The Global Sixties**

This course will examine the 1960s as a global phenomenon. Through thematic sections centered on events in the Soviet Union, China, France, West Germany, Algeria, Japan, Palestine, America, and Mexico, students will learn world history through the prism of a tumultuous era. Our primary goal is in fact to evaluate the topic of the course: “the 60s.” Is there something, or some set of characteristics, that coherently links these events together (other than the fact that they occur in the same decade)? Are there shared problems, or approaches, that link the various political and cultural phenomena?

*3 credits*

### **HIST 312: The Baroque and Enlightenment Era: Europe 1648-1780**

The major features of European cultural and political history from the Peace of Westphalia to the beginning of the French Revolution.

Prerequisite: LHST 111

*3 credits*

### **HIST 313: Enlightenment and Revolution**

This course will explore relationship between the social and intellectual history of the Enlightenment with the political revolutions of the late eighteenth century.

Prerequisite: LHST 111

*3 credits*

### **HIST 315: Modern Egypt**

This course explores the history of modern Egypt, from the 1919 Revolution against British occupation to the 1952 Revolution against the monarchy through the 2011 and 2013 Revolutions, with special attention to people—with widely varying experiences—as architects of that country. We will encounter Egyptian history through autobiography, film, political and digital history, literature, and even graffiti.

### **HIST 420: History of the Contemporary World**

A review of Western history from the Congress of Vienna to the present.

Prerequisite: LHST 111

*3 credits*

## American

### **HIST 221: History of the United States to 1865**

The foundation of the English settlements, the American Revolution, the Early National Period, Jacksonian Democracy, Abolitionism, Expansion to the Pacific, the Civil War. Immigration and the role of minorities are emphasized.

*3 credits*

### **HIST 222: The United States in the World: 1865 to Present**

Reconstruction, the development of the Industrial Revolution, Immigration and the role of Minorities, the Progressive movement, World War I, the Great Depression, the New Deal, World War II, the Korean War, the Civil Rights Movement and the post Cold War era.

Prerequisite: LHST 111

*3 credits*

### **HIST 225: Diplomatic History of the United States**

**(Cross-listed with POLI 343)**

The growth of American foreign policy from its colonial origins to the breakthrough in the world arena and twentieth century world leadership and problems.

Prerequisites: HIST 221, 222

*3 credits*

### **HIST 231: American Colonial and Early Republic Era to 1828**

An analysis of the main political, social, economic, and cultural developments from the Colonial Era through the Early Republic and Early National eras.

Prerequisite: HIST 221

*3 credits*

### **HIST 232: Nineteenth Century America: 1828-1896**

The United States during the period of nation making through the Gilded Age. Emphasis is placed on Sectionalism, Civil War and Reconstruction, and the Gilded Age.

Prerequisites: HIST 221, 222

*3 credits*

### **HIST 236: The History of Women in the United States**

This course will examine the history of women in the United States from the pre-colonial period to the twentieth century. It will cover the experiences of Native American, European, African American, Latin American and Asian American women, women in the paid work force, race and class relations, war-time experiences, and changes in norms of gender and sexuality.

*3 credits*

### **HIST 237: American Social-Intellectual History**

**(Cross-listed with POLI 351)**

Social and intellectual developments from the Colonial Era to contemporary times. Special focus on religious history, education, reform movements, literary trends, and progress in science and technology.

Prerequisites: HIST 221, 222

*3 credits*

### **HIST 239: The Black Experience in America**

This course provides an analysis of Black American History from the sixteenth century to the present, with special emphasis on the African background, the slave trade and slavery during the Antebellum Period, Black Americans' fight for freedom against segregation and discrimination, and Black American contributions to the political, social, economic, educational and cultural growth of the American nation.

Prerequisite: HIST 221

*3 credits*

### **HIST 282: American Military History**

The development of the American military experience as it changed from the limited warfare of the 18th century to the total war of the 20th Century, and the global terrorism of the 21st Century.

Prerequisite: LHST 111

*3 credits*

### **HIST 299: Leadership Seminar**

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in the

various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for students' leadership development as reflected both in this course and in the co-requisite Theology or Philosophy Series III course. This section will focus particularly on leadership development for Humanities majors through building their career and post-graduate life & leadership skills. *3 credits*

### **HIST 325: Contemporary American History**

Analysis of the major political, social, economic, and cultural trends in American history from World War II to the present. Special emphasis will be focused on national politics, international relations, and social economic trends from the Harry S. Truman to the George W. Bush administrations. Prerequisite: LHST 111, HIST 221, HIST 222 *3 credits*

### **HIST 379: Internship with the Pennsylvania Historical and Museum Commission**

To be served at one of the more than 50 museums and historic sites operated by the Commission. The focus of each internship will be determined on the basis of the interests of the student and the resources of the Museum. Internships are for a minimum of ten weeks or longer. They coincide with the fall, spring or summer semesters. Six to 12 credits depending on the length and type of internship will be awarded. Housing may be available at some of the sites, but ordinarily students will be expected to make their own arrangements. Prerequisites: Open only to Junior, Senior or Graduate students. (Anthropology/SOCI 292; HIST 221, 222, LHST 111 are required) *6-12 credits*

### **HIST 390-392: Special Topics**

Selected topics in History.

Prerequisite: LHST 111

*1-6 credits*

### **HIST 395-399: Independent Study**

Prerequisite: LHST 111

*1-6 credits*

### **HIST 400: Senior History Seminar**

Selected research topics in history. Emphasis is placed on historiography, methodology and the utilization of primary sources and archival materials. *3 credits*

### **GEOG 201: World Geography**

A presentation of the basic facts and ideas about world regions, focusing on individual countries and areas, including physical and cultural material. *3 credits*

### **GEOG 211: Geography of U.S. and Canada**

A presentation of the basic facts and ideas about regions in the United States and Canada, including physical and cultural material. *3 credits*

### **GEOG 221-241: Regional Geography/Special Topics**

Specialized geography courses focusing on various nations and regions of the world. *3 credits*

## **History Curriculum**

(Numerals in front of courses indicate credits)

FRESHMAN	
<i>Fall</i>	<i>Spring</i>
2 First-Year Seminar	3 Crit Analysis & Comp/LENG 112
3 College Composition/LENG 111	3 Theology II Series/LTHE
3 History Without Borders/LHST 111	3 Modern Language
3 Introduction to Philosophy/LPHI 131	3 History of United States to 1865/ HIST 221
3 Sacred Scriptures/LTHE 121	3 Science (ARCH 202)
3 Modern Language	
17	15

SOPHOMORE	
<i>Fall</i>	
3	Public Speaking/SPCH 111
3	Math
3	History Elective
3	US Government and Politics/POLI 111
3	Modern Language
<hr/>	
15	
JUNIOR	
<i>Fall</i>	
3	Archaeology and History of Ancient Near East/ARCH 201
3	Theology or Phil III Series/LTHE or LPHI
6	History Electives
1	Leadership Seminar
3	Principles of Microeconomics/BCOR 111
<hr/>	
16	
SENIOR	
<i>Fall</i>	
6	Electives
3	Senior Seminar/HIST 400
3	History Electives
<hr/>	
12	
<i>Spring</i>	
3	Philosophy II Series/LPHI
3	Foundations of Western Heritage/HIST 110
3	History of United States 1865 to Present/HIST 222
3	History Elective
3	Fine Art Series/LFIN
3	Introduction to International Relations/POLI 133
<hr/>	
18	
<i>Spring</i>	
3	Philosophy of History/PHIL 345
3	History Electives
3	Principles of Macroeconomics/BCOR 112
6	Electives
3	Cultural Anthropology/SOCI 292
<hr/>	
18	
<i>Spring</i>	
3	Senior Seminar/LBST 383
3	Literature Series/LENG
11	Elective
<hr/>	
17	

**Total credits: 128**

*\*History majors must take at least 9 credit hours of foreign language. If, however, majors begin at the introductory level the total credit requirements are 12.*

**Archaeology and Public History Track: Required and Recommended Courses (see catalog descriptions under Archaeology and Culture Minor).**

**Required courses:**

ARCH 201/HIST 110: Archaeology and History of Ancient Near East/  
Foundations Western Heritage  
ARCH 304: Introduction to Museum Studies  
ARCH 202: Archaeology Methods and Lab (required for History majors)  
ARCH 302: World Archaeology I/World History I (required for History majors)

**Electives:**

The following Archaeology Electives are strongly recommended for those wishing to concentrate in the Archaeology and Public History Track  
ARCH 396: Study Abroad  
ARCH 395: Archaeological Laboratory Internship  
ARCH 390: Introduction to Archival Studies  
ARCH/HIST 390: Internship to Museum Studies/Archival Studies  
ARCH/HIST 390: Special Topics

## HISTORY MINOR

Completion of the following courses (18 credits) will satisfy the requirements for the minor in History.

- 3 Foundations of Western Heritage/HIST 110
  - 3 History Without Borders/LHST 111
  - 6 History of the U.S./HIST 221, 222
  - 6 Two upper level courses in European and American history
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- 18 credits

## ARCHAEOLOGY AND CULTURE MINOR

For a description see The Archaeology and Culture section in this catalog.

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## HISTORY/SOCIAL STUDIES CERTIFICATION

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JEFFREY H. BLOODWORTH, Ph.D., *Chairperson*

Students majoring in History/Social Studies qualify for Teacher Certification in Social Studies/Secondary Education; and Plan B: a B.A. in Social Science without education courses. Students selecting Plan B need not take courses in Education. Students study broadly in the fields of history, political science, geography, economics, sociology, anthropology, and psychology.

### Aims and Objectives:

The objectives of the program are: (1) to give the students an opportunity to become broadly educated in the fields of history, political science, geography, and economics; and (2) to provide a program of teacher education which promotes growth, development, professionalism and expertise for successful teaching.

Students who wish to prepare themselves as secondary social studies teachers must make formal application for admission to the teacher education program through the School of Education. For a detailed explanation of all requirements refer to the catalog portion under Education.

### Social Studies/Secondary Education Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN	
<i>Fall</i>	<i>Spring</i>
{2 First-Year Seminar/EDCR 104*	3 Psychology of Learning/Teaching/EDCR 101
3 Public Speaking/SPCH 111	3 Critical Analysis/Composition/LENG 112
1 Foundations/EDCR 103	3 History Without Borders/LHST 111
3 College Composition/LENG 111	3 Basic Sociology/SOCI 110
3 World History I/HIST 302	3 Foreign Language
3 Sacred Scriptures/LTHE 121	3 Special Education Overview/SPED 101
3 Foreign Language	
<hr/> 18	<hr/> 18
SOPHOMORE	
<i>Fall</i>	<i>Spring</i>
3 History of US to 1865/HIST 221	{1 Leadership Seminar
3 Instructional Design & Sec Ed Classroom/EDCR 206	{3 Phil of Ethical Respons/LPHI 237 or Theo of Moral Resp/LTHE 227

0	Secondary/Educ Field Exp I+/ EDFL 101	3	History of US 1865 to Present/ HIST 222
3	Literature Series/LENG	3	Inq Anal in PA Hist/Govt/MLED 304
3	Intro to Philosophy/LPHI 131	3	Applied Statistics/MATH 213 <b>or</b> Psychological Statistics I/PSYC 211
3	Quantitative Literacy/MATH 103	3	Intro to International Relations/ POLI 133
3	US Govt and Politics/POLI 111		
18		16	
	JUNIOR		
	<i>Fall</i>		<i>Spring</i>
3	Microeconomics/BCOR 111	3	Macroeconomics/BCOR 112
1	Methods/Materials of Instr Sem/ EDCR 321	6	Upper Level History
0	Secondary/K-12 Education Practicum/EDFL 102	3	Philosophy II Series/LPHI
3	World Geography/GEOG 201	3	Cultural Anthropology/SOCI 292
3	Theology II Series/LTHE	3	Meet Need Stu. Exceptionalities 7-12/SPED 340
3	Science	0	Secondary Educ Field Exp III+/ EDFL 103
3	Upper Level History		
16		18	
	SENIOR		
	<i>Fall</i>		<i>Spring</i>
3	Literacy Development, Strategies & Assmt/MLED 301	3	Professional Seminar/EDCR 401
3	Assessment and Evaluation/EDCR 330*	12	Student Teaching/EDFL 410
3	Methods/Materials for ELL/EDCR 420*		
3	Introduction to Visual Arts/LFIN 253		
3	Senior History Seminar/HIST 400**		
3	Intro to Psychology/PSYC 111		
18		15	

Total credits: 137

\* Field Experience embedded throughout semester

\*\* All History Courses must be completed before registering for HIST 400.

{ Cohort Courses

All education and history/social studies courses require a grade of C or better.

All field experiences require a grade of P (pass).

LENG 111, LENG 112, Literature Series, MATH 103 and MATH 213 or PSYC 211 require a grade of C or higher.

A GPA of 3.0 or greater is required for all students seeking teacher certification.

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## INTERDISCIPLINARY STUDIES

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GEOFFREY GRUNDY, Ph.D., *Program Director*

### Individualized Studies Program

This interdisciplinary program allows students to design their own curriculum based on personal preference and career goals. It leads to a B.A. degree. With Program Director approval, students can select courses from two (Option A) or three (Option B) separate disciplines from the programs listed below.



This program provides the flexibility to explore historical, social and cultural perspectives while also considering the problems and issues of contemporary society. Career preparation comes from choosing appropriate courses that foster administrative skills (researching, critical thinking, organizing, planning, creating, decision-making, oral and written proficiency). The program's capstone course can be from any of the selected disciplines or it can be designed by the student in consultation with the Program Director and the appropriate Dean.

Students always work in close consultation with the Program Director.

Career opportunities can include communication, media advertising, professional writing, government service, law school, banking, insurance, science, language and a host of other specializations depending on the chosen discipline.

Students will meet with the Program Director, draft a tentative course of study and submit it to the appropriate Dean for approval. From the electives available, students are strongly encouraged to earn a minor to complement their major discipline. The Program Director will coordinate each student's program with faculty chosen from the fields of concentration.

1. The course work in the area of concentration is to be distributed in accordance with one of the following options:

**Option A:**

Thirty-nine *upper level credits* in two of the following fields; distributed as follows: 24 in a major area and 15 in a secondary area.

Business	English	History	Psychology
Communication	Fine Arts	Legal Studies	Social Work
Criminal Justice	Foreign Languages	Philosophy	Sociology
Theatre and Com/Art	& Culture	Political Science	Theology
Education			

**Option B:**

Option B requires 42 upper level credits. Thirty of them will be from two of the fields listed above (18 credits in one: 12 from another). The final 12 credits can be completed in any program or department in the University. Students are encouraged to use this option to earn a minor related to their career.

2. *Liberal Studies Core*: All courses taken in fulfillment of either option are in addition to the requirements of the core as specified for the Bachelor of Arts degree.
3. Speech (3 credits), Math (3 credits) and Foreign Language (6 credits) are required.

**Outcomes**

1. Majors will demonstrate knowledge of the primary historical, philosophical, literary and theological themes of the humanities.
2. Majors will demonstrate knowledge of the primary theories, methods and practices of the social sciences.
3. Majors will read, write and speak with clarity, originality and persuasiveness across a variety of contexts.
4. Majors will apply aesthetic, quantitative and scientific reasoning in their academic work.
5. Majors will analyze and evaluate principles of ethics and social justice.

Interdisciplinary Studies Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN		
<i>Fall</i>		<i>Spring</i>
2	First-Year Seminar	3 Crit Analysis & Comp/LENG 112
3	College Composition/LENG 111	3 Intro to Philosophy/LPHI 131
3	History Without Borders/LHST 111	3 Foreign Language
3	Public Speaking/SPCH 111	3 Elective in Concentration
3	Sacred Scriptures/LTHE 121	3 Elective
3	Foreign Language	
17		15
SOPHOMORE		
<i>Fall</i>		<i>Spring</i>
3	Theology II Series/LTHE	3 Philosophy II Series/LPHI
3	Literature Series/LENG	3 Social Science
3	Elective in Concentration	6 Elective in Concentration
3	Elective	3 Elective in Secondary Concentration/ Minor
3	Elective in Secondary Concentration/ Minor	3 Elective
15		18
JUNIOR		
<i>Fall</i>		<i>Spring</i>
3	Fine Art Series/LFIN	3 Theology or Phil III Series/LTHE or LPHI
3	Natural Science	1 Leadership Seminar
3	Elective	3 Math
3	Elective in Secondary Concentration/ Minor	3 Elective in Concentration
6	Elective in Concentration	3 Elective in Secondary Concentration/ Minor
		3 Elective
18		16
SENIOR		
<i>Fall</i>		<i>Spring</i>
3	Elective in Concentration	3 Senior Seminar/LBST 383
3	Elective in Secondary Concentration/ Minor	3 Elective in Concentration
8	Elective	9 Elective
14		15

Total credits: 128

INTERDISCIPLINARY STUDIES ASSOCIATE

GEOFFREY GRUNDY, Ph.D., *Program Director*

The Associates Degree in Interdisciplinary Studies is designed to provide the student with a general education consisting of courses in English language and literature, philosophy, theology, fine arts, and the social and the natural sciences. This curriculum includes courses that help the student to acquire the habits and skills needed for the pursuit of knowledge, to learn the methods of research, to understand ideas, to think critically, to interpret and evaluate judgments, and to communicate them to others.

Interdisciplinary Studies Curriculum

FRESHMAN		SOPHOMORE	
2	First-Year Seminar	3	Literature Series/LENG
3	English Composition/LENG 111	3	Fine Art Series/LFIN
3	Crit Analysis & Comp/LENG 112	3	Theology II Series/LTHE
3	Introduction to Philosophy/LPHI 131	3	Philosophy II Series/LPHI
3	Sacred Scripture/LTHE 121	3	Theology or Phil III Series/LTHE or LPHI
3	LS Science	3	Social Science Series
6	Electives	3	MATH 125 or any other math
3	Psychology/PSYC 111	9	Electives
3	Sociology/SOCI 110		
3	History Without Borders/LHST 111		
3	Public Speaking/SPCH 111		
35		30	

INTERNATIONAL STUDIES

Anjali Sahay, Ph.D., *Director*

International Studies is an interdisciplinary major which draws its courses from the Foreign Language, History, Political Science, and International Business programs in order to form a coherent whole with an international focus. Students will acquire a broad multidisciplinary education while enhancing their overall sense of global awareness. While providing a well-balanced curriculum, the major also provides opportunities for students to concentrate on a particular country or region of the world.

This major will complement the existing International Business major and the Foreign Language International Business major. Its emphasis will be on social, cultural and international relations which can be applied not only to business and governments but other institutions as well.

CAREER OPPORTUNITIES: Employment at home and abroad with government, private agencies, multi-national corporations, in tourism and travel, in communications, in bilingual and bicultural agencies. This major is also an excellent preparation for graduate studies in languages, law, international relations, global studies, foreign service and many more areas of studies.

International Studies-Foreign Language Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Critical Analysis and Composition/LENG 112
2	First-Year Seminar	3	Introduction to Philosophy/LPHI 131
3	History Without Borders/LHST111	3	Foreign Language
3	Sacred Scriptures/LTHE 121	3	Math
3	Public Speaking/SPCH 111	3	Found. Of Western Heritage/HIST 110
3	Foreign Language		
17		15	

SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Theology II Series	3	Philosophy II Series
3	Fine Arts Series	3	English Literature Series
3	Natural Science	3	Macroeconomics/BCOR 112
3	Microeconomics/BCOR 111	3	Foreign Language
3	Foreign Language	1	Leadership Seminar
3	International Relations/POLI 133	3	Cognate Elective
18		16	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Comparative Govt/POLI 220	3	World Geography/GEOG 201
3	Theology/Philosophy III Series	3	POLI 322 - 390
3	POLI 322 – 390	3	Foreign Language
3	HIST 251 – 390	3	Elective
3	Cognate Elective	3	HIST 251 - 390
		3	Cognate Elective
15		18	
SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Cognate Elective	6	International Experience
3	Elective	3	Concentration Elective
3	Concentration Elective	3	Concentration Elective
3	Concentration Elective	3	Elective
3	Integrating Seminar/LBST 383		
15		15	

**International Studies Minor**

Completion of 18 credits is required to satisfy International Studies Minor requirements.

- 1. **One Required Courses (3 credits)**
  - POLI 133 Introduction to International Relations
- 2. **Three Courses from any of the following list of courses (9 credits)**
  - POLI 220 Comparative Government
  - POLI 322-325 Regional Studies
  - POLI 326 Asian Politics & Culture
  - POLI 340 Theories of International Relations
  - POLI 341 International Law & World Order
  - POLI 342 UN Practicum
  - POLI 343 U.S. Foreign Policy
  - POLI 345 Globalization & World Politics
  - POLI 390-95 Special Topics
  
  - HIST 251 Tsarist Russia
  - HIST 252 Century Russia
  - HIST 253 History of Modern Germany I
  - HIST 254 History of Modern Germany II
  - HIST 261 History of Sub-Saharan Africa
  - HIST 271 History of Latin America
  - HIST 285 History of Canada
  - HIST 390-92 Special Topics
  
  - ECON 241 International Economics

MKTG 255 Principles of Exporting  
BCOR 306 Global Business  
MGMT 310 International Management (Prerequisite: BCOR 306)  
MKTG 345 International Marketing (Prerequisites: BCOR 241 and BCOR 306)  
IBUS 382 China Studies (unless course is used to satisfy International  
experience requirement)  
International Experience (3 to 6 credits)

**3. Foreign Language 200 level or above (6 credits)**

**TOTAL: 18 CREDITS**

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## JOURNALISM COMMUNICATION

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*(School of Communication and the Arts)*

FRANK GARLAND, *Program Director*

FACULTY: *Professor: Michael DeSanctis. Associate Professor: Shawn Jeffery Clerkin. Assistant Professors: Jennifer Allen-Catellier, Frank Garland, Mary Carol Gensheimer. Instructors: David Blaetz, Anne O'Neill. Visiting Professor: Alaina Manchester.*

### **Program Description**

The Journalism Communication program, housed in the university's School of Communication and the Arts, enables students to master journalistic skills in new and digital media as well as traditional media. Students acquire the reporting, writing, speaking and design skills needed to work successfully in each medium and also tackle theoretical and ethical issues confronting today's media.

Students complete practicum classes and pursue internship opportunities where classroom learning is put into practice. *The Gannon Knight*, which boasts a weekly print product and a redesigned website, and WERG-FM and WERGFM.com – Gannon's own 3,000-watt broadcast and web streaming station – provide students with valuable hands-on experience. The university also boasts a full TV production, digital editing and multimedia studio used for student instruction.

In addition, the Journalism Communication program provides students with internship opportunities with the Erie Times-News, local television affiliates, advertising agencies, radio stations, nonprofit entities and public relations and marketing firms.

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## COURSE DESCRIPTIONS:

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*See the sections on Communication Arts, Electronic Media and Theatre for descriptions of courses designated COMM and THEA.*

### **JCOM 214: Writing for Print/New Media**

This workshop course introduces new students to the basics of journalistic reporting and writing. Students receive practice in how to identify, gather, and write news and make ethical judgments about news. The course should help students who want to work for newspapers and magazines as well as for broadcast and online media. This course is a prerequisite for JCOM 216 and JCOM 252.

Prerequisites: LENG 111, 112

*3 credits*

### **JCOM 215: Editing/Production of Print Media**

The course introduces students to the production of printed material, whether for newspaper,

magazines, advertising, in-house publications, brochures, books, or anything else on paper.  
Prerequisites: LENG 111, LENG 112 3 credits

**JCOM 216: Advanced and Specialized Reporting**

This workshop course focuses on specialized news beats including police, courts, government, education and the environment and introduces students to computer-assisted reporting and research techniques.  
Prerequisites: JCOM 214/ENGL 214 3 credits

**JCOM 218: Feature Writing**

This workshop course introduces students to various genres of feature writing for newspapers, magazines and online publications, including profiles, entertainment pieces and trend stories.  
Prerequisites: LENG 111, LENG 112 3 credits

**JCOM 252: Photojournalism**

This course introduces students to the principles of photojournalism. Students study and practice photojournalism techniques, with consideration of the ethical issues involved with creating and using visual images.  
Prerequisite: JCOM 214

**JCOM 390-394: Special Topics**

Selected topics in Journalism Communication. 1-3 credits

**Journalism Communication Curriculum**

*(Numerals in front of courses indicate credits)*

FRESHMAN			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	College Composition/LENG 111	3	Critical Anal. and Comp/LENG 112
3	Foreign Language	3	Foreign Language
3	Intro to Elect Media/COMM 111	3	Sacred Scripture/LTHE 121
3	Presentational Strategies/SPCH 115	3	Intro to TV Production/COMM 211
3	History Without Borders/LHST 111	3	Introduction to Philosophy/LPHI 131
2	First-Year Seminar/COMM 161	1	Practicum/COMM 162
17		16	
SOPHOMORE			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Writing for Print/Media/JCOM 214	3	Theology II Series/LTHE
3	Philosophy II Series/LPHI	3	Editing/Prod of Print Media/JCOM 215
3	Literature Series/LENG	3	Intro to Psychology/PSYC 111
3	US Govt and Politics/POLI 111	3	Mass Media and Pop Culture/ENGL 371
3	Digital Audio Production/COMM 241	3	Practicum/COMM 262
2	Elective	1	Elective
17		16	
JUNIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Radio/TV Performance/COMM 230	3	Adv/Specialized Reporting/JCOM 216
3	Theology or Phil III Series/LTHE or LPHI	3	Fine Art Series/LFIN
3	Digital Graphics/COMM 356	3	Broadcast News Writ/Prod/COMM 411
3	Feature Writing/JCOM 218	3	Elective
3	Elective		

1	Leadership Seminar/COMM 240	3	Photojournalism/JCOM 252
		1	Practicum/COMM 362
16		16	
	SENIOR		
	<i>Fall Semester</i>		<i>Spring Semester</i>
3	Math	3	Media Mgmt/Print Journ/ COMM 341
3	Ethics and Criticism/COMM 350	3	Sr Seminar & Thesis/COMM 400
3	Intro to Env Science/ENV 120 or Environmental Issues/BIOL 103	3	Public Policy/POLI 122 or Intercultural Comm./SPCH 313
3	Elective	3	Elective
3	Elective	3	Voice and Diction/THEA 221
15		15	

**JOURNALISM MINOR**

A minor in Journalism will consist of 18 credits.

**Required:**

- JCOM 214 Writing for Print/News Media
- JCOM 215 Editing/Production of Print Media
- JCOM 216 Advanced/Specialized Reporting
- JCOM 218 Feature Writing
- ENGL 371 Mass Media and Popular Culture
- 3 credits of electives with advisor's approval.

**LEADERSHIP STUDIES**

DAVID B. BARKER, Ph.D., *Program Director*

**Overview**

Leadership Studies is a social science discipline governed by the International Leadership Association (ILA). Leadership has been identified as one of the most pressing challenges facing organizations, communities and social institutions in the 21st century. Gannon’s leadership studies program addresses this challenge by fostering holistic leadership development in a multidisciplinary context. The program is designed in accordance with guidelines established by the ILA, and prepares graduates for contributing to society by assuming leadership roles in their organizations, professions and communities.

**Program Objectives**

As a leadership studies minor, students gain insight into the dynamics of leader-follower relationships and acquire an understanding of the qualities and behaviors that affect meaningful outcomes in a variety of organizational settings. Students are introduced to a wide range of leadership theories, and gain practical knowledge about how to apply this knowledge in numerous professional, organizational and community contexts. The program provides foundational knowledge about how social scientist study leadership dynamics and how leadership professionals assess and develop leadership capacity in individuals, groups and organizations.

**Student Outcomes**

The following student outcomes are fostered by programs in Leadership Studies:

- Introduce students to a holistic theoretical framework for understanding, exhibiting and developing leadership in a variety of contexts and organizational settings.
- Foster the intellectual and empirical skills required to promote an interdisciplinary exploration of leadership behavior among individuals in organizations, communities and society.
- Equip graduates with the knowledge and skills required to provide leadership in professional, community and societal roles.
- Enhance the climate for ethnic and international diversity by promoting an understanding of cross-cultural and global perspectives on leadership.

## LEADERSHIP STUDIES MINOR

The **Leadership Studies Minor** consists of 18 hours of LEAD courses:

- Five courses taken from the *Leadership Studies Core* provide an integrative conceptual foundation of theory and practice to enhance student's understanding of leadership in their major area of study.
- Students select two Leadership Studies elective (**Special Topics**, 6 credits) relating to their major.

### Leadership Studies Minor Course Sequence:

LEAD 110 Holistic Leadership (3 credits)

LEAD 220 Foundations of Leadership Theory and Practice (3 credits)

LEAD 330 Leadership Contexts & Applications (3 credits)

LEAD 390-399 Special Topics\* (6 credits)

LEAD 440 Leadership Synthesis: Interdisciplinary Perspectives (3 credits)

## Leadership Minor Tracks

The Leadership studies minor is designed to address the needs of students majoring in a wide variety of social science disciplines at Gannon University, including:

- o Business Administration
- o Criminal Justice
- o Gerontology
- o Political Science
- o Psychology
- o Social Work

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## COURSE DESCRIPTIONS

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### **LEAD 110: Holistic Leadership**

The holistic leadership framework introduced in this course provides a comprehensive orientation to the field of leadership studies. Students will develop an appreciation for the complex, multifaceted nature of leadership in organizations and society, and will gain an understanding of the contributions to be made from various academic disciplines to understanding its emergence, development and consequences. Leaders will be considered in terms of their behavioral, cognitive, emotional and spiritual dimensions, illustrating the importance of considering insights from psychological, social, philosophical, cultural and organizational domains of study.

*3 credits*

### **LEAD 220: Foundations of Leadership Theory and Practice**

This course provides a systematic survey examining the conceptual roots of leadership and its emergence as a scholarly academic discipline. Core readings will introduce seminal theories and the historical figures that have influenced development of the field. Students will learn to view leadership behavior from alternative conceptual and theoretical perspectives, and will



gain appreciation for the complexity and diversity of leadership contexts and applications present in modern society.

Prerequisite: LEAD 110

3 credits

### **LEAD 330: Leadership Contexts and Applications**

This course explores the application of leadership principles in a variety of organizational and societal contexts. Students will consider the implications of effective leadership for corporate, governmental, educational, community and service organizations. Consideration will be given to the variations inherent in the types of leadership required in private, non-profit, political and international settings. Societal consequences of failed and destructive leadership will also be considered, as well as the challenges of 21st century trends in population, economy, health care, and environmental stewardship.

Prerequisites: LEAD 110, 220

3 credits

### **LEAD 390-399: Special Topics**

Special Topics courses extend and complement the LEAD core curriculum by focusing on targeted areas of leadership theory, context or application. Topics selected are offered on a rotating basis depending upon disciplinary relevance, student interest and faculty availability.

3 credits

### **LEAD 440: Leadership Synthesis: Interdisciplinary Perspectives**

This capstone seminar explores the intersecting disciplines that inform leadership theory, research and practice. As an interdisciplinary area of scholarship, the field of leadership draws upon theoretical insights and conceptual knowledge from a verity of basic and applied disciplines. This course integrates the theoretical and conceptual knowledge contributed by scholars in psychology, sociology, anthropology and communication studies, and explores how the principles of leadership practice are informed by organizational, societal and cultural dynamics.

Prerequisites: LEAD 110, 220, 330

3 credits

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## **LEGAL STUDIES/PARALEGAL**

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BERNADETTE AGRESTI, *Program Director*

FACULTY: Ms. Bernadette Agresti, *Paralegal*, Peter Agresti, JD, *Hon.* Stephanie Domitrovich, *Atty.* Brian Krowicki, *Atty.* Joseph Martone, *Atty.* William Morton, *Atty.* Grant Yochim, *Atty.* Michael Graml, *Atty.* Thomas Minarcik.

The Gannon University Legal Studies Program is approved by the American Bar Association (ABA). The ABA definition of a legal assistant is: "A legal assistant is a person, qualified by education, training or work experience who is employed or retained by a lawyer, law office, corporation, government agency or other entity and who performs specifically delegated substantive legal work for which a lawyer is responsible."

"The Legal Studies Program mission, at Gannon University, is to provide consistency with the University mission that includes preparing students to enter the legal field with the knowledge, skills and competency to be valued and respected members of the legal profession."

The most important goal of the legal studies program is to prepare students to enter careers in the legal field, in law firms, courts, public and private settings with the skills important to employers, that includes a strong exposure in what is considered ethical behavior, and with the understanding that without a law degree and bar admission, they will only work under the supervision of an attorney. Other goals include the ability to work on a team and expand their knowledge through continuing legal education.

The objectives of the program are:

- Understand the structure of the State and Federal court system

- Understand the differences between civil and criminal practice
- Analyze (by briefing) reported legal opinions.
- Research legal problems using primary and secondary resources.
- Write clear, effective legal memoranda, using proper citation form, and to write with good grammar and spelling skills.
- Conduct effective interviews with clients and witnesses.
- Understand the procedure in a civil suit and draft appropriate pleadings.
- Be familiar with basic concepts of business organizations and contract law.
- Recognize the ethical standards of the paralegal profession.

A paralegal must follow the guidelines regarding the unauthorized practice of law of the state in which he/she is performing legal services.

Legal Assistants/Paralegals provide professional services in a variety of legal, business settings, and corporations, usually, but not exclusively under the supervision of a lawyer. These services can include: interviewing, investigation, legal research, preparation of legal documents, review of transcripts, and participation in adversary and regulatory proceedings. One of the fastest growing professions nationally, legal assistants/paralegals are employed by individual attorneys, law firms, courts and government legal offices. They are also in growing demand by corporations, government agencies, financial institutions, insurance companies and real estate firms. Program graduates are advised not to confine their search for employment to the Erie market. Employment should be sought throughout the United States and beyond.

Gannon University's ABA approved program offers three options: a four-year baccalaureate degree, a two-year associate degree, and a certificate option. Students pursuing other majors may double major or complete a certificate while completing their chosen four-year degree program, with the permission of the program director and the Dean of the College where the program lies.

**Transfer students** may not use legal specialty coursework as a substitute for required legal specialty courses, unless the courses are transferring from an ABA approval paralegal program. If the coursework is from a non-approved program, they may be used as cognates or electives at the discretion of the Dean of CHESS.

### **The Bachelor Degree Program**

The Baccalaureate Degree Program is designed to prepare students for advanced positions in the legal assistant/paralegal profession that increasingly require a four year degree in legal studies or another major with a legal studies/paralegal certificate. Among the 128 credits required for the degree are 39 credits in Liberal Studies, 34 credits of Legal Studies courses, 33 credits in supplementary requirements, and 22 credits in unspecified cognates and electives. Students are encouraged to take a strong minor or even a double major in a related field.

### **The Associate Degree Program**

The two year, Associate Degree Program is for the student who is not ready to commit to a four year program. It is attractive to non-traditional students or students who are working while pursuing a degree. Requirements are 20 credits in Liberal Studies, 28 credits in Professional Studies including an internship, 7 credits of supplementary work, and 12 credits of unspecified cognate classes. All work taken may be applied toward a four year degree.

### **Legal Studies Certificate**

The Legal Studies Certificate may be earned as a post-Associate degree or the equivalent thereof, or a post-Bachelor degree. It may also be taken in conjunction with any four year degree program, if the Program Director of the student's major accepts the required 18-25 credits as cognates and/or electives. The Program Director may waive up to 7 credits to earn

the certificate, based on a student's background in the legal field. All certificate candidates are required to have met general education requirements of the ABA.

### **Legal Studies Certificate**

*(Numerals in front of courses indicate credits)*

- 1 Orientation/Paralegalism/LEGL 105
- 3 Intro to Law /LEGL 111
- 3 Legal Research & Writing I/LEGL 211
- 3 Legal Research & Writing II/LEGL 212
- 3 Computers in Law/LEGL 343
- 3 Trial Preparation & Procedure/LEGL 345
- 3 Legal Services Internship/LEGL 495
- 6 Legal Services Electives

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## **COURSE DESCRIPTIONS:**

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### **LEGL 100: First-Year Seminar: Fairness in Law**

This course is not considered a legal specialty course. The First-Year Seminar is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life, and to encourage development of academic, personal and spiritual aspects of the student's life.

This Section of First-Year Seminar, LEGL100, Fairness in Law, offers a new student an introduction to Gannon University through a unique and challenging learning experience. This section of the First-Year Seminar focuses on the legal system in America and abroad and the differences of opinion in how legal matters are handled by the courts. The course will attempt to integrate spiritual aspects of student's lives and the tenets of Catholic social teaching.

*2 credits*

### **LEGL 105: Orientation/Paralegalism**

An introduction to the role of lawyers and legal assistants/paralegals in the legal process. This course is not considered a legal specialty course.

*1 credit*

### **LEGL 111: Introduction to Law**

Introduction to the principles of substantive law essential to the prospective paraprofessional. Included are the areas of tort, contract, criminal and property law. Introduction to the structure of the judicial system and the mechanics of the legal process.

*3 credits*

### **LEGL 211: Legal Research and Writing I**

An orientation to the law library and to legal research. Introduction to the sources of law and to techniques for finding statutory, regulatory and judge made laws as well as legal commentaries. Exercises in legal research and writing.

*3 credits*

### **LEGL 212: Legal Research and Writing II**

Advanced work in legal research and legal writing. Introduction to legal analysis, focusing on practical assignments which examine in detail the components of court opinions. The course emphasizes case analysis, and the preparation of both informal and formal legal memorandums.

Prerequisites: LEGL 111, LEGL 211

*3 credits*

### **LEGL 227: Contract Law**

A course to provide an understanding of contracts as developed under common law and legislative directives. Students will evaluate the formation, enforceability, and defenses to contracts.

*3 credits*

**LEGL 311: Family Law**

A course covering the substantive and procedural law concerning divorce, adoption, child custody disputes and visitation rights, duties of support.

Prerequisites: LEGL 111, LEGL 211

*3 credits*

**LEGL 313: Wills and Estate Administration**

A course covering the preparation of wills and trusts, the administration of estates and trusts, and tax consequences.

Prerequisites: LEGL 111, LEGL 211

*3 credits*

**LEGL 331: Business Organizations**

A course providing an overview of the formation and operation of business enterprises including sole proprietorships, partnerships and corporations.

Prerequisites: LEGL 111, LEGL 211

*3 credits*

**LEGL 333: Real Estate Law**

This course covers the acquisition, ownership, regulation and disposition of real property.

Financing of real estate is also covered.

*3 credits*

**LEGL 334: Public Records Research and Title Abstracts**

Theory and practice of completing courthouse civil and criminal records research and real estate title abstracts.

Prerequisites: LEGL 111, LEGL 211

*3 credits*

**LEGL 335: Bankruptcy**

A course emphasizing the substantive law of bankruptcy including the rights of debtors, creditors and other interested parties and the legal assistant's role in bankruptcy proceedings.

Prerequisites: LEGL 111, LEGL 211

*3 credits*

**LEGL 343: Computers in the Law**

A course designed to introduce legal assistants and other legal professionals to the use of computers in the legal field, preparing them to use computer skills in the legal environment.

*3 credits*

**LEGL 345: Trial Preparation and Procedure**

An overview of the litigation process including pleadings, third-party practice, discovery, the presentation of evidence at trial and the rules of evidence, and post-trial practice.

Prerequisites: LEGL 111, LEGL 211

*3 credits*

**LEGL 390-394: Special Topics in Legal Studies**

Prerequisites: LEGL 111, LEGL 211

*1-3 credits*

**LEGL 390: Immigration Law**

A course that is designed to introduce the American immigration process and the paralegal and attorneys role in representation of clients.

*1-3 credits*

**LEGL 495: Legal Studies Internship**

Placement in a law office, legal department, public legal institution, financial, institution, or insurance company. Students may take 2 internships.

Prerequisites: LEGL 111, LEGL 211, LEGL 212, Director Permission

*1-6 credits*

*Note:* Interns should have substantially completed their studies. A grade point average of 2.25 in all paralegal courses or permission of the Program Director is required for enrollment.

**Legal Studies/Paralegal****Four Year Curriculum**

FIRST YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Critical Analysis & Comp/LENG 112
1	Legal Studies/LEGL 105	3	Sacred Scriptures/LTHE 121
3	Legal Studies/LEGL 111	3	PC Applications/CIS 170-172 or Business Tech 1/CIS 150
3	Modern Language	3	Modern Language
3	Legal Studies/LEGL 211	3	Legal Studies/LEGL 212
2	First-Year Seminar/LEGL 100		
3	History Without Borders/LHST 111		
<hr/> 18		<hr/> 15	
SECOND YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Literature Series/LENG	3	Fine Art Series/LFIN
3	Theology II Series/LTHE	3	Introduction to Philosophy/LPHI 131
3	Poli Sci/POLI 111	3	Legal Studies/LEGL 343
3	Public Speaking/SPCH 111	3	Poli Sci/POLI 122
3	Math/MATH 110, 111, 114 or 125	3	Psychology/PSYC 111
		3	Legal Studies/LEGL 345
<hr/> 15		<hr/> 18	
THIRD YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Philosophy II Series/LPHI	3	LS Science
3	Legal Studies/Elective	3	Legal Studies Elective
3	Legal Environ of Bus/BCOR 203	3	Cognate
6	Cognate	1	Leadership Seminar
		3	Theology or Phil III Series/LTHE or LPHI
		3	Bus & Prof Comm/ENGL 212
<hr/> 15		<hr/> 16	
FOURTH YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
6	Legal Studies Elective	3	Senior Seminar/LBST 383
6	Cognates	3	Legal Studies/LEGL 495
4	Elective	3	Legal Studies Elective
		3	Cognate
		3	Sociology/SOCI 110
<hr/> 16		<hr/> 15	

Two and four year students should take LEGL 111 & 211 in the same semester.

\*PC Applications exam may be taken. If passed, CIS 170-172 or CIS 150 may be waived.

\*\*Cognates may include additional legal studies courses and such other courses as approved by a program advisor.

Legal Studies/Paralegal

Two Year Curriculum

FIRST YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Crit Analysis & Comp/LENG 112
3	Sacred Scriptures/LTHE 121	3	History Without Borders/LHST 111
2	First-Year Seminar/LEGL 100	3	Legal Studies/LEGL 212
3	Legal Studies/LEGL 111	3	Legal Studies/Elective
3	Legal Studies/LEGL 211	3	PC Applications/CIS 170-172, Business Tech/CIS 150, or testing
3	Political Science/POLI 111	1	Legal Studies/LEGL 105
		1	Speech
17		17	
SECOND YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Introduction to Philosophy/LPHI 131	3	Theology or Phil III Series/LTHE or LPHI
6	Legal Studies/Electives	3	Legal Studies/LEGL 495
9	Cognates	3	Legal Studies/LEGL 343
		3	Legal Studies/LEGL 345
		3	Cognates
18		15	

\*Cognates may include additional legal studies courses and such others as approved by a program advisor.

\*\*PC Applications exam may be taken. If passed. CIS 170-172 or CIS 150 may be waived.

MILITARY SCIENCE

LIEUTENANT COLONEL DANIEL REMPFER, *Chairperson*

FACULTY: *Professor of Military Science:* Lieutenant Colonel Daniel Rempfer. *Instructors:* Captain Anthony Aya, Sergeant First Class Jonathon Baxley, Master Sergeant Jason Dekaye, Captain Nelson Muniz, Captain Michael McGraw.

General Information:

The Military Science Program is open to both male and female students. Freshman and sophomores incur NO OBLIGATION to the U.S. Army by enrolling in the Reserve Officers' Training Corps (ROTC) program Basic Course. Additionally, military science courses are free of charge to all full-time students (minimum of 12 credits, excluding military science courses) and earn academic credits which may apply towards graduation requirements. Those who desire to earn a commission as a Second Lieutenant in the United States Army, Army Reserve or Army National Guard must sign a contract to enter the junior and senior year of the program known as the Advanced Course. All students who graduate with their undergraduate degree and also earn their commission will also earn the Leadership Studies Minor on top of their respective academic major.

Aims and Objectives:

The primary purpose of the Department of Military Science is to develop the future officer leadership of the United States Army and to motivate young people to become better citizens. Students enrolled in the ROTC Program receive instruction in the fundamentals of leadership

with emphasis on loyalty, duty, respect, selfless service, honor, integrity, and personal courage.

Army ROTC is one of the best leadership courses in the country. During classes, leadership labs, physical training and field training exercises, students learn firsthand what it takes to lead others, motivate groups and conduct missions as an Officer in the United States Army.

The program objectives focus on the overall development of a student to lead Soldiers and organizations in the 21st century.

1. Students develop into leaders of tomorrow as Commissioned Officers in the United States Army, Army Reserve or Army National Guard.
2. Students are introduced to the fundamentals of leadership with emphasis on loyalty, duty, respect, selfless service, honor, integrity, personal courage, and ethics.
3. Students assess the personal challenges and competencies that are critical for effective leadership within teams, groups, and organizations through direction, problem solving, listening, and effective communications.
4. Students are challenged to explore the dimensions of creative and innovative tactical leadership strategies and styles within team dynamics through leadership attributes and competencies in relation to military operations.
5. Students practice, study, and evaluate adaptive leadership skills as they are presented with challenging scenarios related to squad and platoon tactical operations receiving feedback on their leadership attributes and actions.
6. Students transition from an academic student focus to a military student focus by holding leadership positions with the Cadet Battalion training, organizing, mentoring, and evaluating underclass students within the Military Science Program.

### **Program of Instruction:**

The Department of Military Science offers both a four-year and two-year program of instruction. Students begin the Military Science program during their freshman year, but may enter as late as their junior year.

- a. **Four-Year Program.** This program consists of the Basic Course (freshman and sophomore years) and the Advanced Course (junior and senior years). During the Basic Course, students must complete four courses (two credit hours each) and four labs (one credit hour each).

The courses provide a general knowledge of the U.S. Army (to include career opportunities), develop selected leadership traits, such as poise and self-confidence, and teach basic military skills. Entry into the Advanced Course requires completion of the Basic Course and attendance at the Cadet Leadership Course (CLC) at Fort Knox, KY after their freshman or sophomore academic year. During the Advance Course, students qualify for a U.S. Army commission, by completing four courses (two credit hours each) and four labs (one credit hour each), and attending the Cadet Leadership Course (CLC) at Fort Knox, Kentucky between their junior and senior academic years. During the school year, students in the Advanced Course receive a non-taxable subsistence allowance of \$450 per month for juniors and \$500 for seniors.

- b. **Two-Year Program.** This program allows direct entry into the Advanced Course via these methods:
  - (1) Junior ROTC graduate.
  - (2) Attend the Cadet Initial Entry Training Course (CIET) (a four week program completed during the summer at Fort Knox, Kentucky).
  - (3) Complete Basic Training through one of the Armed Forces.

- c. **Professional Military Education.** Whether the student chooses the four-year or two-year program, all ROTC students must pass a military history course prior to commissioning as a second lieutenant.

**Financial Assistance**

ROTC merit based scholarships are available that pay full tuition and fees (\$1,200 annual book fees) plus \$300-\$500 per month non-taxable subsistence allowance for ten months each school year. All four-year scholarship recipients also receive a room and board incentive. Scholarships are available on a competitive basis to include grade point average, physical fitness, medical condition, and legal records. Advancing freshman and sophomores may compete for three and two-year scholarships respectively, regardless of current ROTC participation. There are also multiple scholarship and financial assistance opportunities through the United States Army Reserves and the Army National Guard specifically for ROTC.

**Military Science Student Activities**

Military Science cadre and staff encourage students to participate in college and civic activities. Military Science students are afforded the opportunity to visit selected government facilities (military bases, federal law enforcement facilities, and medical facilities). The Ranger Challenge Competition, considered a varsity sport, is one of the most challenging activities offered through the Military Science Department. The 10 person team competes in various activities to include a physical fitness test, a 10 kilometer ruck march, the one-rope-bridge, a hand-grenade assault course, and an orienteering competition. The color guard is a student run organization that presents the national and state colors in uniform at freshman commencement, graduations, sporting events, and other special functions.

**A suggested Military Science Curriculum**

FRESHMAN	
Fall Semester	Spring Semester
MLTS 101	MLTS 102
MLTS 103	MLTS 104
SOPHOMORE	
Fall Semester	Spring Semester
MLTS 201	MLTS 202
MLTS 203	MLTS 204
JUNIOR	
Fall Semester	Spring Semester
MLTS 301	MLTS 302
MLTS 303	MLTS 304
SENIOR	
Fall Semester	Spring Semester
MLTS 401	MLTS 402
MLTS 403	MLTS 404

\*\* Leadership Lab should be taken each semester. 1 credit each semester. All graduating ROTC students who earn their commission will earn the Leadership Studies Minor along with their academic degree major.

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**COURSE DESCRIPTIONS:**

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**MLTS 101: Introduction to the Army**

This course introduces students to the personal challenges and competencies that are critical for effective leadership. Students learn how the personal development of life skills such as critical



thinking, goal setting, time management, physical fitness, and stress management relate to leadership, officership, and the Army profession. The focus is on developing basic knowledge and comprehension of Army leadership dimensions while gaining a big picture understanding of the ROTC program, its purpose in the Army, and its advantages for the student.

Corequisite: MLTS 103

*2 credits, Fall*

### **MLTS 102: Foundations of Agile and Adaptive Leadership**

This course overviews leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Students explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises. Cadre role models and the building of stronger relationships among the students through common experience and practical interaction are critical aspects of the MLTS 102 experience.

Corequisite: MLTS 104

*2 credits, Spring*

### **MLTS 103 & MLTS 104: Leadership Labs**

Courses supplement instruction in MLTS 101 and MLTS 102. Students participate as a member of a team analyzing leadership styles and practices in a variety of situations.

Corequisite for MLTS 103: MLTS 101

Corequisite for MLTS 104: MLTS 102

*1 credit, Fall, Spring*

### **MLTS 201: Leadership and Decision Making**

This course explores the dimensions of creative and innovative tactical leadership strategies and styles by examining the team dynamics and two historical leadership theories that form the basis of the Army leadership framework (trait and behavior theories). Students practice aspects of personal motivation and team building in the context of planning, executing, and assessing team exercises and participating in leadership labs. Focus is on continued development of the knowledge of leadership attributes and core leader competencies through an understanding of Army rank, structure, duties and basic aspects of land navigation and squad tactics. Case studies provide tangible context for learning the Soldier's Creed and Warrior Ethos as they apply in the contemporary operation environment (COE).

Prerequisites: MLTS 101, 102, 103, 104

Corequisite: MLTS 203

*2 credits, Fall*

### **MLTS 202: Army Doctrine and Team Development**

This course examines the challenges of leading tactical teams in the complex contemporary operating environment (COE). The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of the military operations. MLTS 202 provides a smooth transition in MLTS 301. Students develop greater self awareness as they assess their own leadership styles and practice communication and team building skills. COE case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios.

Prerequisite: MLTS 201

Corequisite: MLTS 204

*2 credits, Spring*

### **MLTS 203 & MLTS 204: Leadership Labs**

Courses supplement instruction in MLTS 201 and MLTS 202. Students will apply the leadership and management skills learned during classroom instruction in order to develop individual competence and confidence in their own leadership abilities.

Corequisite for MLTS 203: MLTS 201

Corequisite for MLTS 204: MLTS 202

*1 credit, Fall, Spring*

### **MLTS 205: Cadet Initial Entry Training Course (CIET-C)**

This is a four-week summer leadership course at Fort Knox, Kentucky sponsored by the U.S. Army Cadet Command. The course is for students who have not previously taken the required ROTC courses during their freshman and sophomore years and who wish to contract with the

ROTC program at the start of their junior year. The course focuses on basic soldier skills to include an obstacle course, water survival, M-16 rifle marksmanship, squad tactics, and leadership evaluations. Students attending this course must be academically aligned as a junior at the start of the fall semester after CIET-C. Students are required to visit the ROTC Department prior to signing up for the course. *3-6 credits, Summer*

#### **Advanced Course**

Entrance into the advanced course is required by the completion of the following: 1) Army ROTC Basic Course, 2) Basic Training, 3) MLTS 205.

#### **MLTS 301: Training Management and the War Fighting Function**

This course challenges Cadets to study, practice, and evaluate adaptive leadership skills as they are presented with challenging scenarios related to squad tactical operations. Cadets receive systematic and specific feedback on their leadership attributes and actions. Based on such feedback, as well as their own self-evaluations, Cadets continue to develop their leadership and critical thinking abilities. The focus is developing Cadet's tactical leadership abilities to enable them to succeed at ROTC's summer Cadet Leadership Course (CLC) at Fort Knox, Kentucky.

Prerequisites: MLTS 201, 202 or 205,

Corequisite: MLTS 303

*2 credits, Fall*

#### **MLTS 302: Applied Leadership in Small Unit Operations**

This course uses increasingly intense situations while applying team leadership challenges to build Cadet awareness and skills in leading tactical operations at the small unit level. Cadets review aspects of full spectrum operations. They also conduct military briefings and develop proficiency in the operation orders process. The focus is on exploring, evaluating, and developing skills in decision-making, persuading, and motivating team members in the contemporary operation environment (COE). MSL 302 Cadets are evaluated on what they know and do as leaders as they prepare for ROTC's summer Cadet Leadership Course (CLC) at Fort Knox, Kentucky.

Prerequisite: MLTS 301

Corequisite: MLTS 304

*2 credits, Spring*

#### **MLTS 303 & MLTS 304: Leadership Labs**

The student implements the plans and orders created as part of Advanced Leadership Management I & II. The student will be evaluated on how he or she handles the changing situations, personalities and environments encountered during the labs.

Corequisite for MLTS 303: MLTS 301

Corequisite for MLTS 304: MLTS 302

*1 credit, Fall, Spring*

#### **MLTS 401: The Army Officer**

This course was designed to be student-centric with the ownership of learning on the student, but facilitated by the instructor. Army Officers are expected to be life-long learners who take responsibility and personal initiative for their learning. You must properly conduct your pre-class assignments in order to come to class with a foundation of knowledge on the subject to be taught by your instructor. Doing so will allow us to spend the majority of the class time on specific areas that are least understood from the pre-class assignment rather than having to teach the subject from scratch. Do your homework so you can spend more time sharing personal knowledge and experiences with the class. Class will be conducted in an interactive manner with ample opportunities for small group discussions and practical exercises. Everyone will be responsible for contributing to the success of the learning experience. *2 credits, Fall*

#### **MLTS 402: Company Grade Leadership**

The outcome of this lesson is to have Cadets receive and understand essential information on their last semester of their ROTC career. Understanding the expectations for their last ROTC semester will set the conditions for Cadets to continue to develop their military knowledge and skills; stay focused on their responsibilities as the ROTC battalion leadership and staff;

continue to effectively lead their fellow Cadets and prepare them for future success; and last successfully graduate as a commissioned officer in the United States Army.

Prerequisite: MLTS 401

Corequisite: MLTS 404

*2 credits, Spring*

### **MLTS 403 & MLTS 404: Leadership Labs**

Cadets plan and execute special training activities throughout the academic year. These courses are taken concurrently with MLTS 401 and 402.

Prerequisites: Enrollment in MLTS 401 and 402

*1 credit, Fall, Spring*

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## **MORTUARY SCIENCE**

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PARRIS J. BAKER, Ph.D., MSSA, *Program Director*

Of all human experiences, none is more overwhelming in its implications than death. Presently, the number of openings for funeral directors, embalmers, and other funeral personnel exceeds the number of graduates in the mortuary science field, thereby providing a wealth of employment opportunities. The study of death and how individuals and our larger society prepare for this life event is filled with questions that are rooted at the center of our human experience.

This journey of professional and personal discovery is multidisciplinary. Gannon University's mortuary science curriculum is taught by a variety of professors from biology, business, psychology, sociology, social work, and health sciences. As a BS student in the Gannon University Mortuary Science Program you will receive excellent instruction, completing the first three years of your education at Gannon University and your fourth year at Pittsburgh Institute of Mortuary Science or another licensed institution of your choice.

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### **COURSE DESCRIPTIONS:**

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#### **MORT 211: Introduction to Gerontology**

An overview of the study of gerontology. Examines aging in America, stereotypes, theories on aging, adult development, work and living environments, and selected problems of the elderly. This course has a service-learning component.

*3 credits, Fall*

#### **MORT 221: Human Behavior and the Social Environment I**

This is the introductory course to understanding human behavior from a multidimensional, biopsychosocial approach. Here we focus on the social environment and apply theoretical frameworks in order to put human behavior into perspective. In this course, students begin to study the person from a biological perspective, looking at the major systems of the human body. We also examine the psychological and sociological theories and knowledge by looking at cognition, emotion, the self as well as stress and coping. This course examines the impact of culture, spirituality, the physical environment and social institutions in shaping human behavior. Finally, this course addresses different sized social systems from formal organizations, communities, groups and the family. Students begin to see how social systems promote or defer health and well being.

*3 credits*

#### **MORT 316: Counseling Older Adults**

This course will identify various areas impacting lives of the "young" old, "middle" old, and the "old" old. Misconceptions, stereotypes, and biases toward the aging process will be explored. The course focuses on assessment, counseling interventions, and techniques designed to enrich the world of the mature adult and their families.

*3 credits*

#### **MORT 360: Interviewing Skills**

This course introduces students to the basic interpersonal helping skills using a problem solving model. Students are expected to demonstrate understanding of the relationship of interpersonal skills to social work practice and to demonstrate initial mastery of the helping skills.

*3 credits*

**MORT 390: Professional Lecture Series**

Selected topics presented by professionals in the field.

3 credits

**Mortuary Science Curriculum**

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>Fall</i>		<i>Spring</i>	
3	College Composition/LENG 111	3	Crit Analysis & Comp/LENG 112
4	Anat. & Phys. I & Lab/BIOL 108/109	4	Anat. & Phys. II & Lab/BIOL 110/111
3	MATH	3	History Without Borders/LHST 111
3	Introduction to Philosophy/LPHI 131	3	Public Speaking/SPCH 111
3	Business Tech I/CIS 150	3	Sacred Scripture/LTHE 121
2	First-Year Seminar		
<hr/>		<hr/>	
18		16	
SOPHOMORE			
<i>Fall</i>		<i>Spring</i>	
3	Theology II Series/LTHE	3	Financial Acct/BCOR 201
3	Business/Legal Environ/BCOR 203	3	Bus/Prof Comm/ENGL 212
3	BCOR 241 or BCOR 311 or BCOR 251	3	Language
3	Philosophy II Series/LPHI	3	Managerial Acct/BCOR 202
3	Intro to Gerontology/GERO 211	3	Theology/Philosophy III Series
3	Language		LTHE/LPHI
		1	Leadership Seminar
<hr/>		<hr/>	
18		16	
JUNIOR			
<i>Fall</i>		<i>Spring</i>	
3	Literature Series/LENG	3	Death & Dying & Bereavement,
3	Fine Art Series/LFIN		Capstone/GERO 400
3	Interviewing Skills/SCWK 360	3	Biomedical Aspects of Aging/
3	Mental Health of Elderly/GERO 336		GERO 315
3	Human Behavior in the Social	3	Prof Lecture Series/MORT 390
	Environment I/SCWK 221	3	Human Behavior in the Social
			Environment II/SCWK 222
		3	Introduction to Psychology/PSYC 111
<hr/>		<hr/>	
15		15	

\*Gannon will grant 30 credits for successful completion of technical studies in a licensed mortuary school.

98 credits – Gannon  
30 credits – Mortuary School  
128 credits – Total

**PHILOSOPHY**

AARON K. KERR, PH.D., *Chairperson*

FACULTY: *Associate Professors:* William Haggerty, Michael Latzer. *Assistant Professors:* Aaron Kerr, David Nordquest. *Instructors:* Stephanie Barnhizer, Dominic Prianti.

**Aims and Objectives:**

Philosophy is the love and pursuit of wisdom. An essential part of a person’s education should be the serious and personal exploration of the “ultimate questions”—issues of human

nature and human destiny, of how we should live, of the nature of the world around us, and of the being and nature of God on whom we are dependent for our existence.

Human beings cannot be satisfied with merely knowing the “what” of things happening around them; they want to understand the “why” of the human condition. In studying philosophy students not only experience major philosophers at work on these important human issues, but they also participate in this activity by developing their own skills for creative thinking, rational argument, and responsible judgment.

Philosophy is studied for its own intrinsic value, since, as Socrates said, “the unexamined life is not worth living.” Nevertheless, the study of philosophy can also lead to successful careers as well. It is very suitable preparation for careers in law, journalism, government, politics, teaching, religion, and counseling.

Students who are majoring in philosophy are obliged to take a minimum of ten upper level courses (30 credits). The following nine courses are obligatory: (a) the entire history of philosophy cycle – PHIL 271: Ancient Philosophy; PHIL 273: Medieval Philosophy; PHIL 280: Modern Philosophy; PHIL 286: Contemporary Philosophy; (b) PHIL 210/212: Logic; (c) LPHI 131: Introduction to Philosophy; (d) PHIL 233: Philosophy of God; (e) PHIL 237: Philosophy of Ethical Responsibility; (f) PHIL 400: Honors Seminar. The tenth required course may be chosen with the advice of the department among the other upper level philosophical courses. Those majoring in philosophy are encouraged to take more than the minimum ten courses, especially if they are intending to continue to work in philosophy in graduate school.

Those who are majoring in philosophy, of course, must take the requirements of the Liberal Studies Core Program. Thus if they take LPHI 233, 235, 237, 239, they are fulfilling what above was designated as the required courses: PHIL 233, 235, 237, and 239 respectively.

A major in philosophy at Gannon University is obliged to take eight prescribed cognates (24 credits).

Students may have to take beginning and/or intermediate language courses depending on their background. Students will also be encouraged to take a course in a classical language.

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## **COURSE DESCRIPTIONS:**

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**LPHI 131: Introduction to Philosophy is a prerequisite for all Philosophy Courses.**

**LPHI 131: Introduction to Philosophy**

An introduction to the study of philosophy. Beginning with the dawn of philosophical awareness among the ancient Greek philosophers, the course surveys both traditional and modern approaches to the philosophical understanding of the human condition. *3 credits*

**PHIL 210: Logic**

An introduction to the theory and practice of good reasoning. Students learn practical techniques for constructing and evaluating arguments, based on both traditional Aristotelian logic and modern formal logic. *3 credits*

**PHIL 212: Contemporary Symbolic Logic**

An introductory course in deductive reasoning using the methods of symbolic formal logic. *3 credits*

**PHIL/SPCH 225: Philosophy of Communication**

An analysis of the epistemological foundations underlying all forms of communicative processes from individual gestures to the electronic world-wide media. *3 credits*

**PHIL 233: Philosophy of God (also listed as LPHI 233)**

An introduction to the philosophical study of God, based largely on the tradition of Christian philosophy. *3 credits*

**PHIL 235: Philosophy of Knowledge, Certitude and Truth (also listed as LPHI 235)**

A study of the possibility and validity of human knowledge, together with the criteria of truth.

*3 credits*

**PHIL 237: Philosophy of Ethical Responsibility (also listed as LPHI 237)**

The subject matter of ethics is "the good life and how to live it." Students will examine a variety of influential approaches to ethics, and will gain skill in applying ethical theory both to practical ethical issues in daily life, and to some of the urgent ethical issues in contemporary society.

*3 credits*

**PHIL 238: Business Ethics**

Business dealings are subject to the same norms and criteria which govern other human activities. This course analyzes the ethical dimensions of business transactions and consumerism, addressing itself to such problems as profits, advertising, free enterprise, discrimination, trade secrets, unions, and bribery.

Prerequisites: LPHI 131 and PHIL 237

*3 credits*

**PHIL 239: Philosophy of Science (also listed as LPHI 239)**

A philosophical survey of the various understandings of science and scientific method. Students will examine the role philosophy has played in formulating and critiquing models of scientific investigation, and will pay attention to the impact science has had on religion, society, and views of human nature.

*3 credits*

**PHIL 240: Philosophy of Education**

A critical examination of the goals and methods of education, especially as they relate to ethics and politics. Readings will be drawn from historical philosophers, such as Plato, Aristotle, Rousseau and Dewey as well as contemporary philosophical analysis of educational institutions.

*3 credits*

**PHIL 248: Women in Western Philosophy**

This course is an introduction to, and a critical examination of, women philosophers who are contemporaries of key male Western philosophers. Traditional philosophical issues will be examined in light of both the traditional viewpoints, and of the significant contributions made by these women.

*3 credits*

**PHIL 250: Comparative World Philosophy**

An introduction to the classics of world philosophy. Students will have a survey of some of the greatest contributions of both Western and Non-Western approaches to the major questions concerning issues like the good life, the self, theories of knowledge, reality versus appearance, and philosophical theology. Students will also compare and contrast the answers of these major questions, using a unified standard of critical thought and a unified goal of seeking insight into answers to these major philosophical issues. This course fulfills the Philosophy II Series requirement.

Prerequisite: LPHI 131

*3 credits*

**History of Philosophy Cycle**

Attention should be paid to the fact that the history of philosophy is expounded systematically in a four semester cycle with one of the histories of philosophy being offered in each semester.

**PHIL 271: History of Ancient Philosophy**

A critical presentation of the rise of Western Philosophy in Greece in the seventh century before Christ and its development in the fourth century B.C. up to the third century of the Christian era.

*3 credits*

**PHIL 273: History of Medieval Philosophy**

A study of Augustine and the great synthesis of Thomas Aquinas, analyzed in the context of the philosophic-theological intellectual atmosphere of the thirteenth century. Non-Thomistic syntheses of Bacon, Bonaventure, and Duns Scotus are evaluated. Then the decline of scholasticism is studied with emphasis on Ockham, Suarez and the Electives.

*3 credits*

**PHIL 280: History of Modern Philosophy**

A critical presentation of philosophers and philosophical trends from the Italian Renaissance of the XV century to the early XIX century.

3 credits

**PHIL 286: History of Contemporary Philosophy**

A survey of some of the most important philosophical movements and thinkers of the late-nineteenth and twentieth centuries, both in the Anglo-American and the Continental traditions.

3 credits

**PHIL 290: Philosophy & Law**

A discussion of the philosophical foundations of law and an investigation into the scope of legal philosophy. Questions such as: what is law? what is a legal system in a society? do the criteria for the existence of law include a moral element? how shall legal obligations be understood? will be discussed. In addition, the relationship between law and morality, and the common good must be reviewed.

3 credits

**PHIL 345: Philosophy of History**

Critical examination of the philosophers of history and their concern with the nature of history and the meaning of historical knowledge.

3 credits

**PHIL 350: Introduction to Metaphysics**

The nature of metaphysics as the study of being is examined in the philosophy of Aristotle and Thomas Aquinas. The study of essence and existence, potency and act, substance and accident, matter and form, is developed systematically.

3 credits

**PHIL 365: Modern Existentialism**

"Existentialism" refers to those modern philosophies concerned with the meaning of human existence, the experience of anxiety and absurdity, and the problem of personal responsibility. Typical philosophies and literary works studied in the course include those of Kierkegaard, Nietzsche, Camus, Sartre, Marcel and Heidegger.

3 credits

**PHIL 383: American Philosophy**

An investigation of the contributions made by American thinkers to traditional philosophical problems and the interrelationship of American ideas and American life.

3 credits

**PHIL 390-394: Special Topics in Philosophy**

1-3 credits

**PHIL 395-399: Independent Study in Philosophy**

1-3 credits

**PHIL 400: Honors Seminar in Philosophy**

Every other spring semester, a member of the philosophy department conducts a special seminar on an individual philosopher or philosophic trend or theme in depth, using primary sources and allowing time for deeper discussion and analysis that enhances an intellectual insight. The specific topics are announced prior to registration for the coming semester.

3 credits, Spring

**PHILOSOPHY MINOR**

Completion of the following courses (15 credits) will satisfy the requirement for a minor in Philosophy.

- 3 Introduction to Philosophy/LPHI 131
- 3 Philosophy of God, Knowledge, Ethics or Science/PHIL 233, 235, 237, or 239
- 9 May be taken in any Philosophy courses 200 level or above

15 credits

**Philosophy Curriculum (128 credits)***1st Semester - Freshman*

- 3 College Composition/LENG 111

*2nd Semester - Freshman*

- 3 Critical Analysis & Comp/LENG 112

3	Introduction to Philosophy/LPHI 131	3	History Without Borders/LHST 111
3	Sacred Scriptures/LTHE 121	3	Natural Science
3	Public Speaking/SPCH 111	6	Elective
3	Introduction to Psychology/PSYC 111		
2	First-Year Seminar		
17		15	
	<i>1st Semester - Sophomore</i>		<i>2nd Semester - Sophomore</i>
3	Philosophy of God/LPHI 233	3	Philosophy of Knowledge/LPHI 235
3	Theology II Series/LTHE	3	Philosophy of Science/LPHI 239
3	Psyc of Human Development/PSYC 222	3	Literature Series/LENG
3	Advanced Composition/ENGL 211	3	Cultural Anthropology/SOCI 292
6	Elective		or Political Theory I/POLI 360
		3	Math
18		15	
	<i>1st Semester - Junior</i>		<i>2nd Semester - Junior</i>
3	Philosophy of Ethical Responsibility/LPHI 237	3	Medieval Philosophy/PHIL 273
3	Logic/PHIL 210	3	Modern Philosophy/PHIL 280
3	Ancient Philosophy/PHIL 271	3	Language/FREN 216 or GRMN 216
3	Language/FREN 211 or GRMN 211	6	Elective
3	Fine Art Series/LFIN		
1	Leadership Seminar		
16		15	
	<i>1st Semester - Senior</i>		<i>2nd Semester - Senior</i>
3	Senior Seminar/LBST 383	3	Philosophy Honors Seminar/PHIL 400
11	Elective	12	Elective
3	History of Contemporary Phil/PHIL 286		
17		15	

10 Upper Level Philosophy Courses 30 hrs.

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## POLITICAL SCIENCE

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MARK A. JUBULIS, Ph.D., *Program Director*

FACULTY: *Professors:* Mark A. Jubulis, Anjali Sahay. *Lecturer:* Gretchen Fairley, Philip Hayes.

**Objectives:**

The Department of Political Science offers an undergraduate program leading to the Bachelor of Arts degree. The program is designed to provide a broad and solid foundation in Political Science, Political Analysis, International Affairs, and Policy Studies to help students develop knowledge and skills in preparation for a professional career in the public, private, or not for profit sectors.

The emphasis is upon the development of specific skills necessary for Leadership, management, planning, and evaluation of government programs; upon providing a comprehensive understanding of policy-making and policy-implementation within a local, national, or global context; and upon the preparation for individuals interested in further professional education at graduate or law school.



### Career Opportunities

Individuals with a Bachelor's Degree in Political Science may qualify for administrative and management trainee positions in such fields as legislative and policy research, public relations, personnel work, budget analysis, security investigation, etc. Employment opportunities also include such professional careers as college and university teaching, law, city management, urban planning, public administration, policy research and analysis, foreign service and many other careers with local, national and international organizations both public and private.

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### COURSE DESCRIPTIONS:

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#### **POLI 101: Orientation**

A required orientation program for freshman Political Science and Pre-Law concentrators.

*NC/Fall*

#### **POLI 111: U.S. Government and Politics**

Constitutional foundations of U.S. Government; structure and functions of Congress, the Presidency, the judiciary; administrative institutions and processes, interest groups and political parties; political behavior, and the electoral process.

*3 credits, Fall/Spring*

#### **POLI 122: Public Policy Analysis**

Principles and practices of policy analysis; emphasis on current national policy issues.

*3 credits, Fall/Spring*

#### **POLI 133: Introduction to International Relations**

Introduction to the nature of international relations, focusing on the role of the state and international institutions; the role of ideology and culture in international affairs; and the nature of the world economy and the process of globalization.

*3 credits*

#### **POLI 210: Bureaucracy and Public Administration**

Principles and practices of public administration in modern society with a special attention to the administration of the American Federal government.

*3 credits*

#### **POLI 220: Comparative Government**

Principles of comparative political analysis; principles and features of selected European and other non-Western governmental systems.

*3 credits*

#### **POLI 260: Introduction to Law in Society**

Introduction to legal institutions and processes; evolution of the American legal system; major substantive areas of law; legal reasoning and the adversarial process; and, the role of attorneys and courts in American society.

Cross listed with PLAW 111

*3 credits*

#### **POLI 301: Leadership Studies I: Theory**

Examines leadership theory, the differences between leadership and management, the skills necessary for successful leadership, and various styles of leaders. Students will become familiar with the "great books" of leadership, interact with practicing professionals, learn leadership lessons from the study of the American Presidency, and experience negotiation and creativity exercises.

*3 credits*

#### **POLI 302: Leadership Studies II: Skills**

Builds on the theoretical study of leadership with an emphasis on practice and application. Students study leaders, systems analysis, planning, strategic thinking, and the requirements of community leadership. Students participate in exercises to increase skills in communication, media relations, and effective political leadership.

*3 credits*

#### **POLI 311: State and Local Government**

Institutions and processes of state and local government with special focus upon Pennsylvania.

*3 credits*

**POLI 312: Parties and Political Behavior**

The electoral and governmental functions of American political parties, with consideration given to party systems at national and local levels, and the study of campaigns and elections. 3 credits

**POLI 315: Congress and Legislative Process**

The structure, functions and the role of Congress in both the policy process and the nation's political life. 3 credits

**POLI 317: The American Presidency**

Institution, politics, personality, and policies of the president. 3 credits

**POLI 322-325: Regional Studies**

Political structures and regional features of a select area of the world, such as Russia and Eastern Europe, the European Union, Latin America, Africa, or Asia. 3 credits

**POLI 326: Asian Politics and Culture**

This course examines the political, historical, cultural, socio-economic, and geographic traits that distinguish this region and shapes its domestic political processes, interstate, and international relations. 3 credits

**POLI 331: Urban Politics and Public Policy**

The American urban political process and public policy. Community structure and the distribution and use of power. 3 credits

**POLI 332: Comprehensive Urban Planning**

Consideration of the economic, political and social determinants of comprehensive urban land use planning. 3 credits

**POLI 340: Theories of International Relations**

Analysis of major theoretical approaches to study of international relations and evaluation of competing paradigms which claim to explain the nature of post-Cold War international relations. Prerequisite: POLI 133 3 credits

**POLI 341: International Law and World Order**

This course addresses contemporary issues in international law and world order. Course will enhance students' comprehension of topics such as human rights, genocide, non-proliferation, terrorism, international criminal court and other conflicts. 3 credits

**POLI 342: United Nations Practicum**

This course covers the history, goals, principles, rules, procedures, and other institutions of the United Nations organization. Gannon's Model U.N. for High School students provides opportunities for experiential learning. Participation in Gannon Model UN is required. 3 credits

**POLI 343: U.S. Foreign Policy**

Historical and intellectual foundations of contemporary U.S. foreign policy. 3 credits

**POLI 345: Globalization and World Politics**

Course will explore the global contours of economic, political, technological, security, cultural, migratory, linguistic, and environmental aspects of globalization. 3 credits

**POLI 350: Constitutional Law and the Judicial Process**

Processes of constitutional development and interpretation; the Judicial system; judicial review; the federal system; Presidency: office and powers; powers of Congress. 3 credits, Fall

**POLI 351: Civil Liberties and Civil Rights**

Constitutional basis of civil liberties; freedom of speech and press; freedom of association, religious liberty and the separation of church and state; federal and state procedural due process; substantive due process; equal protection of the laws. 3 credits, Spring

**POLI 357: Legal Analysis and Persuasion**

Legal analysis and persuasion will introduce the student to the fundamentals of legal thinking; including the critical examination of case law and other written materials. Applying this legal analysis, students will learn to persuade a targeted audience in both written and oral forms. Classroom exercises include briefs, mock appellate arguments and/or mock trial. Cross listed with PLAW 357 *3 credits*

**POLI 360: Political Theory**

The Classical and Christian tradition of political theory and philosophy. Reading and discussion of select works of Plato, Aristotle, St. Augustine, St. Thomas Aquinas and Machiavelli. Modern Political Theory and philosophy. Reading and discussion of select works, including writings of Hobbes, Locke, Rousseau, John Stuart Mill, and Marx. *3 credits*

**POLI 390-394: Special Topics**

Such as Political Rhetoric & Leadership, Presidential Campaigns and Elections, Nationalism and Ethnic Conflict, and Totalitarianism. *1-3 credits*

**POLI 395-399: Independent Study**

*1-3 credits*

**POLI 400: Political Analysis Senior Coordinating Seminar**

The Coordinating Seminar is designed to enhance and integrate the student's comprehension of politics; and to develop further, critical and analytical skills in reading, writing and research. *3 credits*

**POLI 490: Fieldwork and Internships I**

Qualified individuals will be placed in internship positions with public officials, political organizations and governmental agencies particularly, not exclusively, in the local community. Students may also design, in consultation with the program director, an appropriate program of field research.

Prerequisite: Permission of Department.

*3 credits, Fall*

**POLI 491: Fieldwork and Internships II**

Prerequisite: Permission of Department.

*3 credits, Spring*

Semester or summer internships in Washington, DC are available to all majors for academic credit through Gannon's affiliation with the Washington Center. See Professor Jubulis or Cheryl Rink in the Center for Experiential Education for further details.

**Political Science Curriculum**

**Liberal Studies Core Requirements:** 39 credit hours

**Program Requirements:** Concentrators should successfully complete 36 credit hours in Political Science and 43 credit hours in cognate and elective subjects, including the following courses:

Freshman Orientation: POLI 101 (NC)

Introduction: POLI 111, 112, 133, 220

Upper Level Core:

POLI 360; 400, one of the following: POLI 321, 322, 340, 341 343 and one of the following: POLI 210, 260, 312, 315, 317, 350, 357.

Experiential Learning Component:

One of the following:

POLI 342, 490, or 491 - 3 credits.

Program Electives: 9 credits of upper level courses or

Internship Fieldwork, Independent Study of Intersession Courses.

Cognate Requirements: 33 credit hours including:  
Social Science Cognates: 6 credit hours from  
Economics/BCOR 111 or BCOR 112 or Sociology/SOCI 110 or Psychology/PSYC 111.  
Statistics: 3 credits  
Language: 6 credit hours in Language  
History: 6 credit hours of HIST 221 and HIST 222  
Unspecified Cognates: 12 credit hours.  
Cognates may be taken in Political Science and/or related fields depending on the individual student's interests and career plans. In all cases students must have the approval of the Department in selecting cognate courses.

**Electives:** 14 hours

**Legal Studies: Law and Politics**

Students pursuing this track will take most of the required courses in the Political Science major, but will substitute 2 legal courses, Introduction to Law & Society and Legal Analysis & Persuasion, for 2 upper level Political Science courses.

Students who intend to go on to law school are encouraged to complete the Legal Studies Certificate. The certificate can be completed within the four year program by using those courses as the allowable cognates and electives offered in the Political Science Program. If the pre law school student does not want to complete the certificate, they are encouraged to take some of the Legal Studies courses so that they can learn skills that could enable them to find summer employment and/or part-time employment in legal settings. Some helpful courses would include Legal Research & Writing I and II, Public Records Research, and Computers in Law.

**Political Science Curriculum**

*(Numerals in front of courses indicate credits)*

FRESHMAN	
<i>Fall</i>	
2	First Year Seminar
3	College Composition/LENG 111
3	History Without Borders/LHST 111
3	Intro to Philosophy/LPHI 131
3	Sacred Scriptures/LTHE 121
3	Intro to US Government/POLI 111
0	Orientation/POLI 101
<hr/>	
17	
SOPHOMORE	
<i>Fall</i>	
3	Public Speaking/SPCH 111
3	Theology II Series/LTHE
3	Philosophy II Series/LPHI
3	Foreign Language
3	Math
3	History of US to 1865/HIST 221
<hr/>	
18	
<i>Spring</i>	
3	Crit Analysis & Comp/LENG 112
3	Public Policy Analysis/POLI 122
3	Introduction to Psychology/ PSYC 111, Microeconomics/ BCOR 111 or Macroeconomics/ BCOR 112
3	Basic Sociology/SOCI 110, Microeconomics/BCOR 111 or Macroeconomics/BCOR 112
3	Intro to International Relations/ POLI 133
<hr/>	
15	
<i>Spring</i>	
3	Foreign Language
3	Literature Series/LENG
3	Comparative Government/POLI 220
3	History of US 1865 to Present/ HIST 222
3	Upper Level Political Science
<hr/>	
15	

JUNIOR	
<i>Fall</i>	<i>Spring</i>
3 Theology or Phil III Series/LTHE or LPHI	3 Fine Art Series/LFIN
3 Science	3 Political Theory/POLI 360
3 Statistics	3 Cognate
3 Upper Level Political Science	3 Upper Level Political Science
3 United Nations Practicum/POLI 342	6 Elective
1 Leadership Seminar	
<hr/> 16	<hr/> 18
SENIOR	
<i>Fall</i>	<i>Spring</i>
3 Political Sci. Senior Seminar/POLI 400	3 Senior Seminar/LBST 383
3 Upper Level Political Science	3 Upper Level Political Science
6 Elective	2 Elective
3 Cognates	6 Cognates
<hr/> 15	<hr/> 14

**Total credits: 128**

**Political Science/Public Administrative/Public Management  
Five Year BA/MPA or MBA Program**

Gannon University's Political Science Department in cooperation with Gannon's Graduate Center offers a special program for qualified undergraduates leading to a Bachelor of Arts Degree in Political Science and the Master of Public Administration Degree. Alternatively, students may elect to pursue a Bachelor of Arts in Political Science and a Master of Business Administration Degree with a public management focus. Both programs may be completed in five years of full time study of 158 credit hours.

**The Gannon University – Duquesne School of Law, 3+3 Early Admissions Program** has been designed for qualified students to earn an undergraduate and a law degree in six years rather than seven. Under the early admissions program students may receive a *Bachelors Degree in Political Science after three years of undergraduate work and the successful completion of the first year of full time study at the Duquesne School of Law*. The student would then receive their Law Degree after successful completion of the second year at Duquesne School of Law. Qualified students may wish to pursue this Political Science Program option.

**POLITICAL SCIENCE MINOR**

A minor in political science may be accomplished by taking the 6 credit foundations sequence - POLI 111 U.S. Government and either POLI 122 Public Policy, or POLI 133 Introduction to International Relations plus 12 credits in upper level courses. This minor is strongly recommended as preparation for teaching social studies and civics at the elementary and secondary levels. Students are encouraged to plan the minor in consultation with an advisor from the political science department. A Political Science minor also complements a major in Foreign Language and International Business.

THE NEXT STEP

Baccalaureate Degree program for Graduates of Two Year Colleges

Political Science/Pre-Law

(Numerals in front of courses indicate credits)

Pre-Senior Year	Senior Year
3 US Government and Politics/POLI 111	3 Choice of (1): Comparative Govt/POLI 220, Far Eastern Govts/POLI 231, Regional Studies/POLI 322, International Relations/POLI 240, Int Law and Organization/POLI 341, US Foreign Policy/POLI 343
3 Public Policy Analysis/POLI 122	3 Political Theory I/POLI 360
9 Political Science Electives	3 Political Science/POLI 311, 312, 315, 317, 331 or 350
6 Modern Foreign Language	3 Senior Coordinating Seminar/POLI 400
3 Sacred Scripture/LTHE 121	6 Political Science Electives
3 Introduction to Philosophy/LPHI 131	3 Senior Seminar/LBST 383
3 Fine Art Series/LFIN	3 Theology or Phil III Series/LTHE or LPHI
3 Literature Series/LENG	1 Leadership Seminar
	9 Choice of (3): Social Psychology/SOCI 211, Intro to Psychology/PSYC 111, Microeconomics/BCOR 111, Macroeconomics/BCOR 112
33	34

Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program. Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

All students graduating from the College of Humanities must have completed six credits of a Modern Foreign Language.

PRE-LAW - THE CHARLES L. DEANER, ESQ, '48,  
PRE-LAW PROGRAM

BERNADETTE AGRESTI, *Program Director*

FACULTY: *Hon.* Stephanie Domitrovich, *Atty.* Brian Krowicki, Peter Agresti, JD.

Aims and Objectives:

The Association of American Law Schools recommends that a Pre-Law Program should be concerned with the development of basic skills and insights fundamental to the later attainment of legal competence. The quality of education called for should include:

- A. comprehension and expression in words;
- B. critical understanding of the human institutions and values with which the law deals; and
- C. creative power in thinking.

According to the Association: "The development of these fundamental capacities is not the monopoly of any one subject-matter area, department or division. Rather, their development is the result of a highly individualized process pursued with high purpose and intensive intellectual effort by persons with at least a reasonable degree of native intelligence. Perhaps the most important variable ingredient of a proper climate for this process is the quality of undergraduate instruction. Certainly, it is not any particular course or combination of courses. Shortly stated, what the law schools seek in the entering students is not accomplishment in mere memorization but accomplishment in understanding, the capacity to think for themselves, and the ability to express their thoughts with clarity and force."

At Gannon University individuals expressing an interest in Pre-Law are initially placed in a sequence of courses in their Freshman and Sophomore years which introduce them to many of the major fields within Gannon. During this period the student, in consultation with the Director of the Pre-Law Program, is encouraged to select a field of concentration and to plan a course of studies which seems best suited to his or her individual interests and attitudes and to the fulfillment of the objectives of the Pre-Law Program.

Students from any major may elect to pursue a Minor in Pre-Law Studies consisting in 18 credit hours of approved courses selected from Pre-Law and Cognate fields. Students may also choose to complete a Legal Studies Certificate.

## **GANNON UNIVERSITY – DUQUESNE SCHOOL OF LAW 3/3 EARLY ADMISSION**

BERNADETTE AGRESTI, *Program Director*

ADVISORY COMMITTEE: *Hon.* Stephanie Domitrovich, Joseph Martone, Esq.

Gannon University in collaboration with Duquesne University School of Law offers a competitive, early admissions program for Pre Law students. This integrated partnership provides special academic opportunities for qualified students to earn both an undergraduate degree and a law degree in six years rather than seven. Under the early admissions program, students may receive a Bachelors Degree from Gannon University after three years of undergraduate work and the successful completion of the first year of full time study at Duquesne University School of Law.

The early admissions program is only open to those applicants who enter the program as freshmen and complete all three years of their undergraduate work at Gannon University. Admission is highly competitive and the program is limited to a maximum of twenty students per year.

Students in the early admissions program will choose an undergraduate major in Arts and Humanities, Business, Criminal Justice, English, General Science, History, Accounting, Legal Studies Paralegal, Political Science, Interdisciplinary Studies and Philosophy, at the time of their acceptance into the program and will be required to take several courses from the Pre Law curriculum. Liberal Studies Core as well as all major and College requirements will be completed at Gannon University except in cases where Duquesne Law School classes may be applied to such requirements.

The Pre Law Adviser and a Pre Law Advisory Committee including a representative of Duquesne University Law School and other members of the legal community, will provide counseling, advisement, opportunities for internships, field trips to Duquesne and generally help prepare those enrolled in the program with assistance in preparing for law school, the law school admissions test and eventual entrance into the legal profession.

Students will take the Law School Admissions Test in their third year and will be interviewed by a selection committee which will include the Dean of Duquesne University Law School or

a designate. Selection criteria will include a minimum cumulative grade point average of 3.5 for the three years at Gannon University and a minimum LSAT score in the 60th percentile on the LSAT. Evidence of leadership potential and interest and commitment to the legal profession and other qualitative factors will be considered in selection decisions.

Duquesne University will admit from five up to ten students who meet the above criteria and who are recommended by the Selection Committee. At Duquesne's option, more than ten students may be admitted.

The early admissions program is specifically designed for Gannon University undergraduate students with outstanding academic credentials who will distinguish themselves at the undergraduate level. By participating in this program, students may not only save the expenses of the additional year of study normally required to complete both undergraduate and law school degrees but they may also qualify for special scholarship and grant-in-aid opportunities at both Gannon University and Duquesne Law School.

**COURSE DESCRIPTIONS:**

**PLAW 260: Introduction to Law in Society**  
Introduction to legal institutions and processes; evolution of the American legal system; major substantive areas of law; legal reasoning and the adversarial process; and, the role of attorneys and courts in American society. 3 credits

**PLAW 357: Legal Analysis and Persuasion**  
Legal analysis and persuasion will introduce the student to the fundamentals of legal thinking, including the critical examination of case law, statutory law and other written materials. Applying this legal analysis, students will learn to persuade a targeted audience in both written and oral forms. Classroom exercises include briefs, mock appellate arguments and/or mock trial. 3 credits/Spring, Third or Fourth Year

**PLAW 380: Career Preparation in Law**  
This course will introduce students to the skills required to succeed on a legal career path. This will include an overall foundation of legal skills in thinking critically and clear and concise legal writing. There will also be a specific focus on the LSAT and legal job opportunities. This focus will be facilitated through responses to hypotheticals, questions, samples, and study materials. 3 credits

**Pre-Law Curriculum**  
This is not the track for 3+3 students. This is the curriculum for pre-law students who have not decided on a major in their freshmen and sophomore years.

*(Numerals in front of courses indicate credits)*

FRESHMAN	
<i>Fall</i>	<i>Spring</i>
3 College Comp/LENG 111	3 Crit Analysis & Comp/LENG 112
3 Sacred Scriptures/LTHE 121	3 History Without Borders/LHST 111
*3 Political Science/POLI 111	*3 Political Science/POLI 112
*3 Intro. to Law in Society/PLAW 260 or Intro. to Law/LEGL 111	*3 PC Applications/CIS 170-173
2 First-Year Seminar/LEGL 100	3 Intro. to Philosophy
14	15
SOPHOMORE	
3 Theology II Series/LTHE	
3 Literature Series/LENG	
3 Fine Art Series/LFIN	
3 LS/Science	



- 3 Math
- 3 Legal Analysis & Persuasion/PLAW 357
- 3 Public Speaking/SPCH 111
- 6 Modern Foreign Language
- 3 Cognates
- 3 Elective

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33

*\*This course may not be required in certain 3 + 3 program choices.*

*\*\*PC Applications exam may be taken. If passed, CIS 150 or 170-172 may be waived.*

### PRE-LAW MINOR

Beyond the Sophomore year Pre-Law students must select a major field of study. Additional Pre-Law Cognates are recommended and a Pre-Law Minor may be earned through the completion of 18 credit hours, including:

- 3 Intro Law & Society/PLAW 260 or Intro to Law/LEGL 111
- 3 Legal Analysis and Persuasion/PLAW 357
- 3-6 Constitutional Law/POLI 350
- Civil Liberties and Civil Rights/POLI 351
- Philosophy of Ethical Responsibility/LPHI 237
- Legal Research Writing I/LEGL 211
- Legal Environment of Business/BCOR 203
- Philosophy & Law/PHIL 290
- 3-6 Logic/PHIL 210
- Advanced Composition/ENGL 211
- Business and Professional Communication/ENGL 212
- 3-6 Criminal Law & Procedure/CRJS 320
- Congress & Legislative Process/POLI 315
- Career Prep in Law/PLAW 380
- Legal Research Writing II/LEGL 212

### Law and Politics

Students pursuing this track will take most of the required courses in the Political Science major, but will substitute 2 legal courses, Introduction to Law & Society and Legal Analysis & Persuasion, for 2 upper level Political Science courses.

Students who intend to go on to law school are encouraged to complete the Legal Studies Certificate. The certificate can be completed within the four year program by using those courses as the allowable cognates and electives in the student's major. If the pre law school student does not want to complete the certificate, they are encouraged to take some of the Legal Studies courses so that they can learn skills that could enable them to find summer employment and/or part-time employment in legal settings. Some helpful courses would include Legal Research & Writing I and II, Public Records Research, Computers in Law, and Trial Prep and Procedure.

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## PSYCHOLOGY

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LORI D. LINDLEY, Ph.D., *Program Director*

FACULTY: *Associate Professors:* Lori Lindley, Luke Rosielle. *Assistant Professors:* Andrew Caswell, Jessica Hartnett, Ryan Leonard, John Ranney. *Lecturer:* Barbara Townsend.

ADJUNCT FACULTY: Danielle Clark, Susan Galle-Boyko, Bruce Kobal.

## Aims and Objectives

The Department of Psychology and Counseling offers two separate undergraduate degrees in Psychology: a **Bachelor of Arts** and a **Bachelor of Science** degree.

The **Bachelor of Arts** in Psychology prepares students for a variety of professional and liberal arts careers by providing maximal flexibility in vocational planning. Because of the strong foundation the curriculum provides in research methods, Liberal Studies Core, and behavioral sciences, the psychology major prepares the student to pursue graduate study in a variety of fields including Psychology, Social Work, Counseling, Business and Health Care Administration, Law and others. It also prepares the student for other careers that require a strong liberal arts background.

The **Bachelor of Science** in Psychology prepares students for graduate programs in Neuroscience, Cognitive Psychology, Biopsychology, and other related fields. Students gain extensive research experience through advanced statistics and research courses. In addition, students select courses in Mathematics, Statistics, Biology, Chemistry or Computer Science to augment their psychology courses and increase their competitiveness in their chosen area of emphasis. Specialized courses sequences are also available for students who combine the psychology major with the pre-medical or pre-physical therapy curriculum.

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## COURSE DESCRIPTIONS:

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### PSYC 101: First-Year Seminar

The First-Year Seminar is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life, and to encourage development of academic, personal and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered.

(Freshman are expected to complete the First-Year Seminar during the first semester at Gannon. If not, the student must complete the requirement prior to the sophomore year.) *2 credits, Fall*

### PSYC 111: Introduction to Psychology

An introduction to the principal theories and methods used by psychology to explain human personality, behavior and adjustment. *3 credits, Fall, Spring*

### PSYC 211: Psychological Statistics

An introduction to frequency distributions, sampling distributions, t-tests, analysis of variance, correlation, linear regression, and non-parametric statistics. *3 credits, Fall, Spring*

### PSYC 212: Psychological Statistics Lab

Application of and practice using the theoretical concepts in statistics introduced in PSYC 211. This lab should be taken in the same semester or the following semester as PSYC 211. It is required for psychology majors, optional for non- majors.

Pre or Corequisite: PSYC 211

*1 credit, Fall*

### PSYC 214: Careers in Psychology

An overview of the field of psychology, designed to orient students to the psychology major and how best to tailor it to meet their interests and professional goals. Topics to be covered include ethics, professional writing, applying to graduate school, career opportunities at the bachelor's level, applying the psychology major to other fields, and professional involvement in psychology.

Prerequisite: PSYC 111

*3 credits, Spring*

### PSYC 222: Psychology of Human Development

An investigation of the theories and research findings related to the understanding of complex behavior as it evolves throughout the lifespan.

Prerequisite: PSYC 111

*3 credits, Fall, Spring*

**PSYC 225: Social Psychology**

An examination of the relationship between social settings and cognitive, affective, and behavioral processes. Includes the study of group dynamics.

Prerequisite: PSYC 111

*3 credits, Spring*

**PSYC 232: Psychopathology**

A general introduction to various models of psychopathology with emphasis on the study of anxiety disorders, depression, psychotic disorders, and personality disorders.

Prerequisite: PSYC 111

*3 credits, Fall, Spring*

**PSYC 234: Health Psychology**

A consideration of the roles played by psychological factors in the maintenance of health and the development of illness. Emphasizes the importance of the therapeutic relationship which includes the patient, the patient's family and the health provider. Includes both a review of relevant clinical and research findings and practical concepts/skill development.

Prerequisite: PSYC 111

*3 credits, Spring*

**PSYC 239: Servant Leadership**

This particular leadership seminar examines the role of leader as servant in an international setting. Students will study theories of leadership, including servant leadership, and apply what they have learned in Ireland. Students will spend one week working with children or adults at agencies serving underprivileged neighborhoods in the city of Limerick.

*1 credit, Spring*

**PSYC 240: Horses for Interpersonal Skills**

A unique, experiential application of equine-assisted activities to interpersonal skill development. Incorporates exploration of theories, research and skills related to self-awareness and emotional intelligence. Includes off-site, hands-on interactions with therapy horses. The course does not involve riding and no equine experience is necessary. Students will be responsible for their own transportation to off-site portion of class and a course fee is required.

Prerequisite: PSYC 111

*3 credits, Fall, Odd numbered years*

**PSYC 265: Cross-Cultural Psychology**

An examination of the role that cultural differences play in social interaction. Factors such as race, ethnicity, religion, gender, and language are considered as they impact behavior between individuals and between groups.

Prerequisite: PSYC 111

*3 credits, Fall, Spring*

**PSYC 275: Psychology of Women**

This course concerns psychological approaches to studying women. It examines relevant theory and research. Topics include identity and self-concept, relationships and power, sexuality, parenting, work, mental health and women of color.

Prerequisite: PSYC 111, Junior or senior standing.

*3 credits, Fall, Odd numbered years*

**PSYC 292: Industrial/Organizational Psychology**

An introduction to the application of psychological principles to the work environment.

Topics include such areas as employee selection, placement, training, employee morale and motivation, supervisory styles, leadership, and general organizational behavior.

Prerequisite: PSYC 111

*3 credits, Spring, Even numbered years*

**PSYC 300: Psychology of Creativity**

This course was originally designed to integrate the practice of creative production with psychological theory and research dealing with creative behavior. Presently, these facets will be preserved but the emphasis will shift somewhat to theories and research. Creative production, however, will still be required. Throughout the semester, the student will complete various creative exercises and will read essays on the creative process. The exercises will provide an

opportunity to develop creative skills in artistic, musical or literary expression, in theatrical production or in scientific and technical problem solving. Readings in psychoanalytic, behavioral, humanistic, and psychophysiological theories of creativity will provide students with the basis for exploring creativity in themselves and in others.

Prerequisite: PSYC 111

*3 credits*

### **PSYC 303: Research Methods w/Lab**

An introduction to basic procedures in psychological research. The components of an experimental study including literature review, hypothesis formation, experimental design, ethics, statistical analysis, interpretation, and communication of research findings are covered. Concepts are illustrated by conducting small group experiments in the lab portion of the course.

Prerequisites: PSYC 211

*4 credits, Fall*

### **PSYC 304: Advanced Research Methods**

A continuation of PSYC 303, this course involves advanced concepts in psychological research, as well as the design and implementation of individual research based on the formation of an original hypothesis. All research is done under the guidance and supervision of the instructor.

Prerequisites: PSYC 211, PSYC 303

*3 credits, Spring*

### **PSYC 305: Learning and Cognition**

A general introduction to the major theories of learning and cognition. A chronological overview of the gradual change from predominately behavioral models to predominately cognitive models of learning is examined.

Prerequisite: PSYC 111, PSYC 211 or equivalent course.

*3 credits, Fall*

### **PSYC 306: Psychology of Communication**

An introduction to psycholinguistic theory with emphasis on the pragmatics of human communication.

Prerequisite: PSYC 111

*3 credits*

### **PSYC 307: The Helping Relationship**

Emphasis is placed on learning the skills necessary to develop a helping relationship. Students will practice relationship building skills with each other in class. Video feedback will be used as well as class discussion to assess student performance. Person-Centered Theory will be analyzed as a rationale for the helping relationship.

Prerequisite: PSYC 111

*3 credits, Fall, Even numbered years*

### **PSYC 308: Psychological Assessment**

This course provides an introduction to the process of psychological assessment. A broad array of techniques is presented including behavioral observation, interviews with varying degrees of structure as well as psychological tests that have been developed to assess cognition, personality and interpersonal processes. Neuropsychological instruments will be discussed as well as techniques used in the assessment of families.

Prerequisite: PSYC 111, PSYC 211, PSYC 232

Junior or senior standing as Psychology major

*3 credits, Spring, Odd numbered years*

### **PSYC 309: Group Dynamics**

An examination of group dynamics, with an emphasis on interpersonal processes and therapeutic group elements. A variety of group formats and functions will be covered. The course includes both theoretical and experiential components.

Prerequisite: PSYC 111

*3 credits, Fall, Odd numbered years*

### **PSYC 311: Multivariate Statistics**

A continuation of PSYC 211 with coverage of such topics as multiple regression, analysis of covariance, and selected current topics in the field of psychological statistics.

Prerequisites: PSYC 211, PSYC 212

*3 credits, Spring, Odd numbered years*

**PSYC 313: Psychometrics**

A survey of psychological testing and evaluation with an examination of basic technical considerations such as reliability, validity, and standardization. Selected, widely used tests will be reviewed. Some of the controversies in interpretation and application of standardized test results will also be discussed.

Prerequisites: PSYC 111, PSYC 211

*3 credits, Spring, Even numbered years*

**PSYC 314: Adulthood and Aging**

Special consideration of the major psychological processes of aging as they relate to individual behavior and adaptation. Includes the influences of aging on the body, learning and memory, employment and productivity, personality, and psychopathology.

Prerequisite: PSYC 111, PSYC 222

Junior or senior standing

*3 credits, Spring, Odd numbered years*

**PSYC 315: Physiological Psychology**

A study of neural mechanisms and their relationship to behavior. A survey of the development of physiological concepts in psychology.

Prerequisite: PSYC 111, BIOL 104 or higher, Junior or senior standing.

*3 credits, Spring*

**PSYC 316: Human Factors Psychology**

Human factors psychology seeks to take psychological knowledge (especially relating to how people perceive, perform, attend, remember, and think) and apply this knowledge to making the world an easier and safer place in which to interact. The goal of this class is to give students a basic overview of these cognitive processes and then apply them to such topics as the design of displays, controls, and workspaces, stress and workload, safety and accident prevention, and human-computer interaction.

Prerequisite: PSYC 111, Junior or senior standing

*3 credits*

**PSYC 317: Evolutionary Psychology**

Evolutionary Psychology represents the contemporary study of the genetic roots of human behavior, the interaction between biology and the environment, and the ways in which the ancestral environment may have shaped contemporary life. Topics include, but are not limited to: gender differences, romantic relationships and attraction, parenting, environmental preferences, food preferences, violence, warfare, and cooperation.

Prerequisite: PSYC 111, Junior or senior standing

*3 credits*

**PSYC 318: Sensation and Perception**

Sensation and Perception is the study of how people use their sensory systems (vision, touch, hearing, taste, and smell) to perceive aspects of their environment. This class will present an overview of the basic sensory processes and how the brain uses this information interpret, navigate, and interact with the world.

Prerequisite: PSYC 111

*3 credits, Spring, Even numbered years*

**PSYC 319: Physiological Psychology Lab**

The laboratory in physiological psychology gives the student hands-on experience conducting physiological psychology research and communicating the results of this research. The particular experiments conducted in the laboratory will closely mirror the topics concurrently discussed in PSYC 315, Physiological Psychology.

Co-requisite: PSYC 315

*1 credit, Spring*

**PSYC 325: Cognitive Psychology**

This course will provide an overview of some topics in the area of cognitive psychology.

Topics include the neural basis of cognition, perception, attention, memory, knowledge, and thinking.

Prerequisites: PSYC 111, PSYC 211

*3 credits, Fall*

**PSYC 326: Cognitive Psychology Lab**

The laboratory in cognitive psychology will give the student practical experience

programming and running computer-based cognitive psychology experiments. The particular experiments will closely mirror those concurrently discussed in PSYC 325, Cognitive Psychology.

Co-requisite: PSYC 325

*1 credit, Fall*

#### **PSYC 340: Motivation and Emotion**

Positive psychology is the scientific study of the strengths that enable individuals and communities to thrive. This course will provide an introduction to positive psychology.

Students explore the concepts, the research behind the concepts, cognitions, and practices that enhance well-being.

Prerequisite: PSYC 111

*3 credits, Fall, Even numbered years*

#### **PSYC 352: History and Systems in Psychology**

A detailed consideration of the formal systems of psychology (e.g., Structuralism, Behaviorism, Humanistic-Existentialism) a review of psychology's roots in philosophy and physiology and a survey of the current status of the discipline, with special emphasis on one or more topics of continuing historical interest.

Prerequisite: PSYC 111, Junior or senior standing

*3 credits*

#### **PSYC 362: Psychotherapy Theories**

A survey of the various forms of psychotherapy including the history of the field, methods, theoretical and applied models of the therapeutic process, as well as practical issues such as training, gaining credentials, and other professional issues. The experience of becoming and working as a psychotherapist and coverage of selected specialty areas will also be considered.

Prerequisite: PSYC 111, Junior or senior standing

*3 credits, Fall, Even numbered years*

#### **PSYC 372: Personality Theory**

A survey of major theories of personality with emphasis on the Freudian, Neo-analytic, Cognitive, Behavioral and Existential perspectives.

Prerequisite: PSYC 111

*3 credits, Spring, Even numbered years*

#### **PSYC 382: Undergraduate Psychology Internship**

An opportunity to use the principles of psychology in applied settings under professional supervision. A program of readings is completed concurrently with the field placement. The objective is the integration of theoretical knowledge with practice.

Prerequisites: PSYC 111, Credits are by arrangement.

*3 or 6 credits*

#### **PSYC 390-394: Special Topics in Psychology**

Prerequisite: PSYC 111, prerequisites vary with particular course being offered

*1-3 credits*

#### **PSYC 395: Research Practicum**

The design and implementation of special research projects where the Psychology major works under the personal supervision of a faculty member. This course requires instructor permission.

Prerequisites: PSYC 211, Credits are by arrangement.

*1-3 credits*

#### **PSYC 396-399: Independent Study**

Individual study of a particular topic in Psychology under the supervision of a faculty member. This course requires instructor permission. Credits by arrangement.

*1-3 credits*

#### **PSYC 400: Senior Thesis in Psychology**

This seminar for senior majors in Psychology deals with recent research in a wide variety of specialty areas in psychology. The emphasis is on the synthesis of previous research and the critical analysis of specific research methods and findings.

Prerequisite: Senior standing as Psychology major.

*3 credits, Fall, Spring*

Psychology Bachelor of Arts Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN	
<i>Fall Semester</i>	
3	College Composition/LENG 111
3	History Without Borders/LHST 111
3	Human Biology/BIOL 104
3	Intro to Psychology/PSYC 111
2	First-Year Seminar/PSYC 101
14	
SOPHOMORE	
<i>Fall Semester</i>	
3	Introduction to Philosophy/LPHI 131
3	Theology II Series/LTHE
3	Psyc Statistics/PSYC 211
1	Psyc Statistics Lab/PSYC 212
3	Modern Language
3	Psyc Elective
16	
<i>Spring Semester</i>	
3	Crit Analysis & Comp/LENG 112
3	Psy of Human Dev/PSYC 222
3	Public Speaking/SPCH 111
3	Sacred Scriptures/LTHE 121
3	Psychopathology/PSYC 232
15	
JUNIOR	
<i>Fall Semester</i>	
4	Research Methods/PSYC 303
3	Cognitive Psych/PSYC 325
3	Theo/Phil III Series/LTHE or LPHI
3	Cross-cultural Psyc/PSYC 265
3	Electives
1	Leadership Seminar
17	
<i>Spring Semester</i>	
3	Philosophy II Series/LPHI
3	Literature Series/LENG
3	Social Psyc/PSYC 225
3	Careers in Psychology/PSYC 214
3	Modern Language
3	Psyc Elective
18	
SENIOR	
<i>Fall Semester</i>	
3	Senior Seminar/LBST 383
3	Psyc Elective
9	Electives
15	
<i>Spring Semester</i>	
3	Psyc Senior Thesis/PSYC 400
12	Electives
15	

Psychology Bachelor of Science Curriculum

Students are required to complete a minor in Mathematics, Statistics, Biology, Chemistry, or Computer Science; or, to choose at least 15 credits from the list of Cognate courses.

(Numerals in front of courses indicate credits)

FRESHMAN	
<i>Fall Semester</i>	
3	College Composition/LENG 111
3	History Without Borders/LHST 111
3	Human Biology/BIOL 104
3	Intro to Psychology/PSYC 111
2	First-Year Seminar/PSYC 101
14	
<i>Spring Semester</i>	
3	Crit Analysis & Comp/LENG 112
3	Psych of Human Dev/PSYC 222
3	Math/MATH 111
3	Sacred Scriptures/LTHE 121
3	Psychopathology/PSYC 232
15	

SOPHOMORE			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Introduction to Philosophy/LPHI 131	3	Philosophy II Series/LPHI
3	Theology II Series/LTHE	3	Literature Series/LENG
3	Psych Statistics/PSYC 211	3	Social Psych/PSYC 225
1	Psych Statistics Lab/PSYC 212	3	Careers in Psychology/PSYC 214
3	Modern Language	3	Modern Language
3	Minor or Cognate course	3	Minor or Cognate course
16		18	
JUNIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
4	Research Methods/PSYC 303	3	Minor or Cognate course
4	Cognitive Psych/PSYC 325/326	4	Physiological Psych/PSYC 315/319
3	Theo/Phil III Series/LTHE or LPHI	3	Fine Art Series/LFIN
3	Minor or Cognate course	3	Public Speaking/SPCH 111
3	Research Practicum	3	Adv Research Methods/PSYC 304
1	Leadership Seminar		
18		16	
SENIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Senior Seminar/LBST 383	3	Senior Thesis/PSYC 400
3	Psychometrics/PSYC 313	3	Multivariate Statistics/PSYC 311
6	Minor or Cognate courses	3	Psych elective
3	Psych elective	6	Minor or elective courses
15		15	

**Cognate Courses**

MATH 140 Calculus 1  
MATH 141 or higher numbered MATH courses  
BIOL 106/107 Introductory Microbiology/LAB  
BIOL 115/116 Human Anatomy/Physio I/LAB  
BIOL 117/118 Human Anatomy/Physio II/LAB  
BIOL 122/123 Molecular and Cellular/LAB  
BIOL 124/125 Animal Form and Function/LAB  
CHEM 111/112 General Chemistry I/LAB  
CHEM 114/115 General Chemistry II/LAB  
CHEM 221/222 Organic Chemistry I/LAB  
CHEM 224/225 Organic Chemistry II/LAB  
CHEM 366/367 Structural Biochemistry/LAB  
CIS 180/181 Problem Solving & Comp Prog/LAB  
CIS 182/183 Object-Oriented Programming/LAB  
CIS 220 Data Structures and Algorithms  
CIS 239 The User Experience  
CIS 360 Comparative Languages  
PHYS 105/106 General Physics I/LAB  
PHYS 108/109 General Physics II/LAB



## Psychology Pre-Medical Bachelor of Science Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	College Composition/LENG 111	3	Crit Analysis & Comp/LENG 112
4	General Chemistry I/CHEM 111/112	3	Psych of Human Dev/PSYC 222
4	Molecular & Cellular/BIOLOG 122/123	3	Math/MATH 112 or 140 (preferred)
3	Intro to Psychology/PSYC 111	4	General Chem II/CHEM 114/115
2	First-Year Seminar	4	Animal Form & Function/ BIOLOG 124/125
<hr/> 16		<hr/> 17	
SOPHOMORE			
<i>Fall Semester</i>		<i>Spring Semester</i>	
4	Organic Chemistry I/CHEM 221/222	3	Intro to Philosophy/LPHI 131
3	Sacred Scriptures/LTHE 121	4	Organic Chem II/CHEM 224/225
3	Psych Statistics/PSYC 211	3	Social Psych/PSYC 225
1	Psych Statistics Lab/PSYC 212	3	Careers in Psychology/PSYC 214
3	Psychopathology/PSYC 232	3	Public Speaking/SPCH 111
3	History Without Borders/LHST 111	<hr/>	
<hr/> 17		<hr/> 16	
JUNIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
4	Research Methods/PSYC 303	3	Health Psychology/PSYC 234
3	Structural Biochemistry/CHEM 366	4	Physiological Psych/PSYC 315/319
4	General Physics I/PHYS 105/106	4	General Physics II/PHYS 108/109
3	Theology II Series/LTHE	3	Philosophy II Series/LPHI
3	Modern Language	3	Modern Language
<hr/> 17		<hr/> 17	
SENIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Literature Series/LENG	3	Senior Thesis/PSYC 400
3	Cognitive Psych/PSYC 325	3	Senior Seminar/LBST 383
1	Leadership Seminar	3	Fine Art Series/LFIN
3	Theo/Phil III Series/LTHE or LPHI	6	Psych Electives
3	Psych Elective	<hr/>	
<hr/> 13		<hr/> 15	

## Psychology Pre-Physical Therapy Bachelor of Science Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	College Composition/LENG 111	3	Crit Analysis & Comp/LENG 112
4	General Chemistry I/CHEM 111/112	3	Psych of Human Dev/PSYC 222
3	Sacred Scriptures/LTHE 121	3	Math/MATH 112 or 135
3	Intro to Psychology/PSYC 111	4	General Chem II/CHEM 114/115
2	First-Year Seminar	3	History Without Borders/LHST 111
<hr/>		1	PT Seminar I/PT 110
<hr/> 15		<hr/> 17	

SOPHOMORE			
Fall Semester		Spring Semester	
4	Molecular & Cellular/BIOL 122/123	3	Literature Series/LENG
3	Introduction to Philosophy/LPHI 131	4	Animal Form & Function/ BIOL 124/125
3	Psych Statistics/PSYC 211	3	Social Psych/PSYC 225
1	Psych Statistics Lab/PSYC 212	3	Careers in Psychology/PSYC 214
3	Psychopathology/PSYC 232	3	Public Speaking/SPCH 111
3	Theology II Series/LTHE	1	PT Seminar II/PT 210
<hr/>		<hr/>	
17		17	

JUNIOR			
Fall Semester		Spring Semester	
4	Research Methods/PSYC 303	3	Health Psychology/PSYC 234
3	Philosophy II Series/LPHI	3	Physiological Psych/PSYC 315
4	General Physics I/PHYS 105/106	4	General Physics II/PHYS 108/109
4	Human Gross Anatomy/BIOL 365/366	4	Animal Physiology/BIOL 368/369
3	Modern Language	3	Modern Language
<hr/>		<hr/>	
18		17	

SENIOR			
Fall Semester		Spring Semester	
3	Fine Art Series/LFIN	3	Senior Thesis/PSYC 400
3	Cognitive Psych/PSYC 325	4	Exercise Physiology/SPRT 390/391
1	Leadership Seminar	3	Senior Seminar/LBST 383
3	Theo/Phil III Series/LTHE or LPHI	3	Psych Elective
6	Psych Electives		
<hr/>		<hr/>	
16		13	

**PSYCHOLOGY MINOR**

Completion of the following courses and electives will satisfy the requirements for a minor in Psychology:

3	Introduction to Psychology/PSYC 111
3	Psychological Statistics/PSYC 211
12	Psychology Electives*
<hr/>	
18	

*\*These electives are to be selected in consultation with Minor advisor and chosen to meet student objectives in taking Psychology as a minor.*

**THE NEXT STEP**

**Baccalaureate Degree Program for Graduates of Two Year Colleges**

**Prerequisite:**

*Introduction to Psychology/PSYC 111*

*(Numerals in front of courses indicate credits)*

Pre-Senior Year		Senior Year	
3	Psyc of Human Development/PSYC 222	3	Cognitive Psyc/PSYC 325
3	Psychopathology/PSYC 232	3	Physiological Psyc/PSYC 315
4	Research Methods/PSYC 303	3	Senior Seminar/LBST 383
4	Psyc Stats & Lab/PSYC 211, 212	12	Psyc Electives
3	Careers in Psychology/PSYC 214	3	Social Psyc/PSYC 225

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3	Introduction to Philosophy/LPHI 131	3	Senior Thesis in Psyc/PSYC 400
3	Literature Series/LENG	3	Theology or Phil III Series/LTHE or LPHI
3	Sacred Scriptures/LTHE 121	1	Leadership Seminar
3	Fine Art Series/LFIN	1	Elective
6	Modern Language		
<hr/> 35		<hr/> 32	

All students graduating from the College of Humanities, Business and Education must have completed six credits of a modern foreign language.

Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program. Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

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## SOCIAL WORK

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PARRIS J. BAKER, Ph.D., MSSA, *Program Director*

FACULTY: *Associate Professor:* Sara Lichtenwalter. *Assistant Professor:* Parris J. Baker. *Adjunct:* Sam Harakal, Audrey McLaughlin, Charles Murphy.

The practice of professional social work requires not only the intellectual capacity to absorb a substantial body of knowledge, but also the ability to master skills in interpersonal relationships, to effect social change through social policy advocacy, and to consume and produce relevant, evidence-based research. Professional social work promotes personal commitment to the NASW Code of Ethics and the fundamental principles and tenets of Catholic Social Thought. Critical to the development of professional social workers at the baccalaureate level is the acquisition of generalist practice skills, the capacity to work with various size client systems; to interact with diverse populations who may function in different social and cultural environments; and to embrace the challenges of securing social and economic justice.

The mission of the Gannon University Social Work Program is to prepare students as social work professionals able to competently promote human and community well-being by utilizing social work knowledge, values and skills. Through a curriculum informed by the Judeo-Christian concept of social caring and social work professional values, we produce graduates committed to: service; integrity; social and economic justice; human rights; the dignity and worth of the person and their relationships; and scientific inquiry; who will become leaders in local, regional, and global communities.

Gannon University Social Work Program directs special attention toward preparing students to engage international social work practice and policy, to conceptualize the interrelationship and interdependence of our global community, to promote human rights as defined by the United Nations' Universal Declaration of Human Rights, and to analyze international social welfare concerns such as poverty, healthcare, and social and economic justice.

The Social Work Program of Gannon University is accredited at the baccalaureate level by the Council on Social Work Education. Upon graduation, students who have earned a letter grade of B or better in the social work concentration and are accepted in an accredited master of social work program can achieve Advanced Standing. Advanced Standing permits students to complete graduate social work education in 12-18 months.

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## COURSE DESCRIPTIONS:

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### **SCWK 111: Introduction to Social Work**

This is the first course in the Social Work program and is required for all other courses in the Social Work Sequence. It provides the student an opportunity to learn about Social Work and exposes him/her to the field of Social Work Practice. Students are also required to participate in field observation in an agency setting for 3 hours per week.

*3 credits, fall*

### **SCWK 211: Intro to Gerontology**

An overview of the study of gerontology. Examines aging in America, stereotypes, theories on aging, adult development, work and living environments, and selected problems of the elderly. This course has a service-learning component.

*3 credits, fall*

### **SCWK 212: Social Problems, Services and Issues**

This is the foundation course of the Social policy sequence and is required for admission to the Social Work Program. It is designed to provide students with a basic understanding of the historical development of social welfare policy in the United States. In addition to its primary purpose of introducing students to the social policy process, this course provides students with an opportunity to explore career choices through interactions with local human service delivery organizations during tours of community agencies. Furthermore, there is a 20 hour volunteer component to this course.

*3 credits*

### **SCWK 213: Medical Terminology**

This course introduces social work students and other students to medical terminology and demonstrates the interaction and interrelationship between and among anatomy, physiology, and pathology.

*1 credit*

### **SCWK 220: Dying, Death and Bereavement**

This course explores dying, death and grief, a topic of interest to personnel in the human service and related professions. Issues discussed are theories of dying, death and bereavement with aged, and assessments and interventions with clients and their families. Social cultural differences in attitude and behavior toward death as well as ethical, legal issues, resources and support services are explored.

*3 credits*

### **SCWK 221: Human Behavior and the Social Environment I**

This is the introductory course to understanding human behavior from a multidimensional, biopsychosocial approach. Here we focus on the social environment and apply theoretical frameworks in order to put human behavior into perspective. In this course students begin to study the person from a biological perspective, looking at the major systems of the human body. We also examine psychological and sociological theories and knowledge by looking at cognition, emotion, the self as well as stress and coping. This course also examines the impact of culture, spirituality, the physical environment and social institutions in shaping human behavior. Finally, this course addresses different sized social systems from formal organizations, communities, groups and the family. Students begin to see how social systems promote or defer health and well being.

*3 credits*

### **SCWK 222: Human Behavior and the Social Environment II**

This is the continuation of HBSE I. This course takes a person-in-environment focus across the life span. For each stage in the Life Cycle biological, psychological, sociological, and spiritual variables that influence development are identified. This course addresses the impact of various size systems on human behaviors as well as issues of discrimination and social/economic justice.

*3 credits*

### **SCWK 223: Human Behavior and the Social Environment III**

Human Biology. Examination of the major human biological systems with a special emphasis on understanding the brain and the effects of drugs and alcohol.

*3 credits*

**SCWK 230: Human Diversity**

This course studies the impact of discrimination and inequality on specific and generalized collectivities (groups) in our environment. Particular and specific attention will be given to the more vulnerable populations of women, gay and lesbians, and minorities of color. The course will examine the response(s) offered by specific disciplines (i.e., professional social work) and by the larger society, as they relate to discrimination and inequality. Methods to celebrate differences are explored.

*3 credits*

**SCWK 315: Bio Medical Aspects of Aging**

This course is designed to acquaint students with the biological and medical changes occurring in the organs of man during the aging process. Course will include a layman's discussion of the aging and pathological process of the organs as well as common medical pharmacological, and surgical treatments of these organ systems.

*3 credits*

**SCWK 316: Counseling Older Adults**

This course will identify various areas impacting lives of the "young" old, "middle" old, and the "old" old. Misconceptions, stereotypes, and biases toward the aging process will be explored. The course focuses on assessment, counseling interventions, and techniques designed to enrich the world of the mature adult and their families.

*3 credits*

**SCWK 322: Correctional Counseling and Case Management**

An examination of strategies for affecting offender behavior change by correctional counseling and case management in both institutional and community based settings. Emphasis will be on functional and contemporary approaches. CRJS elective.

Prerequisite: CRJS 201

*3 credits*

**SCWK 328: Drugs of Abuse**

The U.S. has the highest rate of drug abuse of any industrialized country in the world. This course is designed to provide the student with a broad understanding and insight into drug abuse within American society and its impact upon society in general. The primary focus will be on how the criminal justice system, health care system, and other institutions attempt to deal with the nations' drug problem. The course will focus on what has been done in the past by society about the drug problem, what is and what is not working now, and what needs to be done in the future.

*3 credits*

**SCWK 330: The Juvenile Justice System**

An analysis of the justice system as it relates to the disposition of cases involving the juvenile offender. Where appropriate, a comparative analysis with the adult process will be emphasized.

*3 credits, Spring and Distance Learning (Internet)*

**SCWK 332: Balance and Restorative Justice**

This course introduces the student to the state of the art in juvenile justice. It provides the student with an understanding and a working knowledge of the key principles in balanced and restorative justice. Key issues that will be addressed are how to implement and measure these principles.

*3 credits*

**SCWK 333: Victimology**

This course will examine the plight of victims including child maltreatment, domestic violence, victimization at work and school. It further explores the extent of homicide victimization. In reviewing the above mentioned topics, guest speakers with expertise in these areas will present their viewpoints on the extent of victimology. Throughout this course, the BARJ principle will be the focus in balancing the victim's role in the criminal justice system.

*3 credits*

**SCWK 336: Mental Health and the Elderly**

Factors involved in successful aging and maintenance of healthy personality functioning are investigated. The most common psychological disorders of the elderly are considered from etiological, diagnostic, and therapeutic aspects.

*3 credits*

**SCWK 360: Interviewing Skills**

This course introduces students to the basic interpersonal helping skills using a problem solving model. Students are expected to demonstrate understanding of the relationship of interpersonal skills to social work practice and to demonstrate initial mastery of the basic helping skills. *3 credits*

**SCWK 361: Introduction to Generalist Practice**

Emphasis is placed on introducing students to a generalist problem-solving practice framework that is applicable across a wide range of settings, problems and different size systems. *3 credits*

**SCWK 362: Generalist Practice with Families/Groups**

This is a continuation of SCWK 361. It is designed to reinforce, deepen and expand the student's knowledge of the generalist problem-solving practice framework with particular emphasis on recognizing its utility in working with groups and the family size systems.

Prerequisite: SCWK 361 *3 credits*

**SCWK 363: Generalist Practice with Organizations/Communities**

Continuing with the generalist problem-solving model, this course focuses on a generalist approach to practice with community and institutional systems. Students gain knowledge and skills in working with both organizations and communities through such activities as community assessments and asset mapping, along with opportunities to demonstrate leadership by advocating for policies and services in their field placements. Professional social work interventions for vulnerable populations such as homeless and immigrant populations, the low-income elderly and disabled, and families residing in marginalized neighborhoods are considered utilizing organization theory and various frameworks for community analysis. This course is designed to be taken concurrently with SCWK 490 (Social Work Field Placement I) and facilitates the integration of field experience with course content.

Prerequisites: SCWK 361 *3 credits*

**SCWK 364: Social Welfare Policy, Programs and Issues**

This course analyzes social welfare policy, programs and services. In addition to developing conceptual understanding, students will begin to develop skills in policy analysis using the policies of local community agencies as case illustrations. The impact of State, Federal, and global policies on social welfare are explored.

Prerequisite: SCWK 361 *3 credits*

**SCWK 380: Social Work Research Methods**

Through participation in a semester long research project, students learn that they are both a consumer and a producer of empirically based knowledge. This course includes an introduction to evidence-based practice models and assists students in developing beginning knowledge and skill in evaluating their practice and conducting evaluative research. The relationship between epistemological approaches, theory, and scientific are explored in light of ethical scientific inquiry and research practice informed by the NASW Code of Ethics Standards for Research. *3 credits*

**SCWK 390-394: Special Topics in Social Work**

Topics of special and/or current interest in all areas of Social Work will be covered. The topics will vary from year to year, depending on the faculty resources and the needs of the students.

*1-3 credits*

**SCWK 395-399: Independent Study**

*1-3 credits*

**SCWK 400: Social Work Senior Integrating Seminar I**

This course is intended to help students integrate knowledge along with developing and refining skills for beginning professional Social Work practice. Students will use specific episodes of services (live cases) from their field experience in this course.

Concurrent with SCWK 363, SCWK 490

*2 credits*

**SCWK 401: Social Work Senior Integrating Seminar II**

A continuation of SCWK 400 intended to facilitate the integration of knowledge, along with

the development and refining of skills for beginning Social Work Practice. Taken concurrently with SCWK 491.

Prerequisite: SCWK 400.

1 credit

### SCWK 490 & 491: Social Work Field Placement I and II

In field placement, students are expected to demonstrate in specific and concrete ways that they are prepared as beginning professional generalist practitioners to work with all size systems from individual, family, group, organization and community. It is the program's expectation that students will not only use the values and ethics that they have acquired through their liberal arts foundation and the social work curriculum but that they will actively promote these values and ethics in agency settings. The field component by its very nature of exposing students to real and complex life situations demonstrates and requires students and field instructors to seek new social work knowledge in order to find the best solutions to meet the client systems needs.

Corequisite: SCWK 363, 400

6 credits

### SCWK 495: Advanced Interviewing Skills

This course will focus on two very similar approaches to interviewing: solution focused and motivational interviewing. Both approaches are similar and reinforce each other and both approaches are aimed at what professionals label difficult clients. The course requires a basic understanding and skill in using basic interviewing skills. These skills will be quickly reviewed and then students will learn both solution focused and motivational interviewing.

Prerequisite: SCWK 360

3 credits

### Social Work Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	College Composition/LENG 111	3	Crit Analysis & Comp/LENG 112
3	Social Work/SCWK 111	3	Political Science/POLI 111
3	Sacred Scriptures/LTHE 121	3	Introduction to Philosophy/LPHI 131
2	First-Year Seminar	3	PC Applications/CIS 170,171,172,173
3	Public Speaking/SPCH 111	3	Social Problems, Services, Issues/SCWK 212
14		15	
SOPHOMORE			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	History Without Borders/LHST 111	3	Psychology/PSYC 111
3	Literature Series/LENG	3	Political Science/POLI 122
3	Theology II Series/LTHE/THEO	1	Leadership Seminar
3	Hum Beh & Soc Env I/SCWK 221	3	Interviewing Skills/SCWK 360
3	Human Diversity/SCWK 230	3	Hum Behav & Soc Env II/SCWK 222
3	Philosophy II Series/LPHI	3	Theology or Phil III Series/LTHE or LPHI
18		16	
JUNIOR			
<i>Fall Semester</i>		<i>Spring Semester</i>	
3	Statistics/SOCI 351/PSYC 211	3	Hum Beh & Soc Env III/SCWK 223
3	Intro to Generalist Practice/SCWK 361	3	Generalist Practice with Families/Groups/SCWK 362
3	Organizational Behavior/MGMT 316 or Ethical & Social Responsibility/ MGMT 360	3	Social Welfare Policy, Prog & Issues/SCWK 364
3	Language	3	Social Work Research Meth/ SCWK 380
3	Fine Art Series/LFIN		

<div>3</div> <div>Electives</div> <div>18</div>	<div>3</div> <div>Language</div> <div>15</div>
<div>SENIOR</div> <div>Fall Semester</div>	
<div>6</div> <div>Social Work Field Placement I/SCWK 490</div>	<div>6</div> <div>Social Work Field Placement II/SCWK 491</div>
<div>3</div> <div>Generalist Practice with Comm. &amp; Org./SCWK 363</div>	<div>1</div> <div>Social Work Senior Integrating Seminar II/SCWK 401</div>
<div>5</div> <div>Electives</div>	<div>9</div> <div>Elective</div>
<div>2</div> <div>Social Work Senior Integrating Sem I/SCWK 400</div> <div>16</div>	<div>16</div>

THE NEXT STEP

Baccalaureate Degree Program for Graduates of Two Year Colleges

Social Work

(Numerals in front of courses indicate credits)

<div>Pre-Senior Year</div>		<div>Senior Year</div>	
<div>3</div> <div>HBSE I/SCWK 221</div>	<div>3</div> <div>Human Behavior in the Social Environment II/SCWK 222</div>	<div>3</div> <div>Interviewing Skills/SCWK 360</div>	<div>3</div> <div>Generalist Practice with Organization/Communities/SCWK 363</div>
<div>3</div> <div>Intro to Generalist Practice/SCWK 361</div>	<div>3</div> <div>Generalist Practice with families/groups/SCWK 362</div>	<div>6</div> <div>Social Work Field Placement I/SCWK 490</div>	<div>6</div> <div>Social Work Field Placement II/SCWK 491</div>
<div>3</div> <div>Social Welfare Policy, Programs and Issues/SCWK 364</div>	<div>3</div> <div>Human Diversity/SCWK 230</div>	<div>2</div> <div>Social Work Senior Integrating Seminar I/SCWK 400</div>	<div>1</div> <div>Social Work Senior Integrating Seminar II/SCWK 401</div>
<div>3</div> <div>Statistics for the Social Sciences/SOCI 351</div>	<div>1</div> <div>Libr Rsrch/Info Skills/LIBR 111</div>	<div>3</div> <div>HBSE III/SCWK 223</div>	<div>3</div> <div>Elective</div>
<div>3</div> <div>Intro to Philosophy/LPHI 131</div>	<div>3</div> <div>Sacred Scriptures/LTHE 121</div>	<div>3</div> <div>Theology or Phil III Series/LTHE or LPHI</div>	<div>1</div> <div>Leadership Seminar</div>
<div>3</div> <div>Literature Series/LENG</div>	<div>3</div> <div>Fine Art Series/LFIN</div>	<div>3</div> <div>Social Work Research Methods/SCWK 380</div>	
<div>34</div>	<div>34</div>		

\*\*Academic credit is not given for Life Experience.

Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program. Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

Social Work Minor

A minor in social work is intended to expand the knowledge and skills of individuals who hope to work in correctional settings, probation, group homes, mental health agencies, and other human service settings.



- 3 SCWK 111 Intro to Social Work
- 3 SCWK 212 Social Problems, Services, and Issues
- 3 SCWK 230 Human Diversity
- 3 SCWK 360 Interviewing Skills
- 3 SCWK 361 Intro to Generalist Practice
- 3 SCWK 362 Generalist Practice with Families/Groups

18 credits

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## SOCIOLOGY

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DAVID B. BARKER, Ph.D., *Program Director*

FACULTY: *Associate Professor:* David B. Barker. *Assistant Professor:* Richard W. Moodey.

The Sociology Program is primarily a service provider offering courses and academic support for students, programs, and departments throughout the University. Substantive areas of inquiry covered by courses offered in the Sociology Program include: culture, human diversity, minority-majority group relations, social inequality, social theory, deviant behavior, and social institutions. Instruction in social research methods, applied statistics, and use of statistical software is also available.

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### COURSE DESCRIPTIONS:

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#### **SOCI 110: Basic Sociology**

An introduction to sociology, its perspectives, methods, theories, and selected substantive areas. The substantive areas selected will vary.

*3 credits, Fall, Spring*

#### **SOCI 111: Introduction to Anthropology**

An introduction to the traditional four fields of anthropology: archaeology, linguistics, physical anthropology, and cultural anthropology.

*3 credits*

#### **SOCI 120: Individual, Culture, and Society**

An introduction to the social scientific study of human diversity, and to the practical implications of such knowledge.

*3 credits, Spring*

#### **SOCI 210: Deviant Behavior**

An analysis of the processes by which behavior is characterized as deviant or conforming. Issues treated include labeling, control, stigma, and deviant careers.

*3 credits*

#### **SOCI 230: Minority Groups**

A study of the way certain categories of Americans, including but not limited to racial and ethnic minorities, have come to be objects of stereotyping, prejudice, and discrimination. Various ways of working to overcome prejudice and discrimination are discussed.

*3 credits, Spring*

#### **SOCI 292: Cultural Anthropology**

An introduction to anthropological descriptions and explanations of the highly diverse ways of life created by people living in different times and places.

*3 credits*

#### **SOCI 293: Physical Anthropology**

An introduction to physical anthropology, its history, methods, theories, and selected practical applications, including forensic anthropology. Topics include: the social history and application of physical anthropology, race and human variation, primatology, and hominid evolution.

*3 credits*

#### **SOCI 351: Statistics for the Social Sciences**

This course is an introduction to the fundamentals of applied statistics. Students will learn basic descriptive and inferential methods for univariate, bivariate, and multivariate analyses. Emphasis is placed on practical applications of statistical methods. Critical evaluation of each

application is an important element of the process. Instruction in the use of statistical software is provided. 3 credits, Fall, Spring

### **SOCI 352: Methods of Social Research**

Practical guidance in the design of both quantitative and qualitative research. Topics include theory and research design, conceptualization, measurement, data construction and analysis, and the ethics of social research.

Prerequisite: SOCI 351

3 credits

### **SOCI 390-394: Supervised Readings and Special Topics in Sociology**

3 credits

### **SOCI 395-399: Independent Study**

1-3 credits

## **THEATRE – PERFORMANCE FOR MEDIA AND THE STAGE**

*(School of Communication and the Arts)*

SHAWN JEFFREY CLERKIN, *Program Director*

FACULTY: *Professor: Michael DeSanctis. Associate Professor: Shawn Jeffery Clerkin. Assistant Professors: Jennifer Allen-Catellier, Frank Garland, Mary Carol Gensheimer. Instructors: David Blaetz, Anne O'Neill. Visiting Professor: Alaina Manchester. Adjunct Faculty: Jacki Vadney.*

### **Program Description**

If you have a love for performance as an actor or spokesperson on stage or on screen, then Gannon's program in performance has unlimited possibilities for you with classes in acting, improvisation, television and radio performance, and other performance and production related courses. Here you can develop your technique and craft in voice and body communication and performance, as well as learn to promote yourself as a professional artist or a student of further study. The Schuster Theatre and School of Communication and the Arts Company creates and shares more than fifty distinctive performances each year which provide excellent exposure to the job market, and some graduates have explored international experiences through our educational partners in Great Britain, Ireland, Italy, and Scotland. Juniors and Seniors are eligible for professional performing arts internships with local theatres including the Erie Playhouse.

## **COURSE DESCRIPTIONS:**

### **Theatre**

#### **THEA 111: Introduction to Theatre**

A foundations course which specifically considers Theatre as a Liberal Art, focusing on theatre as a multi cultural phenomenon.

3 credits

#### **THEA 112: Scene Technology**

An examination of the technologies and practices of theatrical production. Emphasis is given to the interrelationship of the production team and the processes by which theatre is created.

3 credits

#### **THEA 140: Fundamentals of Acting**

A laboratory course exploring the fundamental craft of acting. Development of skills in creativity, improvisation, imagination, concentration, and text analysis.

3 credits

#### **THEA 210: Contemporary Issues in Media and Theatre**

An introduction to academic theatre and media scholarship forming a critical foundation on which students can formulate opinions based on factual observation and argue various points

of view relating to current production in theatre, radio, television, digital communication, and performance studies. This course is both writing intensive and argumentatively provocative.

*3 credits*

**THEA 212: Issues in Theatre History**

An historiographical survey of the forces which have created theatrical forms. Emphasis on Aesthetic, Social, Political, and Economic influences.

*3 credits*

**THEA 221: Voice and Diction**

A practical examination of the voice as a communicative tool. Emphasis on vocal flexibility, breathing, vocal expansion, and a working understanding of the phonetic alphabet.

*3 credits*

**THEA 310: Principles of Play Directing**

A laboratory exploration of the directing process from play selection and analysis to rehearsal techniques. Emphasis on developing leadership qualities, communication skills, and aesthetic sensitivity.

Prerequisite: THEA 140 or THEA 251 or THEA 340

*3 credits*

**THEA 331: Writing for the Stage and Screen**

Practical writing experience at transferring ideas into written dramatic forms, including playwriting and critical writing.

*3 credits*

**THEA 340: Improvisation**

This laboratory course stresses basic improvisation performance skills such as focus, teamwork, mime, character development, status work, story development and scene work. You will develop a number of practical skills that can be applied in almost any real-life situation, including creative problem-solving, quick-thinking skills, spontaneity, interpreting non-verbal communication, resolving conflict respectfully with others, and holding your place while working within a group dynamic.

*3 credits*

**THEA 350: Advanced Acting**

The course focuses on character development and script analysis for theatrical performance focusing on, but not limited to, American realism.

Prerequisite: THEA 140 or THEA 340

*3 credits*

**THEA 360-376: Production and Performance in Theatre**

A laboratory course investigating the rehearsal and performance process in creating a mainstage production. Students assume various roles, both on production crew and cast, and are evaluated on the quality of their participation in the work. The course culminates in public performance and post-performance evaluation, by students and directors.

*1 - 3 credits*

**THEA 390-399: Special Topics/Electives/Independent Study**

Specialty and elective courses offered on a rotating basis: Modern and Contemporary Drama and Theatre, Stage Combat, Make-up and Costuming, Advanced Acting, Light Design, Theatre Management, Rehearsal and Performance, Musical Theater, etc.

*1-3 credits*

**THEA 400: Senior Seminar and Thesis**

Prerequisite: COMM 350 or THEA 421, Senior status required.

*3 credits*

**THEA 421: Theatre Criticism**

A capstone course focusing on ethical, moral, and aesthetic issues. Emphasis on both written and oral application of the principles of criticism to specific problems.

*3 credits*

## Theatre

(Numerals in front of courses indicate credits)

### Freshman

#### Fall – 18 credits

- 2 First-Year Seminar/COMM 161
- 3 College Composition/LENG 111
- 3 History Without Borders/LHST 111
- 3 Presentational Strategies/SPCH 115
- 3 Intro to Electronic Media/COMM 111
- 3 Fine Arts Series/LFIN 250-9
- 1 Practicum in Media and Theatre/  
COMM 162

### Sophomore

#### Fall – 16 credits

- 3 Foreign Language I (3 credits)
- 3 Philosophy II Series/LPHI (3 credits)
- 3 Fundamentals of Acting/  
THEA 140 (3 credits)
- 3 Digital Audio Production/  
COMM 241 (3 credits)
- 1 Practicum in Media and Theatre/  
COMM 262 (1 credit)
- 3 Electives

### Junior

#### Fall – 14 credits

- 3 Broadcast Copywriting/COMM 321
- 3 Theology/Philosophy III Series/  
LTHE or LPHI
- 3 Production and Performance in  
Theatre/THEA 360-3
- 2 Leadership Seminar (2 credits)
- 3 Electives

### Senior

#### Fall – 15 credits

- 3 LS Science
- 3 Social Science
- 3 Interpersonal Communication/  
SPCH 235
- 3 Design ONLY: Costume and Makeup  
Techniques/THEA 252
- 3 Performance ONLY: Advanced Acting/  
THEA 350
- Electives (3 credits)

#### Spring – 18 credits

- 3 Media Programming/COMM 112
- 3 Crit Analysis & Comp/LENG 112
- 3 Intro to Philosophy/LPHI 131
- 3 Scene Technology/THEA 112
- 3 Sacred Scriptures/LTHE 121
- 3 Intro to Theatre/THEA 111

#### Spring – 18 Credits

- 3 Foreign Language II
- 3 Theology II Series/LTHE
- 3 Cont. Issues in Media and Theatre/  
THEA 210
- 3 Voice and Diction/THEA 221
- 3 TV Production/COMM 211
- 3 TV/Radio Performance/COMM 230

#### Spring- 18 credits

- 3 Argumentation and Debate/SPCH 322
- 3 Math
- 3 Literature Series/LENG
- 3 Theatre Criticism THEA 421 or  
Media Ethics & Criticism/  
COMM 350
- 3 Design ONLY: Principles of Design/  
THEA 251 or Digital Graphics/  
COMM 356
- 3 Performance ONLY: Improvisation/  
THEA 340 (3 credits)

#### Spring – 14 credits

- 3 Senior Seminar and Thesis  
(LS Capstone)/THEA 400
- 3 Prod and Performance in Theatre/  
THEA 360-3
- 3 Design ONLY: Principles of Design/  
THEA 251 or Digital Graphics/  
COMM 356 (whichever was not  
taken as part of the Communication  
Arts Core)
- 3 Design ONLY: Production and Stage  
Management/THEA 354 or  
Puppetry / THEA 253

- 3 Performance ONLY: Principles of Play Directing/THEA 310 (3 credits)  
 5/2 Electives (Performance: 5 credits/ Design: 2 credits)

**TOTAL CREDITS: 128**

## THEATRE MINOR

Completion of the following 15 credits will satisfy the requirement for a minor in Theatre.

- 3 Introduction to Theatre/THEA 111  
 3 Scene Technology/THEA 112  
 3 Basic Acting or Directing/THEA 140, THEA 310  
 3 Issues in Theatre History/THEA 212  
 3 Analysis of Dramatic Literature/THEA 211

**TOTAL CREDITS: 15**

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## THEATRE – THEATRE DESIGN AND TECHNOLOGIES

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*(School of Communication and the Arts)*

SHAWN JEFFREY CLERKIN, *Program Director*

FACULTY: *Professor: Michael DeSanctis. Associate Professor: Shawn Jeffery Clerk. Assistant Professor: Jennifer Allen-Catellier, Frank Garland, Mary Carol Gensheimer. Instructors: David Blaetz, Anne O'Neill. Visiting Professor: Alaina Manchester. Adjunct Faculty: Jacki Vadney.*

### Program Description

If you have a passion for theatrical design or as a technical artist, then Gannon's theatre design and technologies program provides diverse and extensive experience in stage, costume, lighting, prop, and sound design in traditional and digital platforms, along with stage management, production and performance related courses. Here you can develop your technique and craft, learn to promote yourself as a professional artist/technician, for either professional employment of advanced studies in theatre. Students choose one of three tracks. Focus on scenic, lighting and sound design, arts/theatre management, or technical direction. Students can even create your own hybrid of courses to satisfy your personal interests. A community of artists produces more than fifty distinct performances, providing excellent and practical exposure to the job market. Many students have had the opportunity to explore international connections through participation in the International Collegiate Theatre Festival/Edinburgh (Scotland) Festival Fringe. Juniors and Seniors are eligible for professional internships with local theatres including the Erie Playhouse.

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## COURSE DESCRIPTIONS:

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### Theatre

#### THEA 111: Introduction to Theatre

A foundations course which specifically considers Theatre as a Liberal Art, focusing on theatre as a multi cultural phenomenon.

*3 credits*

#### THEA 112: Scene Technology

An examination of the technologies and practices of theatrical production. Emphasis is given to the interrelationship of the production team and the processes by which theatre is created.

*3 credits*

**THEA 140: Fundamentals of Acting**

A laboratory course exploring the fundamental craft of acting. Development of skills in creativity, improvisation, imagination, concentration, and text analysis. *3 credits*

**THEA 210: Contemporary Issues in Media and Theatre**

An introduction to academic theatre and media scholarship forming a critical foundation on which students can formulate opinions based on factual observation and argue various points of view relating to current production in theatre, radio, television, digital communication, and performance studies. This course is both writing intensive and argumentatively provocative. *3 credits*

**THEA 212: Issues in Theatre History**

An historiographical survey of the forces which have created theatrical forms. Emphasis on Aesthetic, Social, Political, and Economic influences. *3 credits*

**THEA 221: Voice and Diction**

A practical examination of the voice as a communicative tool. Emphasis on vocal flexibility, breathing, vocal expansion, and a working understanding of the phonetic alphabet. *3 credits*

**THEA 251: Principles of Design**

An exploration of the fundamental principles of design: space, time, composition, etc. Emphasis on creative problem solving and aesthetic development. *3 credits*

**THEA 252: Costume and Makeup Techniques**

This course is designed to introduce the student to the basic materials and techniques of theatrical stage makeup. Emphasis will be on basic application of two-dimensional makeup, analysis of character as it relates to physical appearance, the development of a makeup portfolio and morgue, and exposure to more advanced three-dimensional techniques. An examination of costume as part of the character mask completes the overview. *3 credits*

**THEA 253: Puppetry**

In this specialty design course, students examine the historical and cultural variations/styles of puppetry. In addition, they will practice puppetry and design construction, as well as manipulation of various styles of puppets, to gain a broad understanding of the art of the puppeteer. *3 credits*

**THEA 310: Principles of Play Directing**

A laboratory exploration of the directing process from play selection and analysis to rehearsal techniques. Emphasis on developing leadership qualities, communication skills, and aesthetic sensitivity.

Prerequisite: THEA 140 or THEA 251 or THEA 340 *3 credits*

**THEA 331: Writing for the Stage and Screen**

Practical writing experience at transferring ideas into written dramatic forms, including playwriting and critical writing. *3 credits*

**THEA 354: Production and Stage Management**

Students will examine how to manage a theatre and run a production from initial concepts to closing of the show, focusing on the business and management aspect of producing successful theatre and operating a professional theatre company. *3 credits*

**THEA 360-376: Production and Performance in Theatre**

A laboratory course investigating the rehearsal and performance process in creating a mainstage production. Students assume various roles, both on production crew and cast, and are evaluated on the quality of their participation in the work. The course culminates in public performance and post performance evaluation, by students and directors. *1 - 3 credits*

**THEA 390-399: Special Topics/Electives/Independent Study**

Specialty and elective courses offered on a rotating basis: Modern and Contemporary Drama

and Theatre, Stage Combat, Make-up and Costuming, Advanced Acting, Light Design, Theatre Management, Rehearsal and Performance, Musical Theater, etc. *1-3 credits*

#### **THEA 400: Senior Seminar and Thesis**

Prerequisite: COMM 350 or THEA 421, Senior status required. *3 credits*

#### **THEA 421: Theatre Criticism**

A capstone course focusing on ethical, moral, and aesthetic issues. Emphasis on both written and oral application of the principles of criticism to specific problems. *3 credits*

### **Theatre**

*(Numerals in front of courses indicate credits)*

Freshman	
<i>Fall – 18 credits</i>	
2	First-Year Seminar/COMM 161
3	College Composition/LENG 111
3	History Without Borders/LHST 111
3	Presentational Strategies/SPCH 115
3	Intro to Electronic Media/COMM 111
3	Fine Arts Series/LFIN 250-9
1	Practicum in Media and Theatre/ COMM 162
Sophomore	
<i>Fall – 16 credits</i>	
3	Foreign Language I (3 credits)
3	Philosophy II Series/LPHI (3 credits)
3	Fund of Acting/THEA 140 (3 credits)
3	Digital Audio Production/ COMM 241 (3 credits)
1	Practicum in Media and Theatre/ COMM 262 (1 credit)
3	Electives
Junior	
<i>Fall – 14 credits</i>	
3	Broadcast Copywriting/COMM 321
3	Theology/Philosophy III Series/ LTHE or LPHI
3	Production and Performance in Theatre/THEA 360-3
2	Leadership Seminar (2 credits)
3	Electives
Senior	
<i>Fall – 15 credits</i>	
3	LS Science
3	Social Science
3	Interpersonal Comm/SPCH 235
3	Design ONLY: Costume and Makeup Techniques/THEA 252
3	Performance ONLY: Advanced
<i>Spring – 18 credits</i>	
3	Media Programming/COMM 112
3	Crit Analysis & Comp/LENG 112
3	Intro to Philosophy/LPHI 131
3	Scene Technology/THEA 112
3	Sacred Scriptures/LTHE 121
3	Intro to Theatre/THEA 111
<i>Spring – 18 Credits</i>	
3	Foreign Language II
3	Theology II Series/LTHE
3	Cont. Issues in Media and Theatre/ THEA 210
3	Voice and Diction/THEA 221
3	TV Production/COMM 211
3	TV/Radio Performance/COMM 230
<i>Spring- 18 credits</i>	
3	Argumentation and Debate/SPCH 322
3	Math
3	Literature Series/LENG
3	Theatre Criticism THEA 421 or Media Ethics & Criticism/COMM 350
3	Design ONLY: Principles of Design/ THEA 251 or Digital Graphics/ COMM 356
3	Performance ONLY: Improvisation/ THEA 340 (3 credits)
<i>Spring – 14 credits</i>	
3	Senior Seminar and Thesis (LS Capstone)/THEA 400
3	Production and Performance in Theatre/THEA 360-3
3	Design ONLY: Principles of Design/ THEA 251 or Digital Graphics/

- |                                   |   |
|-----------------------------------|---|
| 3 Acting /THEA 350<br>3 Electives | COMM 356 (whichever was not taken as part of the Communication Arts Core)<br>3 Design ONLY: Production and Stage Management /THEA 354 or Puppetry /THEA 253<br>3 Performance ONLY: Principles of Play Directing /THEA 310 (3 credits)<br>5/2 Electives (Performance: 5 credits / Design: 2 credits) |
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## THEATRE MINOR

Completion of the following 15 credits will satisfy the requirement for a minor in Theatre.

- 3 Introduction to Theatre /THEA 111
- 3 Scene Technology /THEA 112
- 3 Basic Acting or Directing /THEA 140, THEA 310
- 3 Issues in Theatre History /THEA 212
- 3 Analysis of Dramatic Literature /THEA 211

TOTAL CREDITS: 15

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## THEATRE AND COMMUNICATION ARTS

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*(School of Communication and the Arts)*

*This is a hybrid program with shared coursework from the Theatre and the Communication Arts programs.*

SHAWN JEFFREY CLERKIN, *Program Director*

FACULTY: *Professor:* Michael DeSanctis. *Associate Professors:* Shawn Jeffery Clerkin. *Assistant Professors:* Jennifer Allen-Catellier, Frank Garland, Mary Carol Gensheimer. *Instructors:* David Blaetz, Anne O'Neill. *Visiting Professor:* Alaina Manchester. *Adjunct Faculty:* Jacki Vadney.

### Program Description

Some students know they are excellent communicators, excelling in plays and musicals or on their school newspaper or broadcasting (school radio and television or internet communication/blogging/social media). They are engaged in music performance, promotion and production. If you are one of those students who loves to connect with others, creating and interpreting messages that are shared and experienced by one to thousands, the Theatre and Communication Arts program can offer you unlimited possibilities for your future careers. Theatre and Communication skills are transferable to many paths. Our experienced faculty will help you to develop your creativity in a challenging and caring environment. The Theatre, Communication and Media world is exploding with opportunities and the School of Communication and the Arts prepares you to meet the future.

Juniors and Seniors are eligible for professional internships with the Erie Playhouse, the Erie Art Museum, local music outlets and advertising agencies.



## Theatre and Communication Arts Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN	
<i>Fall</i>	
2	First-Year Seminar/COMM 161
3	College Composition/LENG 111
3	History Without Borders/LHST 111
3	Presentational Strategies/SPCH 115
3	Intro to Theatre/THEA 111
3	Intro to Electronic Media/COMM 111
17	
SOPHOMORE	
<i>Fall</i>	
3	Foreign Language I
3	Philosophy II Series/LPHI
3	Acting/THEA 140
3	Voice & Diction/THEA 221
3	Digital Audio Production/COMM 241
3	Contemporary Issues/THEA 210
18	
JUNIOR	
<i>Fall</i>	
3	Broadcast Copywriting/COMM 321
3	Media Ethics and Criticism/ COMM 350 or Theatre Criticism/ THEA 421
3	Theology or Phil III Series/LTHE or LPHI
1	Leadership Seminar/COMM 240
3	Electives
3	Production & Performance In Theatre/THEA 360-376
16	
SENIOR	
<i>Fall</i>	
3	Media Management/COMM 341
3	LS Science
3	Electives
3	Social Science
3	Interpersonal Communication/ SPCH 235
15	
<i>Spring</i>	
3	Crit Analysis & Comp/LENG 112
3	Intro to Philosophy/LPHI 131
3	Scene Technology/THEA 112
3	Sacred Scriptures/LTHE 121
3	Electronic Media Prog/COMM 112
15	
<i>Spring</i>	
3	Foreign Language II
3	Theology II Series/LTHE
3	TV Production/COMM 211
3	Electives
3	TV Radio Performance/COMM 230
15	
<i>Spring</i>	
3	Corporate Video/COMM 330 or Principles of Play Directing/ THEA 310
3	Math
3	Electives
3	Literature Series/LENG
3	Digital Graphics/COMM 356
3	Argumentation Debate/SPCH 322
18	
<i>Spring</i>	
3	Senior Seminar and Thesis/ COMM 400 or THEA 400
8	Electives
3	Fine Arts Series
14	

**Total credits: 128**

## THEOLOGY

JAMES MENKHAUS, Ph.D., *Chairperson*

FACULTY: *Professors:* Michael E. DeSanctis, Terry Giles, Patrick F. O'Connell, Suzanne Richard. *Assistant Professors:* Sister Michele Healy, S.S.J., James Menkhaus, Rev. Casimir Wozniak. *Instructors:* Eric Dart, Rev. Jason Glover. *Adjunct:* Gary Harbaugh, Rev. Nicholas Rouch, Sister Charlotte Anne Zalot, O.S.B.

**Aims and Objectives:**

Saint Anselm of Canterbury defines Theology as "faith seeking understanding." Since a faith commitment is an essential part to the Gannon University learning community, it follows that a scientific and systematic investigation of that faith plays an important part in the intellectual life at Gannon.

With this in mind, the Theology Department offers several courses as part of the Liberal Studies Core. Each student is required first to take Introduction to Sacred Scriptures (LTHE 121). After successful completion of this course, the student is offered his or her choice of one of any of the Theology catalog offerings which vary from semester to semester. Furthermore, each student is required to take either Theology of Moral Responsibility (LTHE 227) or Philosophy of Ethical Responsibility (LPHI 237).

In addition, the Theology Department offers a sequence of courses enabling a student to major in the study of Theology or to take specialized Theology courses as an elective in his or her field of concentration. The Theology major at Gannon will find the program to be very thorough in Catholic Theology, thus enabling him or her to specialize in either Biblical Studies or Systematic Theology. The Theology major is required to complete at least 30 credits in Theology and, within the context of the capstone course (THEO 400) to write a thesis showing his or her competence in the field and the ability to do independent research, and to engage in a semester of experiential-learning in order to demonstrate his or her competence in practical theology.

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**COURSE DESCRIPTIONS:**

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**LTHE 121: Introduction to Sacred Scriptures**

A study of the Christian concept of God's self-revelation in the history of Israel and climatically in the person and redemptive work of Jesus Christ. **This course is a prerequisite for all Theology courses.**

**LTHE 223: The Catholic Tradition**

A study of some of the basic beliefs concerning Jesus Christ, the Church, worship and sacrament.

Prerequisite: LTHE 121

**LTHE 225: The Protestant Tradition**

A study of the development of Christianity with special emphasis on the Protestant Reformation and the thinking of significant contemporary Protestant theologians.

Prerequisite: LTHE 121

**LTHE 227: The Theology of Moral Responsibility**

A study of Christian ethical response based on God's word in Revelation and in the teachings of the believing Community.

Prerequisite: LTHE 121

**LTHE 228: Vatican II and the Catholic Tradition**

A study of the historical, social, and theological dimensions of Vatican II and the ongoing process of Vatican II's reception in the life of the Roman Catholic Church, the ecumenical community, and the world.

*3 credits*

**LTHE 255: The Jesuit Tradition: Ignatius to Pope Francis**

A study of some of the basic Catholic beliefs concerning Jesus Christ, the Church, worship and sacrament through an Ignatian (Jesuit) lens.

Prerequisite: LTHE 121

*3 credits*

**LTHE 265: Good & Evil: Reconciling the Holocaust**

Students will examine the reality of the holocaust from multiple historical perspectives and

will integrate this knowledge with theological inquiry. In May, faculty and students will travel to Poland and Prague (the Czech Republic).

Prerequisite: LTHE 121

*3 credits*

### **THEO 240: Faith, Revelation and Theology**

An investigation of the nature and methods of the science of Theology, with a study of the phenomenon of faith, of Revelation, and of Biblical and Magisterial hermeneutics. *3 credits*

### **THEO 320: Hebrew Bible I: Torah**

The Hebrew Bible/Old Testament is constructed in three large sections or movements. This course considers the first part of the Hebrew Bible: the Torah. Composed of the first five books of the Old Testament, the Torah introduces the major concepts and themes that will be developed throughout the rest of the bible. *3 credits*

### **THEO 321: Hebrew Bible II: Prophets**

The second part of the Hebrew Bible/Old Testament is composed of two great bodies of literature: the Former Prophets (telling the story of the ancient Israelite nation) and the Later Prophets (those towering figures like Isaiah, Jeremiah, and the Twelve). These two great bodies of literature are united by a common interest in social justice and God's work in the human arena. *3 credits*

### **THEO 322: Hebrew Bible III: Writings**

The writings are the third and final part of the Hebrew Bible/Old Testament and include books that are familiar (Psalms) as well as those that are less familiar to the modern western reader (Ecclesiastes, Ezra). The material considers basic human experiences of grief, sorrow, and joy as well as exploring the meaning of evil and tragedy and everyday human realities like friendship, sexuality, and character. In many ways, this third part of the Hebrew Bible functions as a capstone. *3 credits*

### **THEO 333: The Synoptic Gospels**

A study of the first three Gospels, their origin and composition, and their distinctive theological content. *3 credits*

### **THEO 334: The Theology of John and Paul**

A study of the two great theologians of the New Testament, St. John and St. Paul. *3 credits*

### **THEO 342: Jesus Christ: Yesterday, Today and Forever**

A consideration of the question, "Who is Jesus of Nazareth?", and a study of the answers to that question presented by the Scriptures, ecclesiastical tradition and classic and contemporary theology. *3 credits*

### **THEO 344: The Theology of Church**

A study of the origins, nature, structure and role of the Church, with special emphasis on the theological insights of the II Vatican Council. *3 credits*

### **THEO 345: The Theology of Worship**

A study of Christian worship in its christological, ecclesial and sacramental dimensions. *3 credits*

### **THEO 346: Women and the Pilgrim Church**

A study of women's contribution in Scripture, Theology, and the Church from the Church's origins to contemporary times. *3 credits*

### **THEO 347: The Theology of Marriage**

This course is a study of the Judeo-Christian understanding of marriage in its various aspects: biblical, theological, psychological, and canonical. It will concentrate on the following topics: defining marriage, God and marriage, marriage preparation, and issues surrounding marriage today. *3 credits*

### **THEO 350: Current Problems in Moral Theology**

A presentation of principles of Christian moral theology as revealed in Sacred Scriptures and

the Tradition of the community of believers. The principles, in turn, will be applied to specific and concrete moral issues raised by contemporary culture and society that are confronting the individual and social conscience of the human community so as to suggest an appropriate Christian response. 3 credits

**THEO 355: Catholic Social Teaching Immersion**

A study of Catholic Social Teaching derived from Sacred Scripture, the Catholic Tradition, and contemporary teachings. Students will apply this knowledge by encountering the poor and marginalized in a specific context. Through the experience, students will learn why Catholic social teaching is an important part of the Church's history and future. Specific course content will vary based on the immersion destination.

**THEO 361: Christianity and World Religions: Western Traditions**

This course will consider the teachings of the monotheistic world religions (Christianity, Judaism, Zoroastrianism, Islam) in the context of Christian belief, emphasizing both the openness of a post-conciliar Catholicism to insights from other faiths, points of similarity in beliefs and in practice between Christianity and other religions, and also the distinctiveness of other religious traditions. 3 credits

**THEO 362: Christianity and World Religions: Eastern Traditions**

This course will consider the teachings of the South and East Asian world religions, as well as primal (pre-literate) religions, in the context of Christian belief, emphasizing both the openness of a post-conciliar Catholicism to insights from other faiths, points of similarity in beliefs and in practice between Christianity, and other religions, and also the distinctiveness of other religious traditions. 3 credits

**THEO 390-394: Special Topics**

*1-3 credits*

**THEO 395-399: Independent Study**

*1-3 credits*

**THEO 400: Senior Seminar**

A research seminar of faculty and senior majors.  
(Required of all senior majors)

*3 credits*

**Theology Curriculum**

*(Numerals in front of courses indicate credits)*

FRESHMAN		
<i>Fall</i>		<i>Spring</i>
2	First-Year Seminar	3 Crit Analysis & Comp/LENG 112
3	College Composition/LENG 111	3 Protestant Tradition/LTHE 225
3	Sacred Scriptures/LTHE 121	3 Catholic Tradition/LTHE 223
3	Foreign Language	3 Foreign Language
3	Mathematics	3 Social Science
3	History Without Borders/LHST 111	
17		15
SOPHOMORE		
<i>Fall</i>		<i>Spring</i>
3	Introduction to Philosophy/LPHI 131	3 Philosophy of Knowledge/ LPHI 235
3	Literature Series/LENG	3 Philosophy of Ethical Responsibility/LPHI 237
3	Science	3 Hebrew Bible/THEO 320, 321 or 322
3	Public Speaking/SPCH 111	3 Humanities Elective
3	Humanities Elective	1 Leadership Seminar
3	Faith, Revelation, Theology/ THEO 240	3 Free Elective
18		16

JUNIOR	
<i>Fall</i>	
3	Philosophy of God/LPHI 233
3	Fine Arts Series/LFIN
3	Synoptic Gospels/THEO 333
3	Theology of Moral Responsibility/ LTHE 227
3	Theology of Church/THEO 344
3	Humanities Elective
18	
SENIOR	
<i>Fall</i>	
3	Senior Seminar/LBST 383
3	Christology/THEO 342
3	Theology of Worship/THEO 345
3	Women in the Pilgrim Church/THEO 346
3	Theology Elective
15	
<i>Spring</i>	
3	Theology of John and Paul/ THEO 334
3	Christianity and World Religions/ THEO 361 or THEO 362
3	Theology Elective
3	Humanities Elective
3	Free Elective
15	
<b>Total credits: 128</b>	

Humanities and Free Electives include Education, Philosophy, Sociology, History, Political Science, Classical Languages, Language and Literature, English, Economics, and Natural Sciences. A total of 26 credit hours in the Electives is required.

### Theology Minor

This program is an ideal preparation for admission to some graduate programs and for anyone who plans on leadership roles in parish life or just personal enrichment. The minor consists of 18 credits and can usually fit in easily with the student's major.

Required:

- 3 Sacred Scriptures/LTHE 121
- 3 The Catholic Tradition/LTHE 223 or The Protestant Tradition/LTHE 225
- 3 Christianity and World Religions Western Tradition/THEO 361 or Christianity and World Religions Eastern Tradition/THEO 362 or Faith, Revelation and Theology/THEO 240
- 9 9 credits of upper level Theology courses.

### ARCHAEOLOGY AND CULTURE MINOR

For a description see The Archaeology and Culture section in this catalog.

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## WOMEN'S STUDIES MINOR

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CAROLYN BAUGH, Ph.D., *Program Director*

The minor in Women's Studies is an interdisciplinary field of inquiry that encourages students to understand and articulate how gender makes a difference - in the lives and experiences of women, as well as men; in the practices and institutions of human societies; and in the cultural products of societies, such as art and literature. Emphasizing the importance of historical and cross-cultural perspectives, students in the minor will critically examine the intersections of gender, class, race, ethnicity, sexual orientation, age, and ability to make visible structures of power that otherwise remain hidden.

### Curriculum Outline

A minor in Women's Studies will consist of 18 credits.

Required: (6 credits)

- 3 Introduction to Women's Studies/WMST 201
- 3 Gender and Rationality/LBST 383

Electives: (12 credits)

- 3 Women and Crime/CRJS 340
- 3 American Military History: Women and War/HIST 282
- 3 Women in Middle Eastern History/HIST 390
- 3 Women Writers/LENG 249
- 3 Women in Photography/LFIN 252
- 3 Women and Philosophy/LPHI 235
- 3 Psychology of Women/PSYC 275
- 3 Physical Activity and Women/SPRT 326
- 3 Women and the Pilgrim Church/THEO 346
- 3 Special Topics in Women's Studies/WMST 390-391

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## COURSE DESCRIPTIONS

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### **WMST 201: Introduction to Women's Studies**

An interdisciplinary course that explores the diversity of women's lives through essays, readings, and the study of scholarly theories and research. The course will examine a wide range of social issues and the status of women in an historical context and in contemporary society.

Prerequisite: Open to sophomore, junior or senior students or instructor's permission.

*3 credits, Fall*

### **WMST 390: Special Topics in Women's Studies**

Courses may include: Gender and Identity in Literature; and Women in Science.

Prerequisite: WMST 201 (Introduction to Women's Studies) or permission of the professor

*3 credits*

# Morosky College of Health Professions and Sciences

KRISTINE LEGTERS, PT, DSc, NCS, *Interim Dean*

The Morosky College of Health Professions and Sciences is composed of the School of Health Professions and the School of Sciences. The curriculum offered by each program within the college is designed to prepare students upon graduation to meet professional responsibilities in their field of learning or to pursue graduate studies. Students are engaged in active learning. They learn by working with the faculty — in the classroom, in research endeavors, in professional practice settings, in industry, and in the community. All of the programs within the college build upon the mission of Gannon University and provide the foundation for life-long learning.

## BIOCHEMISTRY

WESLENE TALLMADGE, Ph.D., *Chairperson*

### Aims and Objectives:

Biochemistry is the study of the chemical composition and reactions within living systems. The Bachelor of Science in Biochemistry major is designed for students who enjoy the study of chemistry, but prefer to focus study on the biological chemistry facet. The students within the biochemistry major will take specific courses directing their study to the interface of biology and chemistry. The biochemistry major will have a strong fundamental background in chemistry with an emphasis on specific biology course work, plus a foundation in physics and mathematics. Successful graduates may enter full time employment, graduate research programs in chemistry/biochemistry or professional schools, such as medical, pharmacy and dentistry.

### Biochemistry Curriculum

(Numerals in front of the courses indicate credits)

Fall		Spring	
3	College Composition/LENG 111	3	Critical Analysis & Composition/LENG 112
4	General Chemistry I and Lab/CHEM 111 & 112	4	General Chemistry II and Lab/CHEM 114 & 115
3	Calculus I/MATH 140	3	Sacred Scriptures/LTHE 121
4	Mol. & Cell. Biology and Lab/BIOL 122 & BIOL 123	3	Calculus II/MATH 141
2	First Year Seminar	4	Animal Form and Function and Lab/BIOL 124 & 125
16		17	
Fall		Spring	
4	Organic Chemistry I and Lab/CHEM 221 & 222	4	Organic Chemistry II and Lab/CHEM 224 & 225
4	Fundamentals of Physics 1 & Lab/PHYS 210 & 211	4	Fundamentals of Physics 2& Lab/PHYS 212 & 213
3	History without Borders/LHST 111	3	Literature Series/LENG

3	Introduction to Philosophy/LPHI 131	4	Genetics and Lab/BIOL 345 & 346
3	SPCH 111 or SPCH 113		
17		15	

*Fall*

4	Organic Chemistry III & Lab/ CHEM 323 & 324
4	Physical Chemistry I & Lab/ CHEM 331 & 332
4	Structural Biochemistry and Lab/ CHEM 366 & 367
3	Theology II Series/LTHE
3	Philosophy II Series/LPHI
18	

*Fall*

3	Fine Arts/LFIN
1	Undergraduate Research
1	General Electives
3	Inorganic Chemistry/CHEM 361
2	Computational Chemistry/CHEM 414
3	Biochemical Pathways/CHEM 368
13	

*Spring*

1	Leadership Seminar
5	Intro to Modern Anal Chemistry & Lab/CHEM 336 & 337
1	Chemical Literature/CHEM 356
3	Theology or Philosophy III Series/LTHE or LPHI
4	Cellular Biochemistry and Lab/ BIOL 373 & 374
3	Applied Statistics/MATH 213
17	

*Spring*

3	Senior capstone/ LBST 383
1	Undergrad Research BIO or CHEM
4	Chemistry or Biology Electives*
4	Cell Biology and Lab/ BIOL 375 & 376
3	Social Science
15	

\*Must be CHEM courses from levels 200, 300 and 400, or BIOL 126 & 127, BIOL 331 & 332, or BIOL 358 & 359.

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## BIOLOGY DEPARTMENT

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### BIOLOGY

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GREGORY M. ANDRASO, Ph.D., *Chairperson*

**FACULTY:** *Professors:* Gregory M. Andraso, Michael Ganger, Elisa M. Konieczko, Edward (Ted) Phillips, Robert S. Rawding, Steven J. Ropski, Mary C. Vagula. *Associate Professors:* Sarah J. Ewing. *Assistant Professors:* Quyen Aoh, Christopher Dempsey, Kelly A. Grant, Narveen Jandu, He Liu, Catherine Mattinson. *Instructors:* Tara Allison, Renee Foradori, Michelle Kuns, Melanie Gustafson-Ropski.

#### Aims and Objectives:

The Biology Department is an academic community of faculty members and students engaged in the responsible pursuit and communication of biological knowledge. We provide students with a diverse curriculum to explore and study life in the classroom, laboratory, and field. We offer students a wide range of opportunities to acquire the knowledge and skills necessary to become competitive and excel in their chosen fields. Faculty members within the Biology Department work one-on-one with their advisees to guide their academic progress and advancement toward their individual career goals.

Students can major in **Biology, Freshwater and Marine Biology, or Biology-Secondary Education**. Students have the option to minor in Biology.

Biologists study living organisms and their life processes. They are concerned with the origin,



function, and preservation of life, from the smallest cell to the largest ecosystem. Students with a degree in **Biology** can continue their education to pursue careers in research or medicine, or students can gain employment in industry, non-profit organizations, or government agencies with their knowledge of the biological sciences. Students with a degree in **Freshwater and Marine Biology** can continue their education or gain employment in fields dedicated to understanding, monitoring, and restoring water resources and the organisms that inhabit them. Students who complete their degree in **Biology-Secondary Education** can pursue a career teaching biology in secondary schools.

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## COURSE DESCRIPTIONS:

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**Courses numbered BIOL 101 - BIOL 118, BIOL 140, and BIOL 191 may not be used to fulfill the requirements for a Biology major.**

### **BIOL 100: First-Year Seminar: Scientific Reasoning and Biology**

The First-Year Seminar serves the new student as an introduction to Gannon University through a unique and challenging learning experience. While each section of the First-Year Seminar course focuses on different content, each has as its intentions: the forging of the relationship between the new student and the Gannon community, the development of the integration of the academic, social, personal, and spiritual aspects of each student's life, and the animation of the tenets of Catholic social teaching in daily life and work.

In addition to the general goals inherent in each First Year seminar, BIOL 100 provides the student with the opportunity to examine the process of scientific reasoning and analysis, to review career options in the field of biology, to consider how one can merge the philosophies of science and the humanities, and how one can reconcile the empirical disciplines of the sciences with the spiritual aspects of faith based learning.

*2 credits, Fall*

### **BIOL 101: General Biology**

This course is for the nonbiology major dealing with general biological principles and brief surveys of the plant and animal world including some laboratory exercises and demonstrations.

*3 credits, Fall*

### **BIOL 103: Environmental Issues**

This course is a study of our environment and some of the interactions between humans and their surroundings. The course analyzes through an interdisciplinary approach how humans and their social institutions interact with physical and biological systems of the environment. The course surveys the most urgent environmental health problems facing humanity today.

*3 credits, Fall, Spring*

### **BIOL 104: Human Biology**

This course is designed to introduce students to some of the many complex, yet fascinating, processes of the human body. The course begins with a review of basic principles of chemistry. This introduction is followed by a limited discussion of cellular structure and metabolism. Subsequently, the basic structure and functions of selected organ systems are discussed. The course introduces students to some of the newer advances in medical and research technologies that are impacting our society, e.g. cloning, recombinant DNA technology, genetic engineering, stem cell research, and gene therapy. Students will also learn about the influences of globalization on human health.

*3 credits, Fall, Spring*

### **BIOL 105: Human Biology Lab**

Lab exercises complement topics in BIOL 104.  
Concurrent with BIOL 104.

*1 credit, Fall, Spring*

### **BIOL 106: Introductory Microbiology**

This course covers basic morphological and behavioral characteristics of microorganisms (bacteria, fungi, prions, viruses, and protozoa) predominately associated with humans. Topics expand over microbial affiliations with different diseases, epidemiology, pathology and

control. Additionally, an introduction to applied microbiology will be discussed.

Concurrent with BIOL 107.

*3 credits, Fall, Spring*

**BIOL 107: Introductory Microbiology Lab**

This course consists of labs which complement topics taught in BIOL 106.

Concurrent with BIOL 106.

*1 credit, Fall, Spring*

**BIOL 108: Essentials of Anatomy and Physiology I**

This course is a survey of anatomy and physiology of the human body. The first semester covers basic principles of biochemistry, metabolism, information processing, the cell, and the tissues. This leads to consideration of these body systems: integumentary, skeletal, muscular, nervous and endocrine.

Concurrent with BIOL 109.

*3 credits, Fall*

**BIOL 109: Essentials of Anatomy and Physiology I Lab**

This course consists of labs which complement topics taught in BIOL 108.

Concurrent with BIOL 108.

*1 credit, Fall*

**BIOL 110: Essentials of Anatomy and Physiology II**

This is a continuation of BIOL 108 and covers structure and function of the cardiovascular, respiratory, immune, digestive, and excretory systems. It concludes with a unit on reproduction and development.

Concurrent with BIOL 111.

Prerequisite: (BIOL 108, BIOL 109) or (BIOL 115, BIOL 116).

*3 credits, Spring*

**BIOL 111: Essentials of Anatomy and Physiology II Lab**

This course consists of labs which complement topics taught in BIOL 110.

Concurrent with BIOL 110.

Prerequisite: (BIOL 108, BIOL 109) or (BIOL 115, BIOL 116).

*1 credit, Spring*

**BIOL 115: Human Anatomy and Physiology I**

This is the first course in a two-semester sequence examining the integrated structure and function of the human body. After introducing the student to anatomical nomenclature, chemical and physiological principles, the course follows a systems approach to the understanding of cell chemistry, cells and tissues, and the integumentary, musculoskeletal, and nervous systems.

Concurrent with BIOL 116.

*3 credits, Fall, Spring*

**BIOL 116: Human Anatomy and Physiology I Lab**

This course includes laboratory exercises to compliment topics taught in BIOL 115.

Concurrent with BIOL 115.

*1 credit, Fall, Spring*

**BIOL 117: Human Anatomy and Physiology II**

This second course in a two-semester sequence completes the integrated study of the structure and function of the human body. It explores the endocrine, circulatory, lymphatic, respiratory, digestive, urinary and reproductive systems. Emphasis is placed on the interrelationships of these systems with the integrative and control functions of the nervous and endocrine systems.

Concurrent with BIOL 118.

Prerequisite: BIOL 115, BIOL 116.

*3 credits, Fall, Spring*

**BIOL 118: Human Anatomy and Physiology II Lab**

This course includes laboratory exercises to compliment topics taught in BIOL 117.

Concurrent with BIOL 117.

Prerequisite: BIOL 115, BIOL 116.

*1 credit, Fall, Spring*

**BIOL 122: Molecular and Cellular Biology**

This course is designed to introduce the student to certain aspects of cell structure and

function, genetics, and molecular biology. This course, together with BIOL 124 and 126, provides the student with a firm foundation upon which the specialized courses can be built. Concurrent with BIOL 123. *3 credits, Fall, Spring*

**BIOL 123: Molecular and Cellular Biology Lab**

This course provides the student with laboratory experiences in which topics covered in BIOL 122 lecture are studied in an experimental fashion. Concurrent with BIOL 122. *1 credit, Fall, Spring*

**BIOL 124: Animal Form and Function**

This course begins with a survey of several animal kingdom phyla (e.g. Porifera Cnidaria, Platyhelminthes, Annelida, Arthropoda Echinodermata Chordata). A functional approach is then taken to understand the major organ systems in animals, emphasizing the vertebrates. Concurrent with BIOL 125. Prerequisite: A grade of D or better in BIOL 122-123. *3 credits, Fall, Spring*

**BIOL 125: Animal Form and Function Lab**

This course complements BIOL 124 lectures by giving the student a chance to experimentally investigate the anatomy and functions of some organ systems in animals. Concurrent with BIOL 124. Prerequisite: A grade of D or better in BIOL 122-123. *1 credit, Fall, Spring*

**BIOL 126: Ecosystem Biology and Evolution**

This course introduces principles pertaining to the evolution, ecology and behavior of diverse life forms, including the classification and characterization of all life kingdoms, with special emphasis on plants. Concurrent with BIOL 127. Prerequisite: A grade of D or better in BIOL 122-125. *3 credits, Fall, Spring*

**BIOL 127: Ecosystem Biology and Evolution Lab**

This course compliments the topics of BIOL 126 through experimentation. Concurrent with BIOL 126. Prerequisites: A grade of D or better in BIOL 122, 125. *1 credit, Fall, Spring*

**BIOL 140: Introduction to Aquatic Science**

This course explores the major ecological theories and principles dominating the fields of stream ecology, limnology, and marine biology. Topics include the abiotic properties and processes that affect organismal distribution and abundance across aquatic ecosystems, adaptations of aquatic organisms in response to abiotic and biotic evolutionary pressures in these ecosystems, and the ecological roles that organisms have in aquatic ecosystems. The importance of aquatic ecosystems and their associated taxa to humans, and how human activities can alter the properties and functions of these important ecosystems are also discussed. Prerequisite: ENV 120. *3 credits, Spring*

**BIOL 191: Special Topics**

Instructor permission required. *1-3 credits*

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**Note about Prerequisites: Courses numbered 200 or above have a prerequisite of at least 8 credits of biology. Additional prerequisites are indicated.**

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**BIOL 220: Botany**

This course is a general survey of the plant kingdom. It examines the anatomy, physiology, reproduction, cytology, and taxonomy of the plants with a special emphasis on the flowering plants. Topics include germination, development, mineral nutrition, water relations, plant hormones, and environmental physiology. Prerequisites: BIOL 122-127. *3 credits, Fall*

**BIOL 221: Botany Laboratory**

This laboratory emphasizes plant identification and classification. The laboratories have an outdoor component.

Concurrent with BIOL 220.

Prerequisites: BIOL 122-127.

*1 credit, Fall*

**BIOL 223: Invertebrate Zoology**

This course explores the taxonomic, morphological, and physiological diversity of invertebrate animals. It also emphasizes the ecological roles of invertebrates.

Prerequisites: BIOL 122-127.

*3 credits, Spring*

**BIOL 224: Invertebrate Zoology Lab**

This course emphasizes the classification and morphology of invertebrate animals.

Concurrent with BIOL 223.

Prerequisites: BIOL 122-127.

*1 credit, Spring*

**BIOL 232: Human Genetics**

This course is intended to provide a broad exposure to introductory genetics, the study of inherited variation, and emphasizes human heredity and development. The course encompasses the fundamental principles of molecular, transmission, and population genetics. Basic cytogenetics topics and clinical aspects of selected heritable diseases are also discussed.

Prerequisites: Physician Assistant (PA) Major, BIOL 122-125.

*3 credits, Spring*

**BIOL 265: Genetics**

This introductory course deals with the principles of variation in prokaryotes and eukaryotes, with special reference to humans. Students will be introduced to Mendelian genetics, cytogenetics, molecular genetics, genomics, and some introductory aspects of biotechnology.

Co-requisite: BIOL 266

Prerequisites: BIOL 122-127, CHEM 111, CHEM 114

*3 credits, Fall, Spring*

**BIOL 266: Genetics Lab**

This is an introductory laboratory course in genetics that surveys topics and procedures in classical and modern genetics. This course covers the use of model organisms, DNA technology and bioinformatics to study transmission and molecular genetics. Its main goal is to reinforce and apply the concepts presented in the lecture. In addition, students practice scientific writing.

Co-requisite: BIOL 265

Prerequisites: BIOL 122-127, CHEM 111, CHEM 114

*1 credit, Fall, Spring*

**BIOL 290: Research Methods in Biology**

This course is designed to introduce students to fundamental research methods in biology. Students learn the principles of laboratory techniques used in the fields of molecular biology, cell biology and biochemistry. In addition, students learn common research methods in bioinformatics and biostatistics using software tools. Topics in experimental design, scientific data presentation, the peer-review process, and research ethics are also discussed.

Prerequisite: BIOL 122-125.

*3 credits, Spring*

**BIOL 292: Comparative Vertebrate Anatomy**

This course is a study of vertebrate structure, its functional significance, and the range of variation in structure and function in different species from an evolutionary viewpoint.

Concurrent with BIOL 293.

Prerequisites: BIOL 122-127.

*2 credits, Spring*

**BIOL 293: Comparative Vertebrate Anatomy Lab**

This laboratory course complements and strengthens concepts covered in BIOL 292 through dissections of representative vertebrates.

Concurrent with BIOL 292.

Prerequisites: BIOL 122-127.

*2 credits, Spring*

**BIOL 298: Principles of Ecology**

This course is a study of plants and animals in relationship to their environment. Basic ecological principles such as structure and function of the ecosystem as illustrated by energy flow, nutrient cycling, environmental influences, and producer-consumer-decomposer relationships are discussed. Selected topics on population ecology, human ecology, and special topics or current environmental problems and worldwide issues are also introduced.

Prerequisites: BIOL 122-127.

*3 credits, Spring*

**BIOL 299: Ecology Lab**

The Ecology laboratory is designed to demonstrate basic ecological concepts discussed in lecture. Concurrent with BIOL 298.

Prerequisites: BIOL 122-127.

*1 credit, Spring*

**BIOL 302: Animal Behavior**

This course is a study of the mechanisms and evolution of behavior in a variety of animal taxa. The course examines interactions among the environment, genetics, the endocrine system, and the nervous system in the development of behavior. It also addresses the current adaptive value of various behaviors and considers how natural selection may have altered behaviors in the past.

Prerequisites: BIOL 122-127.

*3 credits, Fall*

**BIOL 307: Vertebrate Embryology**

This course compares the early embryonic development of amphibian, avian, and mammalian embryos and places special emphasis on human organogenesis.

Concurrent with BIOL 308.

Prerequisites: BIOL 122-127.

*3 credits, Fall*

**BIOL 308: Vertebrate Embryology Lab**

Concurrent with BIOL 307.

Prerequisites: BIOL 122-127.

*1 credit, Fall*

**BIOL 320: Histology**

This course deals with the cellular ultrastructure and microscopic anatomy of the tissues and organs comprising the human body.

Concurrent with BIOL 321.

Prerequisites: BIOL 122-127.

*3 credits, Spring*

**BIOL 321: Histology Lab**

Concurrent with BIOL 320.

Prerequisites: BIOL 122-127.

*1 credit, Spring*

**BIOL 323: Wildlife Management**

This course deals with basic management strategies, including the potential human role in using and benefiting from the preservation and management of the world's wildlife resources.

Prerequisites: BIOL 122-127 and BIOL 298 or concurrent.

*3 credits, Spring; to alternate with BIOL 325*

**BIOL 324: Wildlife Management Lab**

This course deals with techniques of managing wildlife populations.

Concurrent with BIOL 323.

Prerequisites: BIOL 122-127, BIOL 298 or concurrent.

*1 credit, Spring*

**BIOL 325: Vertebrate Zoology**

This course deals with vertebrate evolution, systematics, zoogeography, and physiological adaptations to specific environments.

Prerequisites: BIOL 122-127.

*3 credits, Spring; to alternate with BIOL 323*

**BIOL 326: Vertebrate Zoology Lab**

This course acquaints the student with Pennsylvania vertebrates, including their taxonomy, ecology and distribution.

Concurrent with BIOL 325.

Prerequisites: BIOL 122-127.

*1 credit, Spring*

**BIOL 331: Microbiology**

The course explores basic traits of microorganisms (bacteria, viruses, fungi, algae and protozoa) with an emphasis on bacterial structure, communication, physiology (catabolic and anabolic pathways), genetics and growth. Additional topics include microbial associations with medicine, pathogenesis, bioremediation and biotechnology.

Prerequisites: BIOL 122-127.

*3 credits, Fall, Spring*

**BIOL 332: Microbiology Lab**

This lab involves the use of differential stains with microscopy enabling microbial visualization. Students are taught how to identify with molecular confirmation unknown microorganisms through the performance of multiple physiological tests. Additionally, an introduction to experiments performed in biotechnology and medical laboratory science are covered.

Concurrent with BIOL 331.

Prerequisites: BIOL 122-127.

*1 credit, Fall, Spring*

**BIOL 336: Clinical Microbiology**

The appropriate methods for complete microbiological examination of clinical specimens is reviewed in lecture and presented in the laboratory. Procedures for the isolation and identification of bacteria, fungi, and viruses are taught. Emphasis is given to those organisms most commonly found in human infection.

Prerequisite: BIOL 122-127, 331-332.

*2 credits*

**BIOL 337: Clinical Microbiology Lab**

Concurrent with BIOL 336.

Prerequisites: BIOL 122-127, 331-332.

*2 credits*

**BIOL 338: Immunology**

This course is designed to introduce students to the structure and function of the immune system. Course content begins with a discussion of the molecular and cellular components involved in the elicitation of the immune response, e.g. antigen receptors, MHC molecules, antibodies, and cytokines. Subsequent discussion includes the role of the immune system in the defense against infectious agents and cancer, immunodeficiencies, hypersensitivities, organ transplantation, and autoimmune disease.

Concurrent with BIOL 339.

Prerequisites: BIOL 122-125, 331-332 or permission of the instructor.

*3 credits, Spring*

**BIOL 339: Immunology Lab**

The lab is designed to emphasize some of the basic immunological principles that are discussed in lecture. Students are also introduced to some of the immunologically-based techniques routinely utilized in research and diagnostic laboratories (e.g. immunodiffusion, ELISA, immunoprecipitation, immunoelectrophoresis, RT-PCR, western blot and tissue culture techniques).

Concurrent with BIOL 338.

Prerequisites: BIOL 122-125, 331-332.

*1 credit, Spring*

**BIOL 340: Aquatic Microbiology**

This course is designed to study the interrelationships among micro-organisms, phytoplankton, aquatic plants, and the animals of aquatic systems. Cycling of elements in bodies of water is emphasized.

Prerequisites: BIOL 122-127, 331-332.

*3 credits*

**BIOL 341: Aquatic Microbiology Lab**

Concurrent with BIOL 340.

Prerequisites: BIOL 122-127, 331-332.

*1 credit*

**BIOL 344: Virology**

This course is designed to expose students to the basic fundamentals (morphology, life cycles and host interactions) and advanced topics of viruses associated with human diseases. These topics focus on selected viruses and discuss their disease associations, epidemiology, vaccines, unique viral life cycles, host evasion techniques and control. Course topics also include viral gene therapy and emerging diseases.

Prerequisites: BIOL 122-127, BIOL 331, 332, CHEM 221-222.

*3 credits, Spring*

**BIOL 347: Developmental Biology**

This class offers a broad survey of topics in molecular developmental biology. Topics include fertilization, induction, signal transduction, gastrulation, neural development, and environmental effects on development. In addition, topics that are less intuitively associated with developmental biology such as metamorphosis, aging, and regeneration are also discussed.

Prerequisites: BIOL 122-127, 345.

*3 credits, Fall*

**BIOL 348: Developmental Biology Lab**

Laboratory experiences reinforce the topics covered in Developmental Biology lecture.

Topics include fertilization, induction, signal transduction, and environmental effects on development.

Concurrent with BIOL 347.

Prerequisites: BIOL 122-127, 345.

*1 credit, Fall*

**BIOL 350: Biogeochemistry**

Biogeochemistry is the study of the exchange of energy and elements between the biosphere and geosphere. This course examines principal biogeochemical cycles including the hydrological, carbon, sulfur, and nitrogen cycles. Focus is placed on both the micro-scale underpinnings of these cycles and the global implications of the processes.

Prerequisites: CHEM 224-225.

*3 credits*

**BIOL 354: Parasitology**

This course is concerned with organisms which live on or in other organisms, and which depend on their hosts for some essential metabolic factor. Life cycles, behavior and treatment, and control of parasites are discussed. Recommended for students concentrating in the health sciences.

Prerequisites: BIOL 122-127.

*3 credits, Spring*

**BIOL 355: Parasitology Lab**

The lab is designed to familiarize students with the identification and morphology of parasites. Required for students in Medical Laboratory Science.

Concurrent with BIOL 354.

Prerequisites: BIOL 122-127.

*1 credit, Spring*

**BIOL 358: Plant Physiology**

This course is intended to provide a broad exposure to plant physiology, the study of plant function. The role of internal and external regulators of plant growth and development will be explored. An attempt is made to couple plant responses with molecular mechanisms. Important plant biochemical pathways are also covered.

Prerequisites: BIOL 122-127, CHEM 221.

*3 credits, Spring*

**BIOL 359: Plant Physiology Lab**

Current and classical techniques of experimental plant physiology are performed.

Concurrent with BIOL 358.

Prerequisite: BIOL 122-127, CHEM 221.

*1 credit, Spring*

**BIOL 363: Endocrinology**

Endocrinology, the study of hormones, is presented with an emphasis on neural-endocrine interactions, hormone-receptor interactions, mechanisms of hormone action, metabolism, a survey of the major endocrine tissues and glands, and reproductive physiology. Case studies are also integrated into the course.

Prerequisite: BIOL 122-125, 368-369.

*3 credits, Fall*

**BIOL 365: Human Gross Anatomy**

This course uses a regional approach to study the human body.

Concurrent with BIOL 366.

Prerequisites: BIOL 122-125.

*3 credits, Fall, Spring*

**BIOL 366: Human Gross Anatomy Lab**

This course compliments and enhances the human gross anatomy lecture course. Dissection of human cadavers by students is a key component of the course. In addition, learning is facilitated through the use of anatomical models and prosected human cadavers.

Concurrent with BIOL 365.

Prerequisites: BIOL 122-125.

*1 credit, Fall, Spring*

**BIOL 368: Animal Physiology**

This course deals with the normal functioning of the body (primarily human body) and its component parts. The essential concepts of physiology are presented at various levels or organization, from cellular to organ system level with special emphasis on the understanding of homeostasis and integrated regulations of various body processes among several systems. Specifically the course focuses on physiological mechanisms involved in neuronal and chemical signaling, movement, metabolism, respiration, circulation, excretion, etc.

Concurrent with BIOL 369.

Prerequisites: BIOL 122-125.

*3 credits, Fall, Spring*

**BIOL 369: Animal Physiology Lab**

The principles and concepts learned in lecture class are reinforced through hands on experience in this course. The experiments in this course are designed to help the student develop the skills of acquiring and analyzing physiological signals, data interpretation and documentation.

Concurrent with BIOL 368.

Prerequisites: BIOL 122-125.

*1 credit, Fall, Spring*

**BIOL 373: Cellular Biochemistry**

This course explores the synthesis of nucleotides, DNA, RNA, amino acids and proteins along with fundamental concepts of gene expression and signal transduction. Students discuss DNA-based information technologies and how to apply these technologies to study nucleic acid and protein structure and function. Students are expected to use this knowledge to interpret experimental data and propose scientifically sound explanations consistent with presented data.

Concurrent with BIOL 374.

Prerequisite: BIOL 122-127, CHEM 366.

*3 credits, Spring*

**BIOL 374: Cellular Biochemistry Lab**

Experiments are used in this course to illustrate the principles and research methods of biochemistry.

Concurrent with BIOL 373.

Prerequisites: BIOL 122-127, CHEM 366.

*1 credit, Spring*

**BIOL 375: Cell Biology**

Fundamental cellular, subcellular, and molecular characteristics of animal cells are studied in this course. Included are specific studies on cellular organelles, the cytoskeleton, cellular and intracellular membranes, intracellular transport, cell signaling, the cell nucleus, and protein synthesis, and protein structure and function. Also emphasized are current techniques used in



cell biology, such as Southern, Northern, and Western Blots, PCR, RNA interference, and immunofluorescent confocal microscopy.

Concurrent with BIOL 376.

Prerequisites: BIOL 122-127, 4 additional credits biology, 16 credits chemistry. *3 credits, Fall*

### **BIOL 376: Cell Biology Lab**

This course is designed to enhance the lectures presented in BIOL 375. Experiments used in this course illustrate the principles and research techniques of many aspects of animal cell biology.

Concurrent with BIOL 375.

Prerequisites: BIOL 122-127, 4 additional credits biology, 16 credits chemistry. *1 credit, Fall*

### **BIOL 378: Medical Microbiology**

This course is designed for future health care professionals that need to have a useful and comprehensive introduction to host-parasite relationships, and a thorough understanding of the microbe in its roles as a disease-producing etiological agent. Infectious diseases for this course have been selected from the realm of prions, viruses, rickettsiae, chlamydiae, PPLO forms, bacteria, fungal, and protozoan to illustrate introductory medical terminology and the principles of pathogenic microbiology.

Prerequisite: BIOL 122-125, Physician Assistant (PA) or LECOM majors. *3 credits, Spring*

### **BIOL 379: Medical Microbiology Lab**

This course consists of labs which complement topics taught in PHAS 365.

Concurrent with BIOL 378.

Prerequisite: BIOL 122-125, Physician Assistant (PA) or LECOM majors. *1 credit, Spring*

### **BIOL 381: Field Ecology**

This course is devoted primarily to field work. Lectures stress the structure of specific plant and animal communities indigenous to the Erie area. Concepts of community ecology are utilized extensively. Special emphasis is placed on deleterious factors of the environment and how they affect community structure and function. Field exercises demonstrate through modern sampling techniques the physical, chemical, and biological structure of communities. Visitations to a variety of ecosystems are an integral part of the laboratory.

Concurrent with BIOL 382.

Prerequisites: BIOL 122-127, 298, 299 or instructor's permission. *2 credits*

### **BIOL 382: Field Ecology Lab**

The practical aspects of ecosystem ecology are studied in this course. Visits are made to a variety of local ecosystems; e.g. streams, forests, ponds, bogs, marshes, etc.

Concurrent with BIOL 381.

Prerequisites: BIOL 122-127, 298-299 or instructor's permission. *2 credits*

### **BIOL 383: Tropical Marine Biology**

This course is open to all students regardless of major and fulfills the Liberal Studies Core Science requirement. The course is offered over spring break in the Bahamas, where students investigate ecological systems such as coral reefs, mangroves, beaches, tidal pools, and inland habitats.

Prerequisite: Instructor's permission.

*3 credits, Spring*

### **BIOL 384: Ecology of Yellowstone National Park**

This course is taught at Yellowstone National Park where students examine the vegetation, thermophilic life, and ecology of Yellowstone National Park. Topics covered include grizzly bears; wolf reintroduction; impact of fires, geysers and past volcanic activity; geological history including earthquakes, vegetation, thermophilic life, and the herbivores of the park (bison, moose, antelope, and elk). One day is also spent at the Museum of the Rockies in Bozeman reviewing their dinosaur exhibit and getting a behind-the-scenes tour.

Prerequisite: Instructor's permission.

*2-3 credits, Summer*

**BIOL 385: Limnology**

Limnology is designed to acquaint the student with the biota of fresh waters through the use of modern limnological techniques. Special emphasis is placed on Lake Erie and Presque Isle Bay. Concurrent with BIOL 386.

Prerequisite: BIOL 122, 123, 124, 125, and either BIOL 126-127 or BIOL 140. *3 credits, Fall*

**BIOL 386: Limnology Lab**

Students will make weekly trips on Lake Erie and the Bay area utilizing Gannon's research vessel, "Environaut." They will collect physical, chemical, and biological samples to analyze in the laboratory using standard limnological methods.

Concurrent with BIOL 385.

Prerequisites: BIOL 122, 123, 124, 125, and either BIOL 126-127 or BIOL 140. *1 credit, Fall*

**BIOL 390: Plant Ecology**

The abiotic and biotic factors that limit the abundance and distribution of plants are discussed. These factors are explored at several levels: individual, population, metapopulation, community, and ecosystem.

Prerequisites: BIOL 122-127. *3 credits*

**BIOL 391: Plant Ecology Lab**

This laboratory is intended to reinforce many of the concepts discussed in lecture.

Hypothesis testing is important in science and as such, data collection and analysis are used to test hypotheses. These hypotheses require us to become familiar with the local plant families and common sampling methods. The laboratories have an outdoor component.

Concurrent with BIOL 390.

Prerequisites: BIOL 122-127. *1 credit*

**BIOL 395: Fisheries Biology**

This course explores the morphology, classification, life history, population dynamics, and ecology of freshwater fishes.

Concurrent with BIOL 396.

Prerequisite: BIOL 122-127. *3 credits, Fall*

**BIOL 396: Fisheries Biology Lab**

This course emphasizes collection, identification, and assessment of local fishes.

Concurrent with BIOL 395.

Prerequisite: BIOL 122-127. *1 credit, Fall*

**BIOL 400: Aquatic Toxicology**

This course is an in-depth study of the interactions between anthropogenic chemicals and aquatic ecosystems. Topics include the origin, fate, chemical and biological detection, and quantification of pollutants and their impact at the molecular, biochemical, cellular, physiological, organismal, and community levels of organization.

Prerequisites: CHEM 224-225. *3 credits*

**BIOL 487: Directed Research**

In this course, the student works with a biology faculty member on an ongoing or newly funded project. Upon completion of the project, or a designated portion thereof, the student makes a presentation.

Prerequisites: BIOL 122-125 and written permission of faculty mentor. *1-3 credits*

**BIOL 488: Biology Research I**

In this course, the student works individually with a biology faculty member to identify a research project that can be conducted at Gannon University or in collaboration with another organization. The student conducts a literature review, designs a research project, and prepares a written research proposal that is submitted to the faculty mentor at the end of the semester.

Prerequisite: BIOL 122-125 & written permission of faculty mentor. *1-3 credits*

**BIOL 489: Biology Research II**

In this course, the student works with a biology faculty member to conduct the research proposed in Biology Research I (BIOL 488). The student submits a written report of the results of the project to the faculty mentor. An internal or external presentation is required.

Prerequisite: BIOL 122-125, 488 and written permission of faculty mentor.

*1-3 credits*

**BIOL 490-495: Special Topics in Biology**

Topics of special and/or current interest in all areas of biology will be covered. For these courses, a student conducts a literature search. A written and oral report based on the review of applicable scientific literature must be accepted by the faculty before a grade is given.

Prerequisites: BIOL 122-127 plus 8 additional BIOL credits. Instructor written permission is required.

*1-3 credits, Fall, Spring*

**BIOL 496-499:**

These numbers designate special situations such as CO-OP projects, internships, independent study and experimental courses at the upper-divisional level. A written report and oral presentation to the biology faculty is required. **The credit may take the place of BIOL 490-495 providing it exceeds 1 credit and the requirement of a written and oral report is included.**

Prerequisites: BIOL 122-127 & written permission of the Chair of Biology Department. *1-3 credits*

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**BIOLOGY**

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GREGORY M. ANDRASO, Ph.D., *Chairperson*

The Biology Department values broadly trained students who are knowledgeable in a diversity of disciplines within biology. Such broad training is important in today's age, when there is considerable overlap among the biological disciplines. Students are therefore encouraged to take a variety of courses to fulfill the 28 credits of upper-level electives required in the major. However, students should work closely with their academic advisor(s) to determine the coursework that best suits their educational and career goals. Several emphases and courses relevant to specific disciplines are listed below. Students may also choose to complete the biology degree with a pre-Physician Assistant (pre-PA) or pre-Physical Therapy (pre-PT) option. These curriculum tracks allow students to earn their degree in biology and complete the prerequisite courses necessary to apply for matriculation into professional PA or PT graduate programs.

Students majoring in biology also have the option to participate in two academic travel courses that allow students to study tropical marine biology in the Bahamas or the ecology of Yellowstone National Park. These courses combined with the laboratory experiences and opportunities to pursue faculty-mentored undergraduate research provide students with the laboratory skills, critical thinking ability and problem-solving skills that are pivotal to be successful in biology-related careers.

**GRADUATION REQUIREMENTS FOR BACHELOR OF SCIENCE DEGREE IN BIOLOGY**

- Biology courses required for a Bachelor of Science degree in biology include: BIOL 122/123, BIOL 124/125, BIOL 126/127, BIOL 265/266, 27 credits of upper-level courses in biology\* (200-level or above), and 2 credits of BIOL 487-489 or BIOL 490-495.
  - o **Pre-Physician Assistant Track:** Students complete all of the requirements for the Bachelor of Science degree in biology listed above. However, students are required to complete Human Gross Anatomy with Lab - BIOL 365/366; Animal Physiology with Lab - BIOL 368/369, and Medical Microbiology with Lab - BIOL 378/379 as part of the 27 credits of upper-level courses in biology\*. Students are also recommended to complete Medical Terminology - PHAS 121, Introduction to Psychology - PSYC 111, Basic Sociology - SOCI 110, Applied Statistics - MATH 213, and faculty-mentored research - BIOL 487-489 as part of the requirements within the major.

- o **Pre-Physical Therapy Track:** Students complete all of the requirements for the Bachelor of Science degree in biology listed above. However, students are required to complete Human Gross Anatomy with Lab - BIOL 365/366 and Animal Physiology with Lab - BIOL 368/369 as part of the 27 credits of upper-level courses in biology\*. In addition, students are required to complete the following courses within the biology curriculum to fulfill the pre-requisites for graduate programs in physical therapy: Introduction to Psychology – PSYC 111; Applied Statistics – MATH 213; 3-6 credits of social science electives including a 200-level PSYC course and/or Basic Sociology – SOCI 110 (recommended); 7 credits of Sport and Exercise Science credits including Physiology of Exercise and Sport with lab – SPRT 390/391 and Kinesiology – SPRT 360; and 2 credits of Physical Therapy courses including Seminar I – PT 110 and Seminar II – PT 210.
- Students are required to complete a minimum of 4 labs associated with upper-level biology courses (200-level and above), and all upper-level biology labs are required with the course, where indicated.
- Students may earn a maximum of 6.0 credits in BIOL 487-489 toward the biology courses required within the major; 2 credits can be used to fulfill the 2 credit requirement in BIOL 487-489 or BIOL 490-495 and 4 credits can be used to fulfill the 28 credit requirement of upper-level biology elective credits. If additional academic credit is earned beyond 6 credits, the credit(s) can be used toward the 11.0 credits of general electives.
- Students must earn a 2.0 grade point average or higher across all of the courses required within the major, which includes required courses in biology, chemistry, physics, and mathematics.

*\*CHEM 366/367: Structural Biochemistry and CHEM 368/369: Biochemical Pathways may be used to fulfill the 28 credits of upper-level courses in biology.*

## Biology Curriculum

*(Numerals in front of courses indicate credits)*

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
4	Molecular & Cellular Biology/ BIOL 122-123	4	Animal Form & Function/BIOL 124-125
4	General Chemistry I/CHEM 111-112	4	General Chemistry II/CHEM 114-115
3	Sacred Scripture/LTHE 121	3	Mathematics/MATH 111, 112, 140, 141, 213*
3	College Composition/LENG 111	3	Critical Analysis & Comp/LENG 112
2	First-Year Seminar	3	Introduction to Philosophy/LPHI 131
16		17	
SOPHOMORE			
<i>Third Semester</i>		<i>Fourth Semester</i>	
4	Ecosystem Biology & Evolution/ BIOL 126-127	4	Genetics/BIOL 265-266
4	Organic Chemistry I/CHEM 221-222	4	Organic Chemistry II/CHEM 224-225
3	History Without Borders/LHST 111	3	General Elective
3	Theology II Series/LTHE*	3	Philosophy II Series/LPHI II
3	Mathematics/MATH 111, 112, 140, 141, or 213	3	Social Science Elective†
17		17	
JUNIOR			
<i>Fifth Semester</i>		<i>Sixth Semester</i>	
4	Biology Elective with lab (200-level or higher)#	4-8	Biology Electives (200-level or higher)#
		4	College Physics 2/PHYS 108-109

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4	Biology Elective with lab (200-level or higher)#	3	Fine Arts Series/LFIN†
4	College Physics 1/PHYS 105-106	3	Public Speaking/SPCH 111 or SPCH 113
1	Leadership Seminar†		
3	Philosophy of Ethical Responsibility/ LPHI 237 <b>or</b> Theology of Moral Responsibility/LTHE 227		
16		14-18	

**SENIOR**

	<i>Seventh Semester</i>		<i>Eighth Semester</i>
2	Biology Research/BIOL 487-489 <b>or</b> Special Topics in Biology/BIOL 490-495	4-8	Biology Elective with lab (200-level or higher)#
8	Biology Electives (200-level or higher)#	6	General Electives†
3	General Electives†	3	Senior Seminar/LBST 383†
3	Literature Series/LENG†		
16		13-17	

\*Students interested in pursuing graduate school (M.S. or Ph.D. programs) are strongly encouraged to complete MATH 140 and MATH 213 to fulfill the math requirements.

#Please refer to Gannon University's Undergraduate Catalog for course options. Students must meet all pre-requisites and/or co-requisites to register for a course. Students must complete a total of 27 credits of biology electives (200-level or higher) to graduate with a B.S. in Biology. Please refer to the Biology Department's policy on laboratories associated with upper level (BIOL 200-level) courses. Please refer to notes listed within curriculum matrix in the undergraduate catalog.

†Please refer to Gannon University's Undergraduate Catalog for course options.

**EMPHASES WITHIN THE BIOLOGY CURRICULUM****Biomedical Sciences**

Vertebrate Embryology (BIOL 307/308)  
 Histology (BIOL 320/321)  
 Microbiology (BIOL 331/332)  
 Immunology (BIOL 338/339)  
 Virology (BIOL 344)  
 Developmental Biology (BIOL 347/348)  
 Parasitology (BIOL 354/355)  
 Endocrinology (BIOL 363)  
 Human Gross Anatomy (BIOL 365/366)  
 Animal Physiology (BIOL 368/369)  
 Cellular Biochemistry (BIOL 373/374)  
 Cell Biology (BIOL 375/376)

**Ecology and Evolutionary Biology**

Comparative Vertebrate Anatomy (BIOL 292/293)  
 Principles of Ecology (BIOL 298/299)  
 Animal Behavior (BIOL 302)  
 Wildlife Management (BIOL 323/324)  
 Bioechemistry (BIOL 350)  
 Field Ecology (BIOL 381/382)  
 Tropical Marine Biology (BIOL 383)  
 Ecology of Yellowstone National Park (BIOL 384)  
 Limnology (BIOL 385/386)  
 Plant Ecology (BIOL 390/391)  
 Fisheries Biology (BIOL 395/396)

**Molecular and Cellular Biology**

Histology (BIOL 320/321)  
Microbiology (BIOL 331/332)  
Immunology (BIOL 338/339)  
Developmental Biology (BIOL 347/348)  
Cellular Biochemistry (BIOL 373/374)  
Cell Biology (BIOL 375/376)  
Virology (BIOL 344)  
Plant Physiology (BIOL 358/359)  
Structural Biochemistry (CHEM 366)  
Biochemical Pathways (CHEM 368/369)

**Organismal Biology**

Botany (BIOL 220/221)  
Invertebrate Zoology (BIOL 223/224)  
Comparative Vertebrate Anatomy (BIOL 292/293)  
Vertebrate Zoology (BIOL 325/326)  
Microbiology (BIOL 331/332)  
Plant Physiology (BIOL 358/359)  
Human Gross Anatomy (BIOL 365/366)  
Animal Physiology (BIOL 368/369)  
Parasitology (BIOL 354/355)

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**FRESHWATER AND MARINE BIOLOGY**

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Gregory M. Andraso, Ph.D., *Program Director*

Gannon's Freshwater and Marine Biology major is one of only 61 such programs in the entire country and one of the only majors of its kind in the Great Lakes region. The major provides students with coursework and hands-on experience to prepare them for employment or graduate training in the field of aquatic science. Our location on the shore of Lake Erie makes Gannon an ideal place to study aquatic systems. Presque Isle Bay, the eastern Basin of Lake Erie, and the many tributary streams that flow into the lake are natural laboratories for Gannon faculty and students. With 25% of the earth's surface fresh water, 10% of the United States' population, and 30% of Canada's population, the Great Lakes basin is an internationally valuable resource that requires better understanding, monitoring, and restoration. As water resources become more in demand, the need for aquatic scientists is expected to grow.

The combination of biological and environmental science perspectives, along with coursework in chemistry, physics, and mathematics provides students in the Freshwater and Marine Biology major broad and practical exposure to factors that influence aquatic ecosystems. Although the curriculum for the major is quite directed or prescribed, students have the ability to choose among numerous upper-level electives in water-related courses to personalize their degree.

Students in the Freshwater and Marine Biology major also have a great number of opportunities for field internships with agencies and organizations such as Presque Isle State Park, Pennsylvania Sea Grant, Department of Environmental Protection (DEP), Erie County Board of Health, Pennsylvania Fish and Boat Commission, the Regional Science Consortium, and the Western Pennsylvania Conservancy. Many of these groups have offices in the Tom Ridge Environmental Center located at the foot of Presque Isle and all of them are located within miles of campus.

**FRESHWATER AND MARINE BIOLOGY CURRICULUM**

<b>LIBERAL STUDIES CORE</b>	<b>(42)</b>	<b>PHYSICS</b>	<b>(8)</b>
____ LENG 111 College Composition	(3)	____ PHYS 105 College Physics 1	(3)
____ LENG 112 Crit Analysis &Comp	(3)	____ PHYS 106 College Physics 1 Lab	(1)
____ LENG Literature Series	(3)	____ PHYS 108 College Physics 2	(3)
____ LTHE 121 Intro to Sacred		____ PHYS 109 College Physics 2 Lab	(1)
Scripture	(3)		
____ LPHI 131 Intro to Philosophy	(3)	<b>MATHEMATICS</b>	<b>(6)</b>
____ LTHE Theology II Series	(3)	____ MATH 112 Trigonometry	(3)
____ LPHI Philosophy II Series	(3)	OR	
____ LTHE or LPHI Theo/Phil III		____ MATH 140 Calculus	
series	(3)	____ MATH 213 Applied Statistics	(3)
____ LFIN Fine Arts Series	(3)		
____ Social Science Elective	(3)	<b>ANALYSIS ELECTIVES</b>	<b>(11-13)</b>
____ LHST 111 History without Borders	(3)	____ BIOL 400 Aquatic Toxicology	(3)
____ LBST 383 Senior Seminar	(3)	____ BIOL 331 Microbiology	(3)
____ First Year Seminar	(2)	____ BIOL 332 Microbiology Lab	(1)
____ Leadership Seminar	(1)	____ CHEM 336 Intr Mod An Chem	(3)
____ SPCH 111 Speech	(3)	____ CHEM 337 Intr Mod An Chem	
		Lab	(2)
<b>BIOLOGY</b>	<b>(19)</b>	____ ENV 336 Water Quality	(3)
____ BIOL 140 Intro to Aquatic Sci	(3)	____ ENV 337 Water Quality Lab	(1)
____ BIOL 122 Molec & Cell Bio	(3)		
____ BIOL 123 Molec & Cell Bio Lab	(1)	<b>ORGANISMAL ELECTIVES</b>	<b>(7-8)</b>
____ BIOL 124 Anim Form & Func	(3)	____ BIOL 223 Invertebrate Zoology	(3)
____ BIOL 125 Anim Form & Func Lab	(1)	____ BIOL 224 Invertebrate Zoology	
____ BIOL 385 Limnology	(3)	Lab	(1)
____ BIOL 386 Limnology Lab	(1)	____ BIOL 340 Aquatic Microbiology(3)	
____ BIOL 488 Biology Research I	(2)	____ BIOL 341 Aquatic Microbiol Lab	(1)
____ BIOL 489 Biology Research II	(2)	____ BIOL 383 Tropical Marine Biology	(3)
		____ BIOL 395 Fisheries Biology	(3)
<b>ENVIRONMENTAL SCIENCE</b>	<b>(7)</b>	____ BIOL 396 Fisheries Biology Lab	(1)
____ ENV 120 Intro to Env Sci I	(3)		
____ ENV 101 Physical Geology	(3)	<b>ADDITIONAL SCIENCE ELECTIVES</b>	<b>(9-10)</b>
____ ENV 102 Physical Geology Lab	(1)	____ BIOL 350 Biogeochemistry	(3)
		____ BIOL 265 Genetics	(3)
<b>CHEMISTRY</b>	<b>(16)</b>	____ BIOL 266 Genetics Lab	(1)
____ CHEM 111 General Chem I	(3)	____ ENV 121 Intro to Env Sci II	(3)
____ CHEM 112 General Chem I Lab	(1)	____ ENV 210 Environmental Geology	(3)
____ CHEM 114 General Chem II	(3)	____ ENV 306 Oceanography	(3)
____ CHEM 115 General Chem II Lab	(1)	____ ENV 410 GIS	(3)
____ CHEM 221 Organic Chem I	(3)		
____ CHEM 222 Organic Chem I Lab	(1)	<b>GENERAL ELECTIVES</b>	<b>(0-3)</b>
____ CHEM 224 Organic Chem II	(3)		
____ CHEM 225 Organic Chem II Lab	(1)		

**Total Credits: 128-129****Freshwater and Marine Biology Curriculum***(Numerals in front of courses represent credits)**First Semester*

- 3 Intro to Environmental Science I/  
ENV 120
- 4 Gen Chem I & Lab/CHEM 111  
& 112

*Second Semester*

- 3 Intro to Aquatic Science/BIOL 140
- 4 Gen Chem II & Lab/CHEM 114  
& 115
- 3 Trig or Calculus/MATH 112 or 140

3	College Comp/LENG 111	3	Intro to Philosophy/LPHI 131
2	First Year Seminar	3	Crit Analysis & Comp/LENG 112
3	History Without Borders/LHST 111		
15		16	
	<i>Third Semester</i>		<i>Fourth Semester</i>
4	Mol & Cellular Bio & Lab/BIOL 122 & 123	4	Anim Form & Func & Lab/BIOL 124 & 125
4	Organic Chem I & Lab/CHEM 221 & 222	4	Organic Chem II & Lab/CHEM 224 & 225
3	Applied Statistics/MATH 213	4	Physical Geology & Lab/ENV 101 & 102
3	Intro to Sacred Scripture/LTHE 121	3	Lit Series/LENG
3	Speech/SPCH 111		
17		15	
	<i>Fifth Semester</i>		<i>Sixth Semester</i>
4	Limnology & Lab/BIOL 385 & 386	2	Biology Research I/BIOL 488
4	College Physics 1 & Lab/PHYS 105 & 106	4	College Physics 2 & Lab/PHYS 108 & 109
3-4	Science Elective	3-5	Science Elective
3	Theology II Series/LTHE	3-4	Science Elective
3	Philosophy II Series/LPHI	3	Fine Arts Series/LFIN
17-18		15-18	
	<i>Seventh Semester</i>		<i>Eighth Semester</i>
2	Biology Research II/BIOL 489	3-5	Science Elective
3-4	Science Elective	3-4	Science Elective
3-4	Science Elective	3	Senior Seminar/LBST 383
3-4	Science Elective	3	Social Science Elective
1	Leadership Seminar	0-3	General Elective (if needed)
3	Theology or Phil III Series/LTHE or LPHI		
15-18		12-18	

## BIOLOGY/SECONDARY 7-12 EDUCATION

Students may earn a Bachelor of Science degree in Biology/Secondary Education or a Bachelor of Arts degree in Biology/Secondary Education. Those students who want to obtain a graduate degree in biology or biology-related area are advised to complete the Bachelor of Science degree in Biology/Secondary Education. Students should work with their academic advisors to identify the appropriate courses to complete the biology or science electives within the curriculum to suit their career goals.

### Aims and Objectives

Keep current text available in catalog. See notes in provided pages.

#### Program Requirements:

- All education courses are required to be completed with a grade of C or better.
- LENG 111, LENG 112, Literature Series, and MATH courses require a grade of C or better.
- A GPA of 3.0 or greater is required of all students seeking teacher certification.

For a detailed explanation of all requirements refer to the Education section of the University Catalog.



**Bachelor of Science Degree:  
Biology/Secondary Education 7-12 Curriculum**

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
4	Molecular & Cell Biol/BIOL 122-123	4	Animal Form & Func/BIOL 124-125
4	General Chemistry I/CHEM 111-112	4	General Chemistry II/CHEM 114-115
2	First-Year Seminar*/EDCR 104	1	Foundations of Teaching/EDCR 103
3	Public Speaking/SPCH 111	3	Psych of Learn/Teach/EDCR 101
3	College Composition/LENG 111	3	Sacred Scripture/LTHE 121
3	Mathematics/MATH 111, 112, or 140	3	Mathematics/MATH 112, 141, or 213
19	(no charge for 19th credit)	18	
SOPHOMORE			
<i>Third Semester</i>		<i>Fourth Semester</i>	
4	Ecosys Biol & Evol/BIOL 126-127	4	Invert Zoology/BIOL 223-224 <b>OR</b>
4	Organic Chemistry I/CHEM 221-222		Vertebrate Zoology/BIOL 325-326
3	Instruct Design & Sec Ed Classroom+/ EDCR 206	4	Organic Chem II/CHEM 224-225
0	Sec Educ Field Experience I+/EDFL 101	3	Literature Series/LENG
3	Critical Analysis/LENG 112	1	Leadership Seminar/LHES 240
3	Introduction to Philosophy/LPH1 131	3	Phil of Ethical Respons/LPHI 237 <b>OR</b>
			Theo of Moral Respons/LTHE 227
		3	Overview of Special Educ/SPED 101
17		18	
JUNIOR			
<i>Fifth Semester</i>		<i>Sixth Semester</i>	
4	Biology Electives (200 or higher)	4	Principles of Ecology/BIOL 298-299
2	Biology Research/BIOL 487-489 <b>OR</b>	4	Invert Zoology/BIOL 223-224 <b>OR</b>
	Special Topics in Biol/BIOL 490-495		Vertebrate Zoology/BIOL 325-326
1	Meth/Mat for Instr Sem/EDCR 321	3	Fine Arts Series/LFIN
0	Sec Educ Field Exp II+/EDFL 102	3	Philosophy II Series/LPHI
3	History without Borders/LHST 111	3	Meet Need Stu Excp: 7-12/SPED 340
3	Literacy Dev, Strat, Assmts*/MLED 301	0	Sec Educ Field Exp III+/EDFL103
4	Genetics/BIOL 265-266		
17		17	
<i>Summer</i>			
4	College Physics 1/PHYS 105-106		
4	College Physics 2/PHYS 108-109		
8			
SENIOR			
<i>Seventh Semester</i>		<i>Eighth Semester</i>	
4	Biol Electives (200 or higher)/BIOL	3	Prof Seminar/EDCR 401
3	Assessment/Evaluation*/EDCR 330	12	Student Teaching/EDFL 410
3	Meth/Mat for Teaching: ESL/ELL*/ EDCR 420	3	Theo II Series/LTHE
3	Concepts/Meth of Ntr Sci/MLED 302		
4	Microbiology/BIOL 331-332		
17		18	

\*Field experience embedded throughout semester (6-15 hours)

+Field experience embedded throughout semester (60 hours)

Field experiences require a grade of P (pass).

## Bachelor of Arts Degree: Biology/Secondary Education 7-12 Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
4	Molecular & Cell Biol/BIOL 122-123	4	Animal Form & Func/BIOL 124-125
4	General Chemistry I/CHEM 111-112	4	General Chemistry II/CHEM 114-115
1	Foundations of Teaching/EDCR 103	3	Psyc of Learn/Teach/EDCR 101
{ 2	First-Year Seminar*/EDCR 104	3	College Composition/LENG 111
{ 3	Public Speaking/SPCH 111	3	Mathematics/MATH 112, 141, or 213
3	Mathematics/MATH 111, 112, or 140		
17		17	
SOPHOMORE			
<i>Third Semester</i>		<i>Fourth Semester</i>	
4	Ecosystem Bio & Evol/BIOL 126-127	4	Genetics/BIOL 265-266
4	Organic Chemistry I/CHEM 221-222	4	Invert Zoology/BIOL 223-224 <b>OR</b>
{ 3	Instruct Design & Sec Ed Classroom+/ EDCR 206		Vertebrate Zoology/BIOL 325-326
{ 0	Sec Educ Field Exp I+/EDFL 101	{ 1	Leadership Seminar/LHES 240
3	Critical Analysis/LENG 112	{ 3	Phil of Ethical Respons/LPHI 237 <b>OR</b>
3	Introduction to Philosophy/LPH1 131		Theo of Moral Respons/LTHE 227
		3	History without Borders/LHST 111
		3	Overview of Special Educ/SPED 101
17		18	
JUNIOR			
<i>Fifth Semester</i>		<i>Sixth Semester</i>	
4	Microbiology/BIOL 331-332	4	Principles of Ecology/BIOL 298-299
{ 1	Meth/Mat for Instr Sem/EDCR 321	4	Invert Zoology/BIOL 223-224 <b>OR</b>
{ 0	Sec Educ Field Exp II+/EDFL 102		Vertebrate Zoology/BIOL 325-326
3	Lit Dev, Strat, Assmts*/MLED 301	3	Literature Series/LENG
3	Sacred Scripture/LTHE 121	2	Science Elective†
3	Philosophy II Series/LPHI	{ 3	Meet Need Stu Excp: 7-12/SPED 340
4	College Physics 1/PHYS 105-106	{ 0	Sec Educ Field Exp III+/EDFL103
18		16	
SENIOR			
<i>Seventh Semester</i>		<i>Eighth Semester</i>	
2	Biology Research/BIOL 487-489 <b>OR</b>	3	Prof Seminar/EDCR 401
	Special Topics in Biol/BIOL 490-495	12	Student Teaching/EDFL 410
3	Assessment/Evaluation*/EDCR 330		
3	Meth/Mat for Teaching: ESL/ ELL*/ EDCR 420		
3	Fine Arts Series/LFIN		
3	Theology II Series/LTHE		
3	Conc/Methods of Ntr Sci/MLED 302		
17		15	

\*Field experience embedded throughout semester (6-15 hours)

+Field experience embedded throughout semester (60 hours)

Field experiences require a grade of P (pass).

†Students should work with their academic advisor to determine which science elective course suits their career goals.

## BIOLOGY MINOR

A total of 24 credits of biology is required for a minor. Completion of the following courses will satisfy the requirements for a minor in biology: BIOL 122-123, BIOL 124-125, BIOL 126-127, and 12 credits above BIOL 200. The 12 credits of biology electives should be geared toward a specific area of interest (e.g., ecology, microbiology, organismal biology).

## THE NEXT STEP

In order to complete the Next Step Program to earn a B.S. degree in Biology, the following courses must be transferred into Gannon or completed in addition to the required courses for the Next Step Program in Biology. Other courses (i.e. chemistry, physics or upper level courses in biology) may also be transferred and used to meet the requirements of the program.

4	Molecular & Cellular Biology/BIOL 122-123
4	Animal Form & Function/BIOL 124-125
6	Mathematics/MATH 111,112,135,140,141,213*
39-40	General Electives†
53-54	

## JUNIOR

4	Ecosystem Biology & Evolution/ BIOL 126-127	4	Biology Electives (200-level or higher)#
4	General Chemistry I/CHEM 111-112	4	General Chemistry II/CHEM 114-115
4	Biology Electives (200-level or higher)#	1	Genetics/BIOL 265-266
3	Sacred Scripture/LTHE 121	1	Leadership Seminar†
		3	Philosophy of Ethical Responsibility/ LPHI 237 or Theology of Moral Responsibility/LTHE 227
15		16	

## SUMMER

4	College Physics 1/PHYS 105-106
4	College Physics2/PHYS 108-109
3	Introduction to Philosophy/LPHI 131
11	

## SENIOR

2	Biology Research/BIOL 487-489 or Special Topics in Biology/BIOL 490-495	6-8	Biology Electives (200-level or higher)#
6-8	Biology Electives (200-level or higher)#	3	Fine Arts Series /LFIN†
4	Organic Chemistry I/CHEM 221-222	3	Senior Seminar/LBST 383†
3	Literature Series/LENG†	4	Organic Chemistry II/CHEM 224-225
15-17		16-18	

\*Students interested in pursuing graduate school (M.S. or Ph.D. programs) are strongly encouraged to complete MATH 140 and MATH 213 to fulfill the math requirements.

#Please refer to Gannon University's Undergraduate Catalog for course options. Students must meet all pre-requisites and/or co-requisites to register for a course. Students must complete a total of 21 credits of biology electives (200-level or higher) including 3 labs to graduate with a B.S. in Biology. Please refer to the Biology Department's policy on laboratories associated with upper level (BIOL 200-level) courses. Please refer to notes listed within curriculum matrix in the undergraduate catalog.

†Please refer to Gannon University's Undergraduate Catalog for course options.

Students will be permitted to take other courses in substitution for any course listed above that they have satisfactorily completed prior to admission into the Next Step program. Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or an approved capstone course at Gannon.

### Prerequisites:

*A basic Biology or Science course and a basic Mathematics course.*

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## CHEMICAL ENGINEERING

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WESLENE TALLMADGE, Ph.D., *Program Director*

The Department of Chemistry offers a cooperative program in Chemical Engineering with the University of Pittsburgh.

This program requires five years of study for completion: three years at Gannon University followed by two years of study at the University of Pittsburgh. Upon completion, the student is awarded two degrees, a B.S. in Chemistry from Gannon University and a B.S. in Chemical Engineering from the cooperating university.

During the period spent at Gannon, the student will take specified courses in Chemistry, Mathematics and Liberal Studies Core and will have the advantage of beginning college level work in small classes where there is a strong commitment to effective teaching. Upon transfer to the cooperating university a wide range of professional specializations are available, including opportunity to participate in a cooperative/work study program. Eligibility requirements for acceptance at the cooperating universities are no grades below "C", and a grade point average above 3.0.

Further information and career counseling is available from the Director.

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## COURSE DESCRIPTIONS:

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(All chemistry courses are listed under Department of Chemistry.)

### Chemical Engineering Curriculum

*(Numerals in front of course indicate credits)*

FRESHMAN			
	<i>Fall</i>		<i>Spring</i>
2	First-Year Seminar	4	General Chemistry II & Lab/ CHEM 114 & 115
3	College Composition/LENG 111	3	Calculus II/MATH 141
4	General Chemistry I & Lab/ CHEM 111 & 112	3	Sacred Scriptures/LTHE 121
3	Calculus I/MATH 140	3	Introduction to Philosophy/ LPHI 131
3	History Without Borders/LHST 111	4	Fundamentals of Physics 1 & Lab/ PHYS 210 & 211
2	Engineering Graphics/ME 207		
1	Engineering Graphics/ME 208		
18		17	
SOPHOMORE			
	<i>Fall</i>		<i>Spring</i>
3	Crit Analysis & Comp/LENG 112	4	Organic Chemistry 2 & Lab/ CHEM 224 & 225
4	Organic Chemistry I & Lab/ CHEM 221 & 222	3	Fine Arts Series/LFIN

3	Materials Science/ME 315	4	Fundamentals of Physics 2 & Lab/ PHYS 212 & 213
3	Calculus III/MATH 242	3	Philosophy II Series/LPHI
3	Theology II Series/LTHE	3	Calculus IV/MATH 243
<hr/>		<hr/>	
16		17	
	JUNIOR		
	<i>Fall</i>		<i>Spring</i>
4	Physical Chemistry I & Lab/ CHEM 331 & 332	5	Intro to Modern Analytical Chemistry & Lab/CHEM 336 & 337
3	Structural Biochemistry/CHEM 366	4	Physical Chemistry II & Lab/ CHEM 334 & 335
3	Theology or Philosophy III Series/ LTHE or LPHI	3	Senior Seminar/LBST 383
1	Leadership Seminar	3	Literature Series/LENG
3	Public Speaking/SPCH 111	3	Differential Equations/MATH 304
3	Statistics/MATH 312		
<hr/>		<hr/>	
17		18	

To complete degree requirements, the following courses are to be taken at the University of Pittsburgh: Social Science, plus additional credits to make 128 credits.

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## CHEMISTRY

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WESLENE TALLMADGE, Ph.D., *Chairperson*

FACULTY: *Professors:* Weslene Tallmadge. *Associate Professors:* Matthew Heerboth, Timothy Laher, Lisa Nogaj. *Assistant Professors:* Betty Jo Chitester, Keith Krise, Christine Saber.

### Aims and Objectives:

Chemistry is required for a wide range of careers as a result of the technology that permeates our society. Science personnel at all levels, from the technician to the creative researcher, rely heavily on the fundamental principles of chemistry. In addition, careers in the many biological and physical sciences require a background in chemistry. Consequently, students at Gannon University take chemistry courses for different reasons. Some are motivated to pursue careers in chemistry such as research, management and sales. Others take both basic and advanced courses in preparation for work in fields such as medical, engineering, law, and environmental science. For example, chemistry is one of the most commonly chosen majors nationally for students wishing to enter medical and health professional schools. Also, students with an interest in Forensic Science may take Criminal Justice courses as technical electives (see advisor).

Essentially a student at Gannon will follow a sequence of chemistry courses in line with his or her interests, abilities, and vocational goals. There are several credit hours of elective courses in the chemistry degree program which allows the student to strengthen his or her background in allied sciences such as physics, biology, computer, and mathematics.

The department occupies the fourth floor of the Zurn Hall of Science. These spacious facilities contain modern equipment typically found in industrial, academic, and research laboratories. The student, for example, uses the atomic absorption spectrometers, polarograph, refractometer, flame photometer, gas chromatograph, infrared and ultraviolet spectrophotometers, nuclear magnetic resonance and mass spectrometers. Chemistry students also have access to computers capable of extensive molecular modeling.

The department offers to its students the advantages of small classes, individual attention, and frequent contact with staff members. Upper level chemistry students are required to participate in independent research and study under the guidance of a faculty member.

Seniors must complete at least one credit of undergraduate research in each of two successive semesters.

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## COURSE DESCRIPTIONS:

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Courses numbered CHEM 001, 102, 103, 104, 105, 106, 107, 108, 121, 166, 170, or 171 may not be used to fulfill the requirements for a Chemistry major.

### **CHEM 102: Introduction to Organic Chemistry and Biochemistry**

This one-semester course for Occupational Therapy students provides an introduction to the major classes of organic molecules and biomolecules for increased understanding of molecular events in living organisms. Students study the major organic functional groups and learn to draw, name, and identify physical and chemical properties of organic molecules. Students apply this knowledge to the study of biochemistry by interpreting how the molecular structure of carbohydrates, lipids, proteins, enzymes and nucleic acids influences their diverse functions in the body.

*3 credits*

### **CHEM 103: Chemistry of Life I**

The course, designed for health professional majors, covers general chemical principles including atomic structure, chemical bonding, properties of the three states of matter, classes of chemical reactions, stoichiometry, acid-base chemistry, thermodynamics, kinetics, and solution chemistry. This course is limited to students enrolled in certain health professional programs, including physician assistant, sport & exercise science and nutrition & human performance.

*3 credits, Fall*

### **CHEM 104: Chemistry of Life I Laboratory**

Experiments are designed to reinforce the concepts taught in Chemistry of Life I (CHEM 103). Emphasis is on developing safe laboratory technique and proper recording and processing of data.

Co-requisite: CHEM 103

*1 credit, Fall*

### **CHEM 106: Chemistry of Life II**

This course was designed for students in the health sciences. The course will provide students with knowledge of the introductory organic and biological chemistry that is fundamental to understanding molecular events in living organisms. Each class of organic compounds is studied in terms of structure, nomenclature and physical/chemical properties. The portion of the course devoted to biological chemistry emphasizes structural, physical and chemical properties of the major classes of biomolecules including amino acids and proteins, carbohydrates, and lipids.

Prerequisite: CHEM 103

*3 credits, Spring*

### **CHEM 107: Chemistry of Life II Laboratory**

Experiments are designed to reinforce the concepts taught in CHEM 106 and to acquaint the student with the physical and chemical properties of the major organic functional group compounds as well as biochemically important compounds including proteins, carbohydrates and lipids. Emphasis is on developing safe laboratory technique and understanding concepts.

Co-requisite: CHEM 106

Prerequisite: CHEM 104

*1 credit, Spring*

### **CHEM 105: Physiological Chemistry**

The course provides an introduction to the structure and chemical reactivity of the major organic functional groups pertinent to the study of biological chemistry, structure and function of the major classes of biomolecules including carbohydrates, proteins, lipids and nucleic acids and an overview of the underlying chemical principles and recurring themes of the major metabolic pathways. Course enrollment is limited to nursing and nutrition & human performance majors.

Prerequisite: High school chemistry

*3 credits, Fall*

**CHEM 108: Physiological Chemistry Lab**

The course consists of twelve three-hour laboratory periods. Experiments complement the material covered in the lecture course CHEM 105 Physiological Chemistry.

*1 credit*

**CHEM 111: General Chemistry I**

This course represents a study of the fundamental theories and general principles of chemistry. The course is primarily designed as an introductory course for science majors and is a basic prerequisite for additional course work in chemistry. In this course the structure of matter, the relation of chemical structure to chemical and physical behavior of matter, the qualitative and quantitative aspects of chemical reactivity and associated energy changes are studied. In addition, selected topics are covered which illustrate the social relevance of the chemist/scientist and the historical significance of the field of chemistry.

Prerequisite: High School Algebra

*3 credits, Fall*

**CHEM 112: General Chemistry I Laboratory**

Experiments are designed to reinforce the concepts taught in General Chemistry I (CHEM111). Emphasis is on developing safe and proper laboratory technique, as well as proper recording and processing of data. Included in the course are syntheses, analyses (both qualitative and quantitative), instrumental techniques and computational experiments.

Co-requisite: CHEM 111

*1 credit, Fall*

**CHEM 114: General Chemistry II**

This course emphasizes basic chemical principles that underlie a more advanced study of the broad field of chemistry. These topics include kinetics, thermodynamics, electrochemistry, acid base chemistry, equilibria, and solution properties.

Prerequisite: CHEM 111

*3 credits, Spring*

**CHEM 115: General Chemistry II Laboratory**

Experiments are designed to reinforce the concepts taught in General Chemistry II (CHEM 114). Emphasis is on developing safe, proper laboratory technique, and proper recording and processing of data. Included in the course are syntheses, analyses (both qualitative and quantitative), instrumental techniques and computational experiments.

Co-requisite: CHEM 114

Prerequisite: CHEM 112

*1 credit, Spring*

**CHEM 121: Introduction to Nanotechnology**

This course presents an overview of the field of nanotechnology, the study of objects 1nm-100nm in size. The topics include what nanotechnology is, the basic science for nanotechnology, the properties of nano materials, characterizing nano materials and societal/ethics/business/legal issues in nanotechnology. Nanotechnology is a multi-disciplinary field drawing on physics, chemistry, biology and engineering. How the topics in these diverse fields impact nanotechnology will be presented. The course will also cover how nanotechnology will change society based on the impact on the environment, ethics, law, health and business.

Prerequisite: The ability to perform high school algebra is required.

*3 credits*

**CHEM 166: Issues in Science and Technology**

Designed to present the principles of science, particularly chemistry, to enable one to better understand the world. It is also designed to not only improve the student's ability to understand current problems, but also provide the basis for understanding future developments in the area of science and technology as they relate to the environment.

*3 credits*

**CHEM 221: Organic Chemistry I**

In this course, the student will study hydrocarbons, both aliphatic and aromatic compounds. Emphasis is placed upon the structures, properties, syntheses, reactions and uses of these compounds.

Prerequisite: CHEM 114

*3 credit, Fall*

**CHEM 222: Organic Chemistry Laboratory I**

This course provides the student with an introduction to the laboratory methods and techniques of organic chemistry. Emphasis is placed upon the purification and characterization of organic molecules

Prerequisite: CHEM 115; Co-requisite: CHEM 221

*1 credit, Fall*

**CHEM 224: Organic Chemistry II**

In this course the student will study many monofunctional families of compounds. Emphasis is placed upon the structures, properties, syntheses, reactions and the uses of these compounds.

Prerequisite: CHEM 221

*3 credits, Spring*

**CHEM 225: Organic Chemistry Laboratory II**

This course involves experimental studies of the reactions of organic molecules and identification of molecules using infrared and nuclear magnetic resonance spectroscopy.

Prerequisite: CHEM 222; Co-requisite: CHEM 224

*1 credit, Spring*

**CHEM 323: Organic Chemistry III**

A continuation of Chemistry CHEM 224. A systematic study of the polyfunctional organic compounds. Emphasis is placed upon the structures, properties, syntheses, reactions and uses of these compounds.

Lectures: Two hours per week.

Prerequisite: CHEM 224

*2 credits, Fall*

**CHEM 324: Organic Chemistry Laboratory III**

Quantitative and qualitative organic analysis with emphasis on both classical and modern methods of analysis.

Laboratory: Eight hours per week.

Corequisite: CHEM 323

Prerequisite: CHEM 225

*2 credits, Fall*

**CHEM 331: Physical Chemistry I**

An introduction to physical chemistry, focusing on the sub-discipline of thermodynamics. Students examine the behavior of gases and the laws of classical thermodynamics. These concepts are used to interpret chemical and phase equilibria and to develop solution theory. The course concludes as students connect macroscopic thermodynamic properties to microscopic particle behavior using elementary statistical mechanics.

Prerequisite: CHEM 221, Math/MATH 141

*3 credits, Fall*

**CHEM 332: Physical Chemistry Laboratory I**

A suite of experimental studies to accompany CHEM 331, with an emphasis on developing data processing and report-writing skills.

Prerequisite: CHEM 222

*1 credit, Fall*

**CHEM 334: Physical Chemistry II**

An introduction to physical chemistry, focusing on the sub-disciplines of kinetics and quantum mechanics. The course provides an overview of the kinetic theory of reaction rates, reaction dynamics and catalysis. Students then delve into the historical development of quantum theory, examine wave-particle duality and learn the mathematics of wave mechanics. These concepts are applied to simple systems like the particle in a box, harmonic oscillator, rigid rotor and the hydrogen atom. The discussion advances to atomic and molecular structure, chemical bonding and implications for spectroscopic analysis.

Prerequisite: CHEM 331

*3 credits, Spring*

**CHEM 335: Physical Chemistry Laboratory II**

A suite of experimental studies to accompany CHEM 334, with an emphasis on developing data processing and report-writing skills.

Prerequisite: CHEM 332

*1 credit, Spring*



**CHEM 336: Introduction to Modern Analytical Chemistry**

Introduction to the methods of analysis in modern analytical chemistry. Application of general chemistry principles in the systematic analysis of materials. Classical methods of analysis examined include titrimetry and gravimetry. Instrumental methods include potentiometry, electrolytic deposition, spectrophotometry and chromatography.

Lectures: Three hours per week.

Prerequisite: CHEM 114

*3 credits, Spring*

**CHEM 337: Modern Analytical Chemistry Laboratory**

Experimental studies utilizing techniques used in modern analytical chemistry laboratories. Emphasis in precise measurements and use of instrumental methods.

Laboratory: Eight hours per week.

Corequisite: CHEM 336

Prerequisite: CHEM 115

*2 credits, Spring*

**CHEM 356: Chemical Literature**

Designed to acquaint the student with the various sources of literature available today including periodicals and the classical works of reference.

Lecture: One hour per week.

Prerequisite: CHEM 224

*1 credit, Spring*

**CHEM 360: Polymer Science**

An overview of polymer science including synthesis, characterization, properties, nomenclature and industrial processing of polymers. Thermodynamics and kinetics will be utilized to describe certain aspects of polymers.

Prerequisites: MATH 140, and CHEM 224 or ME 334

*3 credits, Spring*

**CHEM 361: Advanced Inorganic Chemistry**

An advanced study of inorganic chemistry concepts including atomic structure, molecular symmetry and group theory, bonding theories, the solid state, acids and bases, coordination chemistry, organometallic chemistry, and bioinorganic chemistry. The course connects the chemistry of inorganic compounds to their current and emerging applications and presents physical techniques commonly used to study inorganic materials. Recent primary literature articles and reviews are integrated to demonstrate the modern and interdisciplinary nature of inorganic chemistry.

Prerequisite: CHEM 331 or concurrent enrollment

*3 credits, Fall*

**CHEM 362: Advanced Inorganic Laboratory**

Preparation techniques of inorganic chemistry.

Laboratory: Three hours per week.

*1 credit, Fall*

**CHEM 366: Structural Biochemistry**

A systematic study of the biologically important compounds including the amino acids, proteins, nucleic acids, enzymes, carbohydrates and lipids. Emphasis is placed upon the structure, properties, syntheses, reactions and functions of these compounds.

Lectures: Three hours per week.

Prerequisite: CHEM 224 or permission of instructor

*3 credits, Fall, Spring*

**CHEM 367: Biochemical Laboratory**

An introduction to the laboratory methods and techniques utilized for the isolation, characterization and syntheses of the biologically important compounds.

Laboratory: Four hours per week.

Prerequisite: CHEM 225

*1 credit, Fall*

**CHEM 368: Biochemical Pathways**

A continuation of the systematic study of the biologically important compounds including amino acids, proteins, enzymes, carbohydrates and lipids. Emphasis is placed upon biochemical pathways and energetics involving these compounds.

Prerequisite: CHEM 366

*3 credits, Fall*

**CHEM 380, 381, 382: Undergraduate Research**

Selected topics in the field of chemistry to be solved by the student with advice from the staff.

Prerequisite: Permission of the Instructor

Corequisite: Senior Status

*1-3 credits, Fall*

**CHEM 383, 384, 385: Undergraduate Research**

Continuation of CHEM 380, 381, 382.

*1-3 credits, Spring*

**CHEM 402: Advanced Organic Chemistry**

A study of topics specialized or current interest in the area of Organic Chemistry.

Lecture: Three hours per week.

Prerequisite: CHEM 224

*3 credits*

**CHEM 408: Advanced Instrumental Analysis**

An in-depth examination of the major instrumental methods used in analytical chemistry.

Application of advanced chemical principles and fundamental instrumental concepts focusing on how they influence the precision and accuracy of the measurement aspect of analysis.

Techniques examined include Spectrophotometry, Chromatography and Electrochemistry. The role computers play in modern instruments is examined.

Lecture: Three hours per week.

Prerequisite: CHEM 336

*3 credits, Spring*

**CHEM 409: Advanced Instrumental Analysis Laboratory**

Advanced experimental techniques utilizing modern chemical instrumentation. Emphasis in on verifying the chemical principles underlying the method and investigating factors influencing the validity of the analysis.

Laboratory: Four hours per week.

Prerequisite: Chem/CHEM 336

*1 credit, Spring*

**CHEM 412: Industrial Internship**

Selected students spend an extended period, usually 10-12 weeks during the summer, working in a chemistry laboratory under the direct supervision of a chemist. Where possible, a member of the Gannon faculty will meet regularly with the student and his supervisor to conduct a continuing evaluation of the student's work and progress. At the conclusion of the work period, the student is to write a paper on some phase of his project or experience for submission to his supervisor and faculty advisor and a presentation at a departmental seminar.

Prerequisite: Permission of the Chemistry Department and the cooperating laboratory

*1-3 credits*

**CHEM 414: Computational Chemistry**

Computational chemistry is a field in the science of chemistry in which chemists use computers and computer software as tools to examine the effect of chemical structure at the molecular and atomic levels on the chemical and physical properties of chemical substances.

Computational methods provide powerful tools for the prediction of properties or substances, designing new compounds that have a certain desirable property, examining reaction mechanisms, conformational analysis, examining how structure affects physiological properties of pharmaceuticals, and many other applications. In this course, the student will be presented with a hands-on opportunity to explore the various techniques and use of computational equipment and characterizes the field of computational chemistry.

Prerequisites: CHEM 224; and either CHEM 331 or CHEM 366 are a co requisite or prerequisite.

*2 credits, Fall*

**CHEM 418, 419: Special Topics in Chemistry**

Topics of special and/or current interest in all areas of chemistry will be covered. Three topics will normally be covered in depth during the course of a semester. Typical topics include: organosulfur chemistry, organometallic chemistry, heterocyclic chemistry, polymer chemistry, catalysis, chromatography, natural products, photochemistry, nuclear chemistry, clinical chemistry, etc.

*1-3 credits*

## Chemistry Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN		
	<i>Fall</i>	<i>Spring</i>
2	First-Year Seminar	3 Crit Analysis & Comp/LENG 112
3	College Composition/LENG 111	4 General Chemistry II & Lab/ CHEM 114 & 115
4	General Chemistry I & Lab/ CHEM 111 & 112	3 Sacred Scriptures/LTHE 121
3	Calculus I/MATH 140 *	3 Calculus II/MATH 141
4	Technical Electives **	4 Technical Electives **
16		17
SOPHOMORE		
	<i>Fall</i>	<i>Spring</i>
4	Organic Chemistry I & Lab/ CHEM 221 & 222	4 Organic Chemistry 2 & Lab/ CHEM 224 & 225
4	Fundamentals of Physics 1 & Lab/ PHYS 210 & 211	4 Fundamentals of Physics 2 & Lab/ PHYS 212 & 213
3	History Without Borders/LHST 111	3 Literature Series/LENG
3	Introduction to Philosophy/LPHI 131	4 Technical Electives **
3	Social Science	3 Public Speaking/SPCH 111 or Human Communication/SPCH 113
17		18
JUNIOR		
	<i>Fall</i>	<i>Spring</i>
4	Organic Chemistry III & Lab/ CHEM 323 & 324	1 Leadership Seminar
3	Physical Chemistry I/CHEM 331	5 Intro to Modern Analytical Chemistry & Lab/CHEM 336 & 337
1	Physical Chemistry I Lab/CHEM 332	3 Physical Chemistry II/CHEM 334
3	Technical Elective **	1 Physical Chemistry II Lab/CHEM 335
3	Theology II Series/LTHE	1 Chemistry Literature/CHEM 356
3	Philosophy II Series/LPHI	3 Theology or Philosophy III Series/ LTHE or LPHI
17		14
SENIOR		
	<i>Fall</i>	<i>Spring</i>
4	Chemistry Electives	3 Senior Seminar/LBST 383 ***
3	Fine Arts Series/LFIN	3 Technical Electives **
3	Adv. Inorganic Chem./CHEM 361	7 Chemistry Electives
3	Technical Electives **	1 Undergraduate Research/CHEM 380-383
1	Undergraduate Research/CHEM 380-383	
1	General Elective	
15		14

**Total credits: 128**

\* If necessary, students may take MATH 111 and MATH 112 before taking MATH 140 and MATH 141.

\*\* Upper level science (physics, biology, environmental), mathematics, engineering or computer science courses are recommended. Your advisor can assist in choice of electives. The choice of technical electives depends upon the career goal.

### Chemistry with Biology technical electives

**\*\*** Electives should be chosen based upon the career intentions of the student. The student will take BIOL 122, 123, 124, and 125 as Technical Electives.

Other biology courses at the 200 level or higher will also fulfill the requirements.

### Chemistry with Business technical electives

**\*\*** The following courses are accepted as Technical Electives: BCOR 111, BCOR 112, BCOR 201, BCOR 202, BCOR 203, BCOR 231, BCOR 241 and BCOR 251.

### Chemistry with Criminal Justice technical electives

**\*\*** Students may choose technical electives from CRJS 310, 321, or 325.

## THE NEXT STEP

### Baccalaureate Degree Program for Graduates of Two Year Colleges

#### Chemistry

(Numerals in front of courses indicate credits)

##### Pre-Senior Year

- 3 Organic Chemistry I/CHEM 221
  - 1 Organic Chemistry I Lab/CHEM 222
  - 3 Organic Chemistry II/CHEM 224
  - 1 Organic Chemistry II Lab/CHEM 225
  - 3 Modern Analytical Chemistry/CHEM 336
  - 2 Modern Analytical Chemistry Lab/CHEM 337
  - 3 General Physics I/PHYS 105
  - 1 General Physics I Lab/PHYS 106
  - 3 General Physics II/PHYS 108
  - 1 General Physics II Lab/PHYS 109
  - 3 Calculus I/MATH 140 (required)
  - 3 Calculus II/MATH 141 (required)
  - 3 Introduction to Philosophy/LPHI 131
  - 3 Sacred Scripture/LTHE 121
- 
- 33

##### Senior Year

- 3 Organic Chemistry III/CHEM 323
  - 1 Organic Chemistry III Lab/CHEM 324
  - 3 Physical Chemistry I/CHEM 331
  - 3 Physical Chemistry II/CHEM 334
  - 13 Chemistry Electives
  - 1 Chemical Literature/CHEM 356
  - 3 Senior Seminar/LBST 383
  - 3 Literature Series/LENG
  - 3 Fine Arts Series/LFIN
  - 3 Theology or Philosophy III Series/LTHE or LPHI
  - 1 Leadership Seminar
- 
- 37

Recommended: Calculus III

**Prerequisites:**

*One year of General Chemistry*  
*One semester of Calculus*

Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program. Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

**CHEMISTRY MINOR**

Students interested in a chemistry minor should follow the matrix below (24 credits total):

CHEM 111 and 112	General Chemistry I and lab	4 credits
CHEM 114 and 115	General Chemistry II and lab	4 credits
CHEM 221 and 222	Organic Chemistry I and lab	4 credits
CHEM 224 and 225	Organic Chemistry II and lab	4 credits

An additional 8 credits of upper-level chemistry courses selected from the following list must be completed successfully:

CHEM 323 and 324	Organic Chemistry III and lab	4 credits
CHEM 331 and 332	Physical Chemistry I and lab	4 credits
CHEM 334 and 335	Physical Chemistry II and lab	4 credits
CHEM 336 and 337	Introduction to Modern Analytical Chemistry and lab	5 credits
CHEM 361 and 362	Advanced Inorganic Chemistry and lab	4 credits
CHEM 366 and 367	Structural Biochemistry and lab	4 credits
CHEM 414	Computational Chemistry	2 credits

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**FORENSIC SCIENCE**


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TBA, *Chairperson*

FACULTY: TBA

**Aims and Objectives:**

The Forensic Science major at Gannon University allows students to focus their training in the area of biology or chemistry. Students who complete a degree in Forensic Science will be prepared for direct placement in the field or to continue their education in graduate or professional programs.

There are 15 semester hours of upper-level forensic science courses beyond the foundational courses in chemistry, biology, physics and math. The foundational courses include four semesters of chemistry with labs, two semesters of biology with labs, two semesters of physics with labs, two semesters of calculus, and one semester of statistics.

Students in the Forensic Science major will gain practical experience through the completion of a required research project or internship. This practical experience will facilitate employment opportunities following graduation. The employment opportunities within the northeast region of the U.S. for forensic technicians are particularly optimistic, and employment for forensic technicians is expected to grow by 6% from 2012 through 2022. Employment opportunities, especially in a consulting or full-time position, are also available in rapidly developing countries which are establishing forensic labs and programs.

Beyond entering the forensic field directly after graduation, there are many other vocational

opportunities or opportunities for continuation into graduate degree programs. The comprehensive curriculum is particularly suited to provide Gannon University students with the ability to pursue diverse career or educational options after graduation. Successful graduates may enter Master's or Ph.D. programs, Medical School, Dental School, or Law School. Alternatively, students may prepare for certification as a Crime Scene Investigator.

### Forensic Science Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
	<i>Fall</i>		<i>Spring</i>
2	First Year Seminar/CRJS 108	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	4	General Chemistry II and Lab/ CHEM 114 & 115
4	General Chemistry I and Lab/ CHEM 111 & 112	3	Sacred Scriptures/LTHE 121
3	Calculus I/MATH 140	3	Calculus II/MATH 141
4	Mol & Cellular Biology and Lab/ BIOL 122 & 123	4	Animal Form & Function & Lab/ BIOL 124 & 125
16		17	
SOPHOMORE			
	<i>Fall</i>		<i>Spring</i>
4	Organic Chemistry I and Lab/ CHEM 221 & 222	4	Organic Chemistry II and Lab/ CHEM 224 & 225
4	Fund of Physics I: Mechanics & Lab/ PHYS 210 & 211	4	Fund of Physics II: Fluids & Thermodynamics & Lab/ PHYS 212 & 213
3	Intro to Psys/PSYC 111	3	SPCH 111 or SPCH 113*
3	Intro to Philosophy/LPHI 131	4	Forensic Biology and Lab/ FRSC 261 & 262
3	Criminalistics I/CRJS 210	3	Applied Statistics/MATH 213
17		18	
JUNIOR			
	<i>Fall</i>		<i>Spring</i>
3	Investigative Concepts/CRJS 310	1	Leadership Seminar*
4	Specialized Science Elective	5	Intro to Modern Anal Chem & Lab/ CHEM 336 & 337
4	Specialized Science Elective	3	Criminal Law and Proc/CRJS 320
3	Theology II Series*/LTHE	3	Theology or Philosophy III Series*/ LTHE OR LPHI
3	Philosophy II Series*/LPHI	4	Forensic Chemistry and Lab/ FRSC 361 & 362
		2	Forensic Microscopy/FRSC 350
17		18	
SENIOR			
	<i>Fall</i>		<i>Spring</i>
3	Fine Arts*/LFIN	3	Senior Seminar/LBST 383
3	Criminal Evidence/CRJS 321 OR Expert Witnessing/CRJS 362	4	Advanced Forensic Science and Lab/ FRSC 461 & 462
4	Structural Biochemistry and Lab/ CHEM 366 & 367	4	Specialized Science Elective
		3	History without Borders/LHST 111

4 Specialized Science Elective  
 3 Specialized Science Elective  
 17

3 Literature Series\* /LENG  
 17

*\*Please refer to the undergraduate catalog for course options.*

**ADDITIONAL SPECIALIZED SCIENCE ELECTIVES: 19 CREDITS, CHOOSE ONE SET (MUST INCLUDE FRSC 480 AS PART OF CREDITS FOR EACH TRACK)**

**BIOLOGY TRACK**

Cellular Biochemistry and Lab/BIOL 373 & 374  
 Microbiology & Lab/BIOL 331 & 332  
 Genetics and Lab/BIOL 265 & 266  
 Cell Biology & Lab/BIOL 375 & 376  
 Environ Toxicology & Lab/ENV 400 & 401  
 Human Gross Anatomy & Lab/BIOL 365 & 366

Undergraduate Research or Internship/FRSC 480

**CHEMISTRY TRACK**

Computational Chemistry/CHEM 414  
 Instrumental Analysis & Lab/CHEM 408 & 409; **Required in this track**  
 Inorganic Chemistry/CHEM 361  
 Physical Chem & Lab/CHEM 331 & 332  
 Organic Chem & Lab III/CHEM 323 & 324  
 Chemical Literature/CHEM 356  
 Polymer Chemistry/CHEM 360  
 Environmental Toxicology & Lab/ENV 400 & 401

Undergraduate Research or Internship/  
 FRSC 480

**COURSE DESCRIPTIONS:**

**FRSC 261: Forensic Biology**

This course is an introduction to the fundamentals of forensic DNA analysis. Topics will include the basic structure of DNA, sample handling, analysis and quality assurance. The student will gain an understanding of the structural components of DNA, the application of protocols for the collection and storage of forensic samples, the extraction and amplification of DNA from samples, the application of DNA analysis in the legal system, and the utilization of DNA databases in forensics.

Co-requisite: FRSC 262

Pre-requisites: CHEM 221 & 222; BIOL 122 & 125

*3 credits, Spring*

**FRSC 262: Forensic Biology Lab**

This laboratory course consists of experiments designed to complement the material in FRSC 261. Experimental skill sets related to DNA analysis will be emphasized. The student will learn the appropriate use of laboratory notebooks and reports, the use of laboratory protocols surrounding forensic samples involving DNA evidence, and the application of DNA technology in forensic analysis.

Co-requisite: FRSC 261

Pre-requisites: CHEM 221 & 222; BIOL 122, BIOL 125

*1 credit, Spring*

**FRSC 350: Forensic Microscopy**

This course is an introduction to microscopy with a focus on practical applications in forensics. Topics will include basic optics, behavior of electromagnetic radiation, components of microscopes, and applications of forensic microscopy. The course will be lecture-based with a hands-on component.

Pre-requisites: BIOL 122-125; CHEM 224; PHYS 210, 211, 212, 213, or permission of instructor

*2 credits, Spring*

**FRSC 361: Forensic Chemistry**

A study of the application of analytical, chemical principles to the forensic science field. Topics include quality control, laboratory protocol, basic instrumentation, matrix effects, and

quantitative/qualitative analysis. The students will demonstrate an understanding of the application of analytical principles to forensic samples, the use of laboratory protocols surrounding forensic samples, the use of calibration, quality control and method validation for forensic samples, the principles and application of chromatography, immunoassays, and spectroscopy in forensic analysis, and analytical techniques for drug analysis of acidic drugs.

Co-requisite: FRSC 362

Pre-requisite: CHEM 224 & 225

*3 credits, Spring*

### **FRSC 362: Forensic Chemistry Lab**

This laboratory course consists of experiments designed to complement the material in FRSC 361. Experimental skill sets will be emphasized, and will focus on handling, processing, and interpretation of results of common forensic samples analyzed for chemical content. Particular focus will be placed on chromatographic and spectroscopic techniques, but other techniques may also be considered in both a hands-on and simulated setting. By the completion of the course, students will have the necessary skillset for basic chemical analysis of commonly encountered forensic samples. The student will demonstrate an understanding of the appropriate use of laboratory notebooks and reports, the use of laboratory protocols surrounding forensic samples, the use of calibration, quality control and method validation for forensic samples, the application of chromatography and spectroscopy in forensic analysis, and analytical techniques for drug analysis of acidic drugs.

Co-requisite: FRSC 361

Pre-requisite: CHEM 224 & 225

*1 credit, Spring*

### **FRSC 461: Advanced Forensic Science**

This course continues the study of forensic biology and forensic chemistry at the advanced level. Topics include the forensic analysis and the underlining principles associated with drugs, synthetic polymers, natural polymers (including DNA), and colorants. Textbooks and primary journal articles will be used as resources in this course. The student will gain an understanding of advanced principles of polymers and nucleic acids, the application of instrumental analysis to the quantitative, qualitative and comparative analysis of drugs, polymers and colorants, the challenges, solutions, and the future of forensic DNA analysis, analytical techniques for drug analysis of basic drugs, and the primary literature and its use in research and forensic science advancement.

Co-requisite: FRSC 462

Prerequisite: FRSC 261, 350, 361; BIOL 345; CHEM 408

*3 credits, Spring*

### **FRSC 462: Advanced Forensic Science Lab**

This laboratory course consists of experiments designed to complement the material in FRSC 461. Advanced application of experimental skill sets in combustion, DNA analysis, serological testing, and drug analysis, including reporting, will be emphasized. Additionally, data collection and professional reporting of results to the scientific and forensic community will be reviewed and required. The student will demonstrate an understanding of analysis of combustibles, advanced-level application and interpretation of results for serological and DNA testing of forensic samples, advanced-level application and interpretation of results for drug analysis, and how to construct lab reports in a professional science format relevant to the forensic field.

Co-requisite: FRSC 461

Pre-requisites: FRSC 261, 350, 361; BIOL 345; CHEM 408

*1 credit, Spring*

### **FRSC 480: Forensic Research/Internship**

This course is meant to provide the students with an individualized, hands-on learning experience in a mentored setting. Students will be exposed to selected topics in the field of forensic biology or chemistry to be solved by the students with advice and oversight from the faculty, with mentorship from the staff, or professional supervisor. Settings could include crime laboratories, research laboratories, federal or state agencies, or other sites approved by staff overseeing the course.

Pre-requisite: Sophomore standing or higher; permission of instructor

*1-3 credits*



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## MATHEMATICS

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GEOFFREY DIETZ, *Chairperson*

FACULTY: *Professor:* Michael Caulfield. *Associate Professors:* Geoffrey Dietz, Patrick Headley, David Prier. *Assistant Professor:* Christine Cedzo.

### Aims and Objectives:

Mathematics majors at Gannon must satisfactorily complete a minimum of forty-eight credits ranging over such areas as discrete mathematics, calculus, abstract algebra, mathematical analysis, probability, statistics, linear algebra, differential equations, and mathematical modeling. In addition, mathematics majors will receive a significant career-enhancing experience through placement in an appropriate internship position or through a challenging undergraduate research project.

The Mathematics curriculum is designed to allow students to develop a strong secondary interest in allied fields such as business, computer science, economics, physics, biology, chemistry, engineering or education. There is ample opportunity to select the most beneficial combination of courses to achieve the student's goals. The content of a particular student's curriculum requires department approval to insure proper competency by graduation. Mathematics majors receive preparation for the first Actuarial Exam administered by the Society of Actuaries. Students who pursue a concentration in Actuarial Science will receive preparation for two additional exams.

This competency required of students in mathematics has resulted in careers in research, in education at all levels, and in technical positions in industry and government. Mathematicians are increasingly in demand in today's employment market. Mathematics majors, by satisfying additional requirements of the School of Education, can earn Teacher Certification in Secondary Education for the State of Pennsylvania.

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## COURSE DESCRIPTIONS:

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### MATH 055: Algebra Refresher

Exponents, polynomial and rational expressions, factoring, linear equations and inequalities, rational equations, graphing, functions, and applications. This course will meet 4 hours per week during a regular semester, but will count as 3 credits of load for student financial aid and quality point average considerations. It may not be used to satisfy any graduation requirements in any degree program.

Prerequisite: One year of high-school algebra

*3 credits (see description)*

### MATH 100: First Year Seminar

This course is a discussion/experience-based course to orient the new students to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life and to encourage development of academic, personal and spiritual aspects of the student's life.

*2 credits, Fall*

### MATH 101: Mathematics in Human Progress

Most of the mathematics discussed has been developed in the last century. Topics covered are based on down-to-earth, real-life problems and will include: Mathematics of social choice including group decision making and democratic voting methods; Management science including methods for solving problems involving organization and management of complex activities; Growth and symmetry including population growth, geometrical patterns of biological growth and fractals.

Prerequisite: Two years of high-school algebra or MATH 055

*3 credits, Spring*

**MATH 103: Quantitative Literacy**

This course covers a broad array of practical mathematical topics found in everyday life. Topics include: number sense, charts and graphs, basic probability and statistics, linear and exponential models, financial mathematics, geometry, and logic.

Prerequisite: Two years of high school algebra or MATH 055 *3 credits, Fall*

**MATH 105: Fundamentals of Mathematics**

This course investigates the nature of mathematical relationships through problem solving. Topics include basic number theory, algebraic topics, geometry, and systems of numeration.

Prerequisite: Two years of high school algebra. *3 credits, Spring*

**MATH 111: College Algebra**

Polynomial, rational, radical, exponential, and logarithmic functions and equations; systems of equations; matrices and determinants; sequences and series; binomial theorem.

Prerequisite: Two years of high school algebra or MATH 055 *3 credits, Fall, Spring*

**MATH 112: Trigonometry**

Trigonometric functions, radian measure, trigonometric identities and equations, solution of triangles, DeMoivre's theorem, vectors, polar coordinates.

Prerequisite: MATH 111, or concurrently with MATH 111 or equivalent competency. *3 credits, Fall, Spring*

**MATH 115: Applied Mathematics for Business**

The course provides a mathematical foundation for students majoring in business. Topics include linear, quadratic, exponential, and logarithmic functions; mathematics of finance; limits; differentiation; and applications of differentiation. Applications to business and economics are emphasized throughout the course.

Prerequisite: Two years of high school algebra. *3 credits, Fall, Spring*

**MATH 135: Precalculus**

The course addresses concepts in algebra and trigonometry through the use of functions. The relationship between functions and their graphs is examined in detail. The course also covers topics in the mathematics of functions such as composition and inverses. Rates of change are studied with a view toward calculus.

Prerequisite: Two years of high school algebra. *3 credits, Fall*

**MATH 140: Calculus 1**

Limits; derivatives of algebraic and trigonometric functions; graphing; related rates; optimization problems.

Prerequisite: Trigonometry. *3 credits, Fall, Spring*

**MATH 141: Calculus 2**

The definite and indefinite integrals; applications of integration; techniques of integration; calculus of the exponential, logarithmic, and other transcendental functions.

Prerequisite: MATH 140 *3 credits, Fall, Spring*

**MATH 213: Applied Statistics**

Designed for students majoring in the natural or social sciences. Topics include measures of central tendency and dispersion, combinations and permutations, sampling distributions, testing hypotheses, Chi-Square applications, linear regression and correlation.

Prerequisite: High school algebra *3 credits, Fall, Spring*

**MATH 222: Discrete Mathematics 1**

Logic, sets, functions, mathematical induction, algorithms, counting methods, recurrence relations, graphs.

Prerequisite: MATH 111, MATH 115 or MATH 140 *3 credits, Fall*

**MATH 223: Discrete Mathematics 2**

Relations, topics in graph theory, tree traversal, spanning trees, Boolean algebra, logic gates, circuits, automata, Turing machines.

Prerequisite: MATH 222

*3 credits, Spring*

**MATH 226: Geometry**

Synthetic, analytic, metric, and transformational approaches to geometry, emphasizing the importance of definitions, axioms, and proof in geometry. Ancient and modern approaches to axioms, Euclid's Elements, triangle concurrences, plane isometries, and symmetry groups. Coordinate, taxicab, and hyperbolic geometries including the Poincare disk model. Use of geometric software.

Prerequisite: MATH 222

*3 credits, Fall, even years*

**MATH 242: Calculus 3**

Infinite sequences and series; power series; Taylor series and polynomials; parametric equations; polar coordinates; vectors in the plane and space; vector-valued functions.

Prerequisite: MATH 141

*3 credits, Fall, Spring*

**MATH 243: Calculus 4**

Partial differentiation; multiple integration; vector calculus.

Prerequisite: MATH 242

*3 credits, Fall, Spring*

**MATH 252: Linear Algebra**

Systems of linear equations; matrix algebra; determinants; vector spaces; linear transformations; eigenvalues and eigenvectors; inner products.

Prerequisite: MATH 242

*3 credits, Spring*

**MATH 260: History of Mathematics**

Survey of the development of mathematics from the earliest historic times to the present. A true appreciation of mathematics is developed through the knowledge of the history of mathematics. The cultural and historical significance of mathematics will be discussed.

Prerequisite: MATH 140

*3 credits, Spring, odd years*

**MATH 301: Mathematical Analysis 1**

Elementary set theory; properties of the real numbers; topology of the real line; sequences of functions; limits of functions; continuity; uniform continuity; differentiation of real-valued functions; integration.

Prerequisite: MATH 243

*3 credits, Fall, even years*

**MATH 302: Mathematical Analysis 2**

Additional topics in real analysis: integration; infinite series; differentiation of vector-valued functions; integration of vector-valued functions.

Prerequisite: MATH 301

*3 credits*

**MATH 304: Differential Equations**

Ordinary differential equations (ODEs) with applications to science and engineering. Solution methods for first-order ODEs, linear ODEs, and systems of ODEs; Laplace transforms; numerical methods; and critical point behavior.

Prerequisite: MATH 242

*3 credits, Fall, Spring*

**MATH 308: Applied Complex Variables**

A study of complex algebra, analytic functions, integration in the complex plane. Taylor and Laurent expansions, singularities, calculus of residues and meromorphic functions.

Prerequisite: MATH 243

*3 credits, Spring, odd years*

**MATH 309: Abstract Algebra**

Fundamentals of groups, rings, fields, and homomorphisms.

Prerequisite: MATH 222 and MATH 243

*3 credits, Fall, odd years*

**MATH 310: Number Theory and Cryptography**

Introduction to the theory of integers and basic cryptography. Topics include: primes, divisibility, unique factorization, congruences, applications to cryptography (including RSA and Diffie-Hellman), primitive roots, and quadratic reciprocity.

Prerequisite: MATH 222

*3 credits, Spring, even years*

**MATH 312: Probability and Statistics 1**

Enumeration, probability, independence, probability distributions, random variables, expectation, mean, variance, moment generating functions, Central Limit Theorem, sampling distributions, and other selected topics.

Prerequisite: MATH 141

*3 credits, Fall*

**MATH 313: Probability and Statistics 2**

Point and interval estimations, hypothesis testing, Neyman-Pearson lemma, likelihood ratio tests, tests concerning means, proportions and variances, Chi-square tests, analysis of variance, regression, correlation analysis, nonparametric methods.

Prerequisite: MATH 312

*3 credits, Spring, odd years*

**MATH 314: Numerical Analysis**

Taylor polynomials, machine representation of numbers, computational error, interpolation, root finding, systems of linear equations, curve fitting, numerical differentiation and integration.

Prerequisites: MATH 141 and CIS 180

*3 credits*

**MATH 320: Mathematical Modeling**

Construction and analysis of mathematical models for the solution of 'real-world' problems.

Topics discussed may include genetics, predator-prey problems, population growth, spread of disease, finance, etc.

Prerequisite: MATH 304

*3 credits, Fall*

**MATH 331: Financial Mathematics 1**

A course in the mathematical theory of interest. Time value of money; annuities; loan repayment; bonds; general cash flows and portfolios; immunization. This course follows the syllabus for the Interest Theory segment of actuarial exam FM/2.

Prerequisite: MATH 242

*3 credits, Fall, odd years*

**MATH 332: Financial Mathematics 2**

A course in financial economics and derivatives markets. General derivatives; forwards and futures; swaps; hedging and risk management; European, American, and exotic options; Brownian motion; valuation of derivatives including binomial and Black-Scholes models; Monte-Carlo simulation; binomial interest rate models. This course follows the syllabus for the Financial Economics segment of actuarial exam FM/2 and for exam MFE/3F.

Prerequisite: MATH 331, Co-requisite: MATH 304

*3 credits, Spring, even years*

**MATH 341: Methods of Teaching Secondary Mathematics**

This course is designed to prepare students to teach mathematics in secondary schools. It includes an examination of theories, research, and methods related to student learning and achievement in mathematics. Students will teach a variety of mathematics lessons as well as analyze the strategies of others. Students will also gain experience with graphing calculators and Geometer's Sketchpad.

Prerequisite: MATH 243

*3 credits, Fall, odd years*

**MATH 375: Internship**

Student obtains professional work experience in a position involving substantial use of mathematics.

Prerequisite: Permission of advisor.

*3 credits*

**MATH 380: Undergraduate Mathematics Research**

Student obtains an introduction to the nature and methods of modern mathematics research after selection of an appropriate project under the guidance of a faculty mentor.

*3 credits*

**MATH 391-394: Directed Study in Mathematics**

Supervised reading in selected subjects approved by a three-person department committee.  
May be taken more than once for a total of at most four credits.  
Prerequisite: Approval of faculty supervisor. 1-3 credits

**MATH 395-399: Special Topics in Mathematics**

Topics which are not covered by regularly scheduled courses but have the approval of a three-person department committee. At most six credits of Special Topics may be used toward meeting departmental requirements for mathematics electives.  
Prerequisite: Consent of the department chair. 3 credits

**Mathematics Curriculum (128 - 129 credits)**

(Numerals in front of courses indicate credits)

FRESHMAN	
<i>First Semester</i>	
3	College Composition/LENG 111
3	History Without Borders/LHST 111
3	Calculus 1/MATH 140
3	Prob Solv & Comp Prog with Lab/ CIS 180/181
3	Intro to Philosophy/LPHI 131
2	First-Year Seminar
17	
SOPHOMORE	
<i>First Semester</i>	
3	Calculus 3/MATH 242
3	Discrete Mathematics 1/MATH 222
3	Philosophy II Series/LPHI
4	Science with lab *1
3	Literature Series/LENG
16	
JUNIOR	
<i>First Semester</i>	
3	Cognate Elective *3
3	Social Science
3	Probability & Statistics I/MATH 312
3	MATH 301 or MATH 309 *2
3	General Elective
15	
SENIOR	
<i>First Semester</i>	
3	Senior Seminar/LBST 383
3	MATH 301 or MATH 309 *2
3	Mathematical Modeling/MATH 320
3	Cognate Elective *3
3	General Elective
15	
<i>Second Semester</i>	
3	Critical Analysis & Composition/ LENG 112
3	Applied Statistics/MATH 213
3	Calculus 2/MATH 141
3	CIS 182/183 or CIS 255
3	Sacred Scriptures/LTHE 121
15	
<i>Second Semester</i>	
4	Science with lab *1
3	Theology or Philosophy III Series/ LTHE or LPHI
3	Linear Algebra/MATH 252
3	Calculus 4/MATH 243
3	Fine Arts Series/LFIN
1	Leadership Seminar
17	
<i>Second Semester</i>	
3	Public Speaking/SPCH 111
3	Differential Equations 1/MATH 304
3	Mathematics Elective *3
3	300 level Mathematics *4
3	Cognate Elective *3
3	Theology II Series/LTHE
18	
<i>Second Semester</i>	
3	300 level Mathematics *4
3	Internship/Research/MATH 375 or 380
3	Mathematics Elective *3
3	Cognate Elective *3
3	General Elective
15	

- \*1 Complete an 8-credit sequence of courses and labs: BIOL 122-125, CHEM 111/112 & 114/115, PHYS 210/211 & 212/213, or PHYS 210/211 & 214/215. (PHYS is recommended.)
- \*2 Required Mathematics: MATH 301 (Fall, even years) and MATH 309 (Fall, odd years)
- \*3 All mathematics and cognate electives must be approved by the Mathematics advisor.
- \*4 Complete two MATH sequences by taking two of MATH 308, 310, 313, or 332.

**Mathematics Curriculum with Secondary Education (136 credits)**

Students majoring in Mathematics qualify for Teacher Certification in Mathematics/ Secondary Education.

**Aims and Objectives**

The objectives of the program are: (1) to give the students an opportunity to become broadly educated in the areas of Mathematics, and (2) to provide a program of teacher education which promotes growth, development, professionalism and expertise for successful teaching.

Students who wish to prepare themselves as secondary Mathematics teachers must make formal application to the teacher education program through the School of Education. For a detailed explanation of all requirements refer to the catalog portion under Education.

*(Numerals in front of courses indicate credits)*

FRESHMAN		Second Semester	
First Semester			
3	College Composition/LENG 111	3	Critical Analysis & Composition/LENG 112
3	Introduction to Philosophy/LPHI 131	3	Psych of Learn & Teach/EDCR 101
3	Public Speaking/SPCH 111	3	Overview of Special Educ/SPED 101
1	Foundations of Teach/EDCR 103	3	CIS 182/183 or CIS 255
2	First-Year Seminar/EDCR 104^	3	Applied Statistics/MATH 213
3	Prob Solv & Comp Prog w/lab/ CIS 180/181	3	Calculus 2/MATH 141
3	Calculus 1/MATH 140		
18		18	
SOPHOMORE YEAR		Second Semester	
First Semester			
3	Literature Series/LENG	3	Phil of Ethical Responsibility/LPHI 237 (or LTHE 227)
3	Instr Design & Sec Ed Classroom/ EDCR 206	1	Leadership Seminar/LHES 240
0	Secondary Education Practicum/ EDFL 101+	3	History of Math/MATH 260 or DiffEq1/MATH 304 *1
4	Science with lab *2	3	Calculus 4/MATH 243
3	Calculus 3/MATH 242	3	Linear Algebra/MATH 252
3	Discrete Mathematics 1/MATH 222	4	Science with lab *2
16		17	
JUNIOR YEAR		Second Semester	
First Semester			
3	Sacred Scripture/LTHE 121	3	Theology II Series/LTHE
3	Philosophy II Series/LPHI	3	History Without Borders/LHST 111
3	Probability & Statistics 1/MATH 312	3	Fine Arts Series/LFIN
3	MATH 226 or MATH 341 *3	3	History of Math/MATH 260 or DiffEq1/MATH 304 *1
3	MATH 301 or MATH 309 *4		

1	Methods/Materials for Instr Seminar/EDCR 321	3	MATH 308 or MATH 310 *5
0	Sec Educ Field Experience I +/- EDFL 102	3	Meet Need Stu Excep 7-12/ SPED 340
		0	Sec Educ Field Experience III +/- EDFL 103
<hr/> 16		<hr/> 18	
SENIOR YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Assessment/Evaluation/EDCR 330^	3	Professional Seminar/EDCR 401
3	Literacy Dev, Strat, Assessments/ MLED 301^	12	Student Teaching/EDFL 410
3	Methods/Materials: for Teaching/ ESL/ELL *		
3	Mathematical Modeling/MATH 320		
3	MATH 226 or MATH 341 *3		
3	MATH 301 or MATH 309 *4		
<hr/> 18		<hr/> 15	

^ Field experience embedded throughout semester (6-15 hours)

+ Field experience embedded throughout semester (60 hours)

\*1 Required Mathematics: MATH 260 (Spring, odd years) and MATH 304 (Spring, even years)

\*2 Required Science: BIOL 122-125, CHEM 111/112 & 114/115, PHYS 210/211 & 212/213, or PHYS 210/211 & 214/215. (PHYS is recommended.)

\*3 Required Mathematics: MATH 226 (Fall, even years) and MATH 341 (Fall, odd years)

\*4 Required Mathematics: MATH 301 (Fall, even years) and MATH 309 (Fall, odd years)

\*5 Required Mathematics: MATH 308 (Spring, odd years) OR MATH 310 (Spring, even years)

### Mathematics Curriculum with Concentration in Actuarial Science (128 credits)

This concentration augments the mathematics curriculum with courses in Economics, Finance, Risk Management, and Financial Mathematics. It provides preparation for three exams administered by the Society of Actuaries and the Casualty Actuarial Society: P/1 (Probability), FM/2 (Financial Mathematics), and MFE/3F (Financial Economics). In addition, the curriculum has been approved by the actuarial societies as satisfying Validation by Educational Experience (VEE) requirements in Economics and Corporate Finance.

(Numerals in front of courses indicate credits)

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	College Composition/LENG 111	3	Critical Analysis and Composition/ LENG 112
3	Principles of Microeconomics/BCOR 111		
3	Calculus 1/MATH 140	3	Sacred Scripture/LTHE 121
3	Prob Solv & Comp Prog with lab/ CIS 180/181	3	Applied Statistics/MATH 213
3	Intro to Philosophy/LPHI 131	3	Calculus 2/MATH 141
2	First-Year Seminar	3	Database Mgmt Sys/CIS 255
<hr/> 17		<hr/> 15	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Prin of Accounting I/BCOR 214	3	Philosophy or Theology III Series/ LPHI or LTHE
3	Calculus 3/MATH 242		

3	Discrete Mathematics 1/MATH 222	4	Science with lab *1
3	Public Speaking/SPCH 111	3	Linear Algebra/MATH 252
4	Science with lab *1	3	Calculus 4/MATH 243
		3	Prin of Accounting II/BCOR 215
		1	Leadership Seminar
16		17	

JUNIOR

*First Semester*

3	Literature Series/LENG
3	History Without Borders/ LHST 111
3	Financial Management I/BCOR 311
3	MATH 312 or MATH 331 *3
3	MATH 301 or MATH 309 *2
3	Cognate Elective *5
18	

*Second Semester*

3	Prin of Macroecon/BCOR 112
3	Differential Equations/MATH 304
3	MATH 313 or MATH 332 *4
3	Philosophy II Series/LPHI
3	Financial Management II/FINC 312

SENIOR

*First Semester*

3	Senior Seminar/LBST 383
3	MATH 312 or MATH 331 *3
3	MATH 301 or MATH 309 *2
3	Mathematical Modeling/MATH 320
3	Theology II Series/LTHE
15	

*Second Semester*

3	Cognate Elective *5
3	Internship/Research/MATH 375 or 380 *1
3	MATH 313 or MATH 332 *4
3	Fine Arts Series/LFIN
3	Mathematics Elective
15	

- \*1 Complete an 8-credit sequence of courses and labs: BIOL 122-125, CHEM 111/112 & 114/115, PHYS 210/211 & 212/213, or PHYS 210/211 & 214/215. (PHYS is recommended.)
- \*2 Required Mathematics: MATH 301 (Fall, even years) and MATH 309 (Fall, odd years)
- \*3 Required Mathematics: MATH 312 (Fall, even years) and MATH 331 (Fall, odd years)
- \*4 Required Mathematics: MATH 313 (Spring, odd years) and MATH 332 (Spring, even years)
- \*5 Cognate electives must be approved by the Mathematics advisor. Preferred cognates are RISK 300, RISK 321, RISK 325, or RISK 425.

**MATHEMATICS MINOR**

A total of 24 credits is required for a minor in mathematics, including MATH 140, 141, 242, and 243; and 12 credits chosen from among any MATH courses at the 200 level or higher.

**STATISTICS MINOR**

A total of 24 credits in mathematics is required for a minor in statistics, including MATH 140, 141, 242, 243, 252, 213, 312, and 313.

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**MEDICAL LABORATORY SCIENCE**

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KARLA J. MASHBURN, M.S., MLS (ASCP)<sup>CM</sup>, *Program Director*

**Program Goals**

The goal of the Medical Laboratory Science Program is to provide a solid program of study that qualifies students for admission to a hospital-based program for clinical laboratory education. The program involves three years of undergraduate study at Gannon and a fourth



year of clinical education at a hospital-based program accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS). Currently, Gannon is affiliated with the medical laboratory science programs of Saint Vincent Hospital, Erie, Pennsylvania, UPMC Chautauqua WCA, Jamestown, New York, and Conemaugh Memorial Medical Center, Johnstown, Pennsylvania. Students may also apply to other accredited hospital based programs even though these programs are not affiliated with Gannon.

The Medical Laboratory Science Program prepares students to become competent medical laboratory professionals for entry-level work, which is a solid stepping stone to diverse careers in health care and other settings. Grounded in the liberal arts, sciences and professional specialization, the rigorous comprehensive curriculum is designed to promote the development not only of the technical skills inherent in the field but also critical, analytical, and problem-solving skills. It articulates the mission of Gannon University.

### **Curriculum Overview**

The curriculum draws heavily on biology and chemistry and provides an opportunity for students to minor in either discipline. The hands-on experience during the clinical laboratory education in the senior year provides students intensive experiential learning, which allows them to further understand and apply their science education. Many medical preventive, diagnostic and therapeutic decisions involve testing and analyzing laboratory test results. By performing these responsibilities behind the scene, medical laboratory scientists are important members of the healthcare team.

### **Graduates' Competencies**

Graduates' entry-level career competencies meet the accreditation standards of the medical laboratory science profession. General and specific competencies pertain to professional and ethical considerations, professional laboratory skills, communication, computerization and instrumentation, management, and education. The course content and clinical laboratory experience encourage excellence, independence and confidence in the application of skills, clinical theory and problem solving. Students provide service to patient care during their clinical internship. Graduates are well prepared to pass the national Medical Laboratory Scientist (MLS) certification exam required by the American Society for Clinical Pathology (ASCP) Board of Certification (BOC).

### **Career Opportunities**

Medical laboratory scientists are problem-solvers, dealing with the complexities and outcomes of medicine and science. They provide invaluable service to patient care by performing a wide range of laboratory tests, confirming the accuracy of test results, and reporting the test results to the pathologists and other physicians. Medical laboratory scientists work in blood banking, chemistry, hematology, immunology, and microbiology. They apply their solid foundation in the sciences and medical laboratory education to the screening, diagnosis, and treatment of diseases.

Practice settings for medical laboratory scientists include hospitals, independent laboratories, clinics, public health agencies, and industries. Molecular diagnostics, molecular biotechnology companies, and other specialized laboratories offer additional career opportunities. Experienced medical laboratory scientists have opportunities to advance their career by specializing in certain areas, such as cell marker technology, bioengineering and cancer research, drug testing, therapeutic drug monitoring and biogenetics. Industry offers career opportunities in product development, marketing, sales, and quality assurance.

Currently, the demand for medical laboratory scientists far exceeds the supply of qualified laboratory professionals. With continued population growth and medical advances, the need for medical laboratory scientists is expected to increase.

## **Application for Clinical Internship and Degree Completion**

In general, students apply for admission to hospital-based programs at the start of the fall semester in their junior year, and upon acceptance, begin their clinical education the following summer. Students will have completed all their prerequisite courses prior to their clinical education. Because each hospital-based program has a different calendar, it is important for students to obtain information about individual programs as early as possible. The program director at Gannon assists students with the application process; however, the University does not guarantee admission of students to the hospital-based programs. These programs conduct their own selection process. Selection of students for admission to the hospital laboratory program is based primarily on grade point average (GPA), typically a 3.0 or higher. In addition, hospital-based programs typically require a science GPA of 2.8 or higher. Therefore, students with a low GPA, especially in the sciences, may not be accepted by the hospitals for the laboratory portion of the program. Students should know the requirements of each program they are considering.

While students are completing their laboratory education, they are considered students of that program and do not register at Gannon. They are governed by the academic policies of their laboratory education program. They should still adhere to certain university deadlines that affect their degree completion. For example, they are responsible for applying for graduation in November.

Directors of affiliated hospital-based programs send students' grades to Gannon to be recorded on the students' transcripts.

Students who complete Gannon's three-year academic requirements and successfully complete their fourth year of studies (approximately 12 months) at an accredited medical laboratory science program will be awarded the Bachelor of Science degree with a major in medical laboratory science. Students graduate in summer following completion of their laboratory education. Graduates are eligible to take a national certification test given by the Board of Certification of the American Society for Clinical Pathology (ASCP). Those who pass the exam may use the initials, MLS (ASCP)<sup>CM</sup> after their name, showing proficiency in Medical Laboratory Science.

The following course descriptions are for the courses offered by hospital-based medical laboratory science programs. Hospital programs may have different course titles.

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## **COURSE DESCRIPTIONS:**

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### **MDTC 410: Hematology and Coagulation**

The course includes a study of the blood and blood forming tissues and their relation to the care of patients as they are correlated with the entire clinical condition. *6 credits*

### **MDTC 420: Clinical Chemistry (includes instrumentation and RIA)**

This course includes a brief review of analytical chemistry and qualitative analysis and stresses the chemistry of proteins, lipids, carbohydrates, endocrinology, vitamins, hormones, enzymes, etc., and the physiology, metabolisms, and methodologies used in the study of these substances in relation to biologic processes as found in health and pathologic states. Clinical correlation is made with the various situations in which the substances are altered. *8 credits*

### **MDTC 430: Immunohematology and Blood Banking**

Immunohematology emphasizes the application of principles of red cell antigens which are detectable only by the reactivity of red cells with antibodies corresponding to the antigens. Topics include ABO groupings, Rh factor, and numerous other blood group systems. These are all correlated with the compatibility of transfused blood and the various procedures needed to test for this compatibility. *4 credits*

### **MDTC 440: Urinalysis**

The course considers the examination of urine and all other body fluids, such as cerebral

spinal fluid, feces, gastric fluid, seminal fluid, amniotic fluid, etc. Emphasis is placed on anatomy and physiology of the kidney and urinary system, methodologies, clinical correlation, kidney function tests, microscopic examination and urinary calculi. *2 credits*

**MDTC 450: Microbiology (includes mycology, parasitology, virology and microbiology)**

The course includes the study of the various microorganisms, i.e. bacteria, fungi, rickettsia, parasites, and viruses recovered in clinical material. The critical identifying characteristics of the organisms, the diseases with which they are commonly associated, and the sites from which they are commonly isolated are presented. Fluorescent microscopy and its application to identification of microorganisms are presented. *8 credits*

**MDTC 460: Immunology and Serology**

The course encompasses the serologic reactions employed in the diagnosis of bacterial, parasitic, rickettsial, and viral diseases. The principles of antigen-antibody reactions are developed and the various procedures including agglutination, flocculation, precipitation, and complement fixation are stressed. *4 credits*

**MDTC 470: Medical Technology Education**

Basic principles of education to include lecture presentation and preparation, writing behavioral objectives, taxonomy levels, curriculum development, and evaluation procedures are presented. Each student is required to give one lecture to include outline, objectives, and some form of evaluation. *0 credit*

**MDTC 480: Management and Supervision**

Principles of management techniques, budget, personnel practices, laboratory supplies, procurement of equipment. Federal and State Regulations, lab safety, medical/legal matters, and psychology of management are presented. *0 credit*

**Medical Laboratory Science Curriculum**

(Numerals in front of courses indicate credits)

**FRESHMAN**

*First Semester*

3	Molecular Cellular Biology/BIOL 122
1	Molecular Cellular Lab/BIOL 123
3	General Chemistry I/CHEM 111
1	General Chemistry I Lab/CHEM 112
3	College Algebra/MATH 111
3	College Composition/LENG 111
2	First-Year Seminar

16

*Second Semester*

3	Animal Form & Function/BIOL 124
1	Animal Form & Funct Lab/BIOL 125
3	General Chemistry II/CHEM 114
1	General Chem II Lab/CHEM 115
3	History Without Borders/LHST 111
3	Crit Analysis & Comp/LENG 112
3	Sacred Scriptures/LTHE 121

17

**SOPHOMORE**

*First Semester*

3	Microbiology I/BIOL 331
1	Microbiology Lab/BIOL 332
3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Introduction to Philosophy/LPHI 131
3	Public Speaking/SPCH 111
3	Computer Science Series/CIS 170-174

17

*Second Semester*

3	Psychology/PSYC 111
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Philosophy II Series/LPHI
3	Theology II Series/LTHE
3	Parasitology/BIOL 354
1	Parasitology Lab/BIOL 355

17

**JUNIOR**

*First Semester*

3	Structural Biochemistry/CHEM 366
1	Biochemistry Laboratory/CHEM 367

*Second Semester*

3	Genetics/BIOL 345
3	Literature Series/LENG

3	Fine Art Series/LFIN	3	Statistics/MATH 213 or PSYC 211
3	Theology or Phil III Series/LTHE or LPHI	3	Senior Seminar/LBST 383
3	Concepts in Physics/PHYS 101	3	Immunology/BIOL 338
1	Leadership Seminar	1	Immunology Lab/BIOL 339
<hr/> 14		<hr/> 16	

### Hospital Phase (12 months):

SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
6	Hematology & Coagulation/MDTC 410	2	Urinalysis/MDTC 440
8	Clinical Chemistry/MDTC 420	8	Microbiology/MDTC 450
4	Immunohematology/MDTC 430	4	Immunology & Serology/MDTC 460
<hr/> 18		<hr/> 14	
<i>Summer</i>			
0	Medical Technology Education/MDTC 470		
0	Management & Supervision/MDTC 480		
<hr/> 0			

**Total credits: 129**

### THE NEXT-STEP PROGRAM

The major goal of the Next Step curriculum is to provide opportunity for graduates of Medical Laboratory Technician (MLT) programs to earn their bachelor's degree at Gannon. The curriculum offers two tracks, Track A and Track B, to meet the academic requirements for a bachelor's degree as well as courses required by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The Next Step curriculum prepares both groups of students for graduate studies.

Track A provides a bridge for MLT graduates (with qualifying professional work experience) to complete their bachelor's degree which offers opportunities for further career advancement. This track provides for a blanket transfer of 32 credits from the Medical Laboratory Technician program, 33 other credits to be evaluated for transfer (or a total of 65 transfer credits), and 64 credits to be completed at Gannon. The courses (64 credits) are distributed among four semesters. This track includes Liberal Studies (seven courses or 19 credits specified in the University catalog for the Next Step Plan). The track requires 129 credits to complete.

Track B prepares MLT graduates (without qualifying work experience) for admission to clinical internship and entry-level practice. A student with an Associate of Science Degree may also follow this track. Track B has similar provision for transfer credits and Liberal Studies Core requirements; however because of the clinical internship (32 credits), the track requires three years to complete or 148 credits.

#### Track A

**Blanket transfer of 32 credits** from MLT Program

*(Numerals in front of courses indicate credits)*

#### 33 other credits that will be evaluated for transfer from an Associate Degree Program

- 4 Molecular Cellular Biology/Lab BIOL 122/123
- 4 Animal Form and Function/Lab BIOL 124/125
- 4 General Chemistry I/Lab/CHEM 111/112
- 4 General Chemistry II/Lab/CHEM 114/115
- 4 Organic Chemistry I/Lab/CHEM 221/222

- 4 Microbiology/Lab/BIOL 331/332
- 3 Math (Algebra/Trig/Calculus)
- 3 Computer Science Series
- 3 Introduction to Psychology/PSYC 111

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33

**Courses above that have not been completed will be additional degree requirements.**

**Additional Science and Math Courses: 29 credits**

- 3 Immunology/BIOL 338
- 1 Immunology/Lab BIOL 339
- 3 Genetics/BIOL 345
- 3 Parasitology/BIOL 354
- 1 Parasitology Lab/BIOL 355
- 3 Organic Chemistry I/CHEM 221
- 1 Organic Chemistry I Lab/CHEM 222
- 3 Organic Chemistry II/CHEM 224
- 1 Organic Chemistry II Lab/CHEM 225
- 3 Structural Biochemistry /CHEM 366
- 1 Structural Biochemistry Lab/ CHEM 367
- 3 Concepts in Physics/PHYS 101
- 3 Applied Statistics/ MATH 213 or  
Psychological Statistics/ PSYC 211

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29

16 Electives

**Liberal Studies for Next Step: 19 credits**

- 3 LTHE 121 Sacred Scripture
- 3 LPHI 131 Introduction to Philosophy
- 3 LENG Literature Series
- 3 LFIN Fine Arts Series
- 3 LTHE/LPHI Theology/Philosophy III Series
- 1 Leadership Seminar
- 3 LBST 383 Senior Seminar or approved capstone

Students are required to complete 19 credits in Liberal Studies. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/ Philosophy III Series, and the Senior Seminar or approved capstone at Gannon. Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program.

**Total = 129 credits**

**First Year (Junior Year)**

*First Semester*

- 3 Organic Chemistry I/CHEM 221
- 1 Organic Chemistry I Lab/CHEM 222
- 3 Intro to Sacred Scriptures/LTHE 121
- 3 Intro to Philosophy/LPHI 131
- 6 Electives

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16

*Second Semester*

- 3 Organic Chemistry II/CHEM 224
- 1 Organic Chemistry II Lab/CHEM 225
- 3 Concepts in Physics/PHYS 101
- 3 Theology or Philosophy III Series/  
LTHE or LPHI
- 3 Electives
- 3 Fine Arts/LFIN
- 1 Leadership Seminar

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17

Second Year (Senior Year)	
<i>First Semester</i>	
3	Structural Biochemistry/CHEM 366
1	Structural Biochemistry Lab/CHEM 367
3	Literature Series/LENG
3	Genetics/BIOL 345
3	Applied Statistics/MATH 213 or Psych Statistics/PSYC 211
3	Electives
16	
<i>Second Semester</i>	
3	Immunology/BIOL 338
1	Immunology Lab/BIOL 339
3	Parasitology/BIOL 354
1	Parasitology Lab/BIOL 355
3	Senior Seminar/LBST 383
4	Electives
15	

**Track B**

This track requires an internship in a NAACLS accredited program. The internship (50-51 weeks) provides 32 credits which are transferred to the students' transcript at Gannon.

**For information on the additional and mathematics science requirements and Liberal Studies, please see Track A.**

*(Numerals in front of courses indicate credits)*

32	Blanket transfer
33	Other credits for transfer evaluation
29	Additional science and math courses
3	Electives
19	Liberal Studies
32	Hospital Internship

Total credits from Gannon, including the hospital internship: 83 credits

First Year (Junior Year)	
<i>First Semester</i>	
3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Intro to Sacred Scriptures/LTHE 121
3	Intro to Philosophy/LPHI 131
3	Electives
13	
<i>Second Semester</i>	
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Fine Arts/LFIN
3	Concepts in Physics/PHYS 101
3	Theology or Philosophy III Series/ LTHE or LPHI
1	Leadership Seminar
14	
Second Year (Senior Year)	
<i>First Semester</i>	
3	Structural Biochemistry/CHEM 366
1	Structural Biochemistry Lab/CHEM 367
3	Genetics/BIOL 345
3	Literature Series/LENG
3	Applied Statistics/MATH 213 Or Psych Statistics/PSYC 211
13	
<i>Second Semester</i>	
3	Immunology/BIOL 338
1	Immunology Lab/BIOL 339
3	Parasitology/BIOL 354
1	Parasitology Lab/BIOL 355
3	Senior Seminar/LBST 383
11	

(Electives can be taken if full-time status is needed.)

Third Year (Hospital Phase: 32 Credits)	
<i>First Semester</i>	
6	Hematology and Coagulation/ MDTC 410
<i>Second Semester</i>	
2	Urinalysis/MDTC 440
8	Microbiology/MDTC 450

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8	Clinical Chemistry/MDTC 420	4	Immunology & Serology/MDTC 460
4	Immunohematology/MDTC 430		
18		14	

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*Summer Semester*

0	Medical Technology Education/MDTC 470
0	Management & Supervision/MDTC480

**Total: 148 credits**

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## NURSING (VILLA MARIA SCHOOL OF) - BSN

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PATRICIA MARSHALL, M.S.N., R.N., CCRN, *Undergraduate Program Director*

FACULTY: *Associate Professors:* Dr. Min Shik Kim, Dr. Sharon Thompson, Dr. Lisa Quinn.  
*Assistant Professors:* Valerie Baker, Gary Berringer, Kimberly Blount, Susan Carnes, Karen Lumia, Melissa Lund, Patricia Marshall, Dr. Kathleen Patterson. *Instructors:* Dr. Carol Amann, Diann Cooper, Lorraine Gdanetz, Dr. Dawn Joy, Antonio Mailto, Janet Minzenberger, Mary Beth Moreland.

The Villa Maria School of Nursing undergraduate and graduate programs and certificates are approved by the Pennsylvania State Board of Nursing and accredited by the Commission on Collegiate Nursing Education (CCNE) ([http://www.aacn\\_nche.edu/ccne\\_accreditation](http://www.aacn_nche.edu/ccne_accreditation))

Applicants to Gannon University Morosky College of Health Professions and Sciences, Villa Maria School of Nursing are admitted to the undergraduate nursing major based on established admission criteria. The study of professional nursing starts in the freshman year with clinical nursing courses beginning at the sophomore level. The curriculum is composed of three distinct but interrelated elements: (1) a common liberal core which is the same for all baccalaureate students in the University and which reflects the parent institution's concepts concerning a liberal education; (2) supportive courses which are required prerequisites for the development of the major; and (3) professional nursing courses which prepare the student for a bachelor of science in nursing. Of the total 128 credits required for graduation at Gannon University, the nursing major comprises 60 credits or 46.8 % of the total program of study.

All students must meet the Liberal Core requirements as well as prerequisite, support and required courses as established by the Villa Maria School of Nursing faculty to earn a Bachelor of Science in Nursing. The nursing curriculum is arranged in three sequential levels that build in complexity from simple to complex.

All nursing curriculum level one courses (Freshman and Sophomore years) must be completed before the student progresses to level two of the nursing curriculum. The level one support courses include: BIOL106, 107, 115, 116, 117, 118, 122 and 123 or their equivalents; CHEM 105 and 108 or their equivalents; DIET 202 or its equivalent; PSYC 222 or its equivalent; SOCI 110 or its equivalent; Statistics (PSYC 211, SOCI 351 or MATH 213) or its equivalent. Level two courses (Junior year) must be successfully completed prior to student progression to level three courses (Senior year). Exceptions in progression will be reviewed by the Undergraduate Program Director (See Villa Maria School of Nursing Handbook for complete listing of Policies and Procedures).

Upon successful completion of the prescribed program of study, Gannon University awards the Bachelor of Science in Nursing degree. The student is eligible, upon certification by the Villa Maria School of Nursing to take the NCLEX-RN licensing exam. Upon successfully passing the NCLEX-RN licensing exam the title Registered Nurse (R.N.) can be used.

The purpose of the professional nursing program is to prepare students for entry into

professional practice and provide an academic foundation for graduate study. The community-based baccalaureate program provides competencies, knowledge, values and roles that prepare professional nurses to provide safe, high quality care to diverse populations, in and across all environments. The program also prepares students for advanced study and to value life-long learning. The baccalaureate program in Nursing provides for a balanced study of natural and social sciences in addition to humanities within the content of professional education to promote critical thinking, effective communication, caring, respect, and concern for individuals, groups, and communities.

**The State Board of Nursing shall not issue a license or certificate to an applicant who has been convicted of a felonious act as identified in the Nurse Practice Act No. 1985-109. See complete policy in Nursing Handbook.**

Proof of current health records including a physical and specific health care provider testing and immunizations, health insurance, child abuse clearance, criminal clearance, Finger printing, American Heart Association, Health Care Provider CPR and the ability to meet the nursing student performance standards are required.

Policies specific to nursing standards and the Villa Maria School of Nursing are published and distributed annually in the Villa Maria School of Nursing handbook.

Students intending to apply to the graduate level physical therapy program may select nursing as a major field of study for the undergraduate degree. Summer coursework is required to obtain all the pre-requisites for the graduate level physical therapy program. A separate curriculum planner for BSN-NURS/Pre-PT is available on request from the Villa Maria School of Nursing.

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## **COURSE DESCRIPTIONS:**

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*(# indicates Clinical Laboratory Component)*

### **NURS 101: First-Year Seminar, Part One**

The First Year Seminar is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life and to encourage development of academic, personal and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered.

This first year seminar, offered by the Villa Maria School of Nursing, is the first in a series of two first year seminars. This seminar explores the history of professional nursing and introduces concepts underlying professionalism. The evolution of professional nursing, current educational patterns, nursing roles and practice settings, and nursing as a research-based practice are addressed. The university requirements for speech are begun with this seminar. Students are introduced to: the key concept of caring as it relates to their professional nursing role, the necessity of on-going reflection and self-evaluation; service learning and its role in personal and professional development. Students participate in a critical thinking entrance exam. **To qualify for credit as a Liberal Studies First Year Seminar, both NURS 101 and NURS 102 must be completed.** This seminar is open to all University students. *1 credit, Fall*

### **NURS 102: First Year Seminar, Part Two**

The First Year Seminar is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life and to encourage development of academic, personal and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered.

This first year seminar, offered by the Villa Maria School of Nursing, is the second in a series of two first year seminars. This seminar underscores nursing's role with the health care



environment, and emphasizes nursing's expertise in health promotion and risk reduction across the lifespan. The concept of the health-illness continuum is discussed as well as the impact of culture, ethnicity, and personal values on health behaviors. The university requirements for speech are begun with this seminar. Students are introduced to: legal and ethical principles that guide nursing practice; the impact of personal and professional values on decision making and professional behavior; basic models for delivery of nursing care; and human services agencies. **To qualify for credit as a Liberal Studies First Year Seminar, both NURS 101 and NURS 102 must be completed.** This seminar is open to all University students. Learning Cohort is formed with LENG 112.

*1 credit, Spring*

#### **NURS 204: Pharmacology and Nursing Implications of Medication Administration**

This course is designed to focus on nursing pharmacology by presenting a firm theoretical foundation and a practical approach to drug therapy applicable in community-based settings. The course presents general principles, theories, and facts about drugs. General characteristics of major classifications of medications are discussed. Specific information regarding action, dosage, side effects, adverse reactions, and contraindications of selected medications within each classification is addressed. Practical information is presented on how the nursing process is integrated with pharmacology. Specific drug information is discussed in relation to assessment, nursing diagnoses, client monitoring, interventions, client education, and evaluation of safe and effective drug therapy. Concurrent with NURS 205, BIOL 117, 118, NURS 207.

Prerequisites: CHEM 105, 108, BIOL 106, 107, 115, 116, 122, 123, PSYC 222, Math Competency Exam

*2 credits, Spring*

#### **#NURS 205: Nursing Practice Competencies**

This course focuses on the acquisition and use of nursing practice competencies required for the delivery of nursing care. Emphasis is placed on mastery of core scientific principles that underlie all competencies. It is not within the scope of this course to cover every skill encountered by the professional nurse. Strategies are employed which help the student identify those competencies essential for baccalaureate nursing practice and understand the scientific principles that underpin the application of those competencies. Students are expected to apply concepts and assessment techniques learned during previous courses. Supervised on-campus and off-campus labs are scheduled for student learning. Concurrent with NURS 204, 207, BIOL 117, 118.

Prerequisite: NURS 206, BIOL 115, 116, PSYC 222, Math Competency Exam

*2 clinical laboratory credits, Spring*

#### **#NURS 206: Health Assessment I**

This is the first course in a two-course sequence in health assessment for the professional nursing student. Successful completion of this course will provide the student a nursing approach for conducting and documenting a comprehensive health assessment. The student will learn to consider normal variations specific to gender, age, developmental level, and culture. A major expectation is that the student applies appropriate health promotion strategies to members of the peer group and to identified populations within the community. Health Assessment I focuses on concepts specific to the nursing process, the environment, and safety, as well as physical assessment techniques, interviewing and communication skills, the taking of health histories, vital signs and physical measurements, including height, weight, and body mass index.

In addition, specific health assessment data collection strategies are stressed, including general health, nutritional, mental status, pain, spiritual, and sexual. Expected findings across the lifespan are identified. The student learns documentation requirements, medical terminology and abbreviations, and begins the application of the principles of teaching and learning. Students are expected to identify appropriate health assessment data collection strategies and to apply appropriate health promotion strategies as outlined by course faculty. Supervised on-campus and off-campus clinical laboratory sessions are scheduled to enhance student learning. Prerequisite: PSYC 222

Corequisite: BIOL 115, 116

*1 clinical laboratory credit, Fall*

**#NURS 207: Health Assessment II**

This is the second course in a two-course sequence in health assessment for the professional nursing student. Successful completion of this course will enhance the nursing approach for conducting and documenting a comprehensive health assessment. The student will add to the knowledge gained in the first course in this series. A major expectation is that the student applies appropriate health promotion strategies to identified populations within the community.

Health Assessment II builds on all concepts learned in Health Assessment I, concepts specific to the nursing process, the environment, and safety, as well as physical assessment techniques, interviewing and communication skills, the taking of health histories, vital signs and physical measurements, including height, weight, and body mass index.

The student is expected to incorporate specific health assessment data collection strategies, including general health, nutritional, mental status, pain, spiritual, and sexual, as well as expected findings across the lifespan into nursing care strategies. In addition, the student is expected to document appropriately, use medical terminology and abbreviations correctly, and apply the principles of teaching and learning effectively.

Systems are introduced to increase physical assessment capabilities. Systems presented during this semester include: integumentary; head, eye, ear, nose, and throat [HEENT]; cardiovascular; respiratory; gastrointestinal [GI]; genitourinary [GU]; musculoskeletal; reproductive; neurological; peripheral vascular; lymphatic; and endocrine.

Students are expected to use concepts learned in Health Assessment I and add knowledge gained in Health Assessment II to increase competency in health assessment. Students are required to conduct a comprehensive health assessment and to apply appropriate health promotion strategies as outlined by course faculty. Supervised on-campus and off-campus clinical laboratory sessions are scheduled to enhance student learning.

Prerequisites: NURS 206, BIOL 115, 116, Math Competency Exam; Corequisites: BIOL 117, 118, NURS 204, NURS 205 *1 clinical laboratory credit, Spring*

**NURS 308: The Research Process in Nursing**

Using a comprehensive approach, this course is designed to stimulate student interest in the research process, theory development, and translation of findings to nursing practice. Students learn the components, principles, and methods of scientific research to become discerning consumers of research.

Prerequisite: PSYC 211, SOCI 351 or MATH 213

*3 credits, Fall or Spring*

**NURS 309: Influences on Health and Disease**

This course enables the student to explore values that underlie health seeking behaviors and the provision of care. Students explore various behaviors that influence health, wellness, and motivation to seek health care. The influences of family, culture, lifestyle choices, and at-risk behaviors are considered. The course enables the student to understand the basic concepts of biological, psychological, and spiritual processes and how these affect the health of an individual across the life span. The concepts of homeostasis, mechanisms of disease, and crisis and stress related to acute or chronic illness are explored specific to how these concepts affect the patient and the patient's family. An overview of shock, inflammation, infection, altered immune response, oncology, and fluid and electrolyte balance is presented. In addition, the student will learn the nursing responsibilities associated with care of the patient during the perioperative period. This course **must** be taken in the fall semester, at the beginning of the Junior level of nursing courses.

Prerequisites: BIOL 115, 116, 117, 118, CHEM 105, 108, DIET 202, NURS 204, 205, 206, 207

*2 credits, Fall*

**#NURS 310: Promoting Healthy Childbearing**

In this course students will have the opportunity to participate in the excitement, wonder, and mystery of birth - a learning experience that will forever influence the way they see the self, the world, and the future. They also have the opportunity to examine theoretical and clinical

experiences from a personal perspective and to explore their beliefs and values about childbirth and parenting.

Maternal-newborn nursing focuses on the health needs and responses of women, their partners and their families. The practice of maternal-newborn nursing is directed toward improving the quality of life for infants and the adults who assume primary responsibility for the infants well being. Nursing not only involves direct care to the childbearing family, but also includes health teaching and counseling. Concurrent with NURS 309.

Prerequisites: PSYC 222, NURS 204, 205, 206, 207, DIET 202

*5 credits (3 theory, 2 clinical laboratory), Fall or Spring*

#### **#NURS 311: Promoting Health and Health Restoration of Older Adults**

This course is designed to assist the student to adopt the behaviors inherent in the role of the professional nurse. Through lectures and planned clinical experiences, the student applies concepts of health promotion, risk reduction, disease prevention and health restoration for older adults. The student will work with older adults in a variety of community-based settings as they assess and manage physical, psychological, social and spiritual needs of older adults. Concurrent with NURS 309.

Prerequisites: PSYC 222, NURS 204, 205, 206, 207, DIET 202

*5 credits (3 theory, 2 clinical laboratory)*

#### **#NURS 312: Promoting Health in Childrearing Families**

This course provides students with the opportunity to apply the nursing process in promoting the health of pediatric populations. Three levels of prevention are addressed with students providing anticipatory guidance, wellness care, age appropriate screenings and illness care. Health promotion strategies are applied in such a manner as to recognize the family as the primary caregiver. Clinical experiences are community-based and include ambulatory clinics, educational and in-patient sites. Concurrent with NURS 309.

Prerequisites: PSYC 222, NURS 204, 205, 206, 207, DIET 202

*5 credits (3 theory, 2 clinical laboratory), Fall or Spring*

#### **#NURS 313: Promoting Health and Health Restoration in Adults I**

This course is designed to assist the student to gain an understanding of the health care needs of the acute or chronically ill adult. The course incorporates principles of developmental needs of adults, who have socially and culturally diverse backgrounds, in a variety of settings. Collaboration of the client and health care team in promoting and maintaining an optimal level of functioning are addressed. Health promotion, risk reduction, disease prevention and illness care in the adult client are emphasized.

Prerequisites: PSYC 222, NURS 204, 205, 206, 207, NURS 309, NURS 311, DIET 202

*5 credits (3 theory, 2 clinical laboratory), Spring*

#### **NURS 320: Leadership Seminar**

The Leadership seminar introduces students to a three dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for the students' leadership development as reflected both in this course and the co-requisite Theology or Philosophy Series III courses. This course, while housed in the Villa Maria School of Nursing, is open to all University students and meets the Liberal Core requirement for Leadership Seminar. The course **must** be taken concurrently with the Liberal Studies Core Theo/Phil III series course.

*1 credit, Fall or Spring*

#### **NURS 404: Nurse Power Politics (Capstone)**

This capstone Liberal Studies course is a seminar experience designed to provide the student with an opportunity to explore contemporary health care issues, to analyze these issues within the historical, professional context as well as the context of his or her value system, and to adopt a position regarding such issues. The student is engaged in an active exploration of his/

her own philosophy of nursing. Students are guided through this analysis by faculty who facilitate open discussions and exchange of ideas. Students develop skill in formulation of a position, consideration of others' viewpoints and defense of such a position, as well as to realize the potential impact and power of political activity. Students also realize the importance of individual action and commitment. Service learning is a required component of the course.

Prerequisites: Senior standing in nursing major *3 credits (seminar), Spring*

#### **#NURS 406: Promoting Health and Health Restoration in Adults II**

This course provides the student with knowledge and nursing strategies that can be applied to clients with complex health concerns including chronic, multisystem, life threatening, and end of life care. The focus is on strategies that recognize the quality of life and maintain optimal level of functioning. Students build upon concepts learned in previous courses and apply concepts from concurrent courses. Adult critical care nursing is emphasized.

Prerequisites: NURS 308, 309, 310, 311, 312, 313 *5 credits (3 theory, 2 clinical laboratory), Fall or Spring*

#### **#NURS 407: Promoting and Restoring Mental Health**

This course incorporates nursing care of persons who are mentally healthy as well as those with known psychiatric disorders. The course provides students with an opportunity to explore a broad range of nursing interventions to promote optimal mental health. The emphasis is placed on the use of advanced therapeutic communication techniques.

Prerequisites: NURS 308, 309, 310, 311, 312, 313 *5 credits (3 theory, 2 clinical laboratory), Fall or Spring*

#### **#NURS 414: Promoting Healthy Communities**

This course provides students a perspective of professional nursing at the community level of practice. Course content will provide an overview of specific issues and societal concerns that affect community health nursing practice; epidemiological applications in community health nursing; educational theories, models, and principles applied in community health nursing; risk factors and health problems for defined populations across the lifespan; issues and approaches in providing for the health care of defined populations in the community; specific health care needs and issues for populations at risk; communicable disease risk and prevention; and the diversity in the role of the community health nurse. Students apply previous knowledge and the nursing process in maximizing the health status of individuals, families, and defined populations within the community.

Prerequisites: NURS 308, 309, 310, 311, 312, 313 *5 credits (3 theory, 2 clinical laboratory), Fall or Spring*

#### **#NURS 415: Comprehensive Nursing Practicum**

This senior nursing practicum facilitates the students' ability to synthesize knowledge, skills, and experiences in selected health care settings. This experience enables the student to develop independence in professional practice. Individual goals and objectives are mutually determined by faculty and student to evaluate success in the practicum. Students are paired with an agency preceptor to attain individualized course objectives. A faculty-facilitated seminar is conducted weekly. Last semester of the Senior year.

Prerequisites: NURS 406; NURS 420 (may be taken concurrently)

*6 clinical laboratory credits (16 hours clinical and 2 hours seminar per week)*

#### **NURS 420: Management and Leadership Strategies for Professional Nursing**

This course focuses on the knowledge and skills related to the delivery of health care services within a professional nursing leadership context. Concepts, introductory knowledge related to fiscal management, quality care concepts, and staffing models are presented which provide the student a basic knowledge base required for effective management, organizational behavior, and assuming or assisting others in a leadership role in professional nursing practice. Additionally, this course provides skill acquisition necessary to apply principles in planning and delegating nursing care, and discusses developing creative roles for managing and leading in professional nursing.

Prerequisites: NURS 308, 309, 310, 311, 312, 313 or senior level standing

*2 credits, Fall*

## Elective Courses

The following courses are offered as electives to provide the student with the opportunity to investigate in more detail a specific area of interest.

### **NURS 215/GNURS 515 Native American Peoples: State of the Nation's Health.**

This course provides learners with an opportunity to explore the state of Native American health. Students explore the historical, legal, socioeconomic and cultural factors which impact the current health status of Native Americans. Students also explore their own attitudes and beliefs regarding the Native American culture. Students are guided to an understanding of these concepts through exposure to art, music and literature as well as contact with Native American persons. Themes of sovereignty and native healing practices are central to the course. Open to all majors.

Prerequisites: Sophomore level standing or higher

*3 credits*

### **NURS 343/GNURS 543: Palliative Care**

This course provides an examination of the theory of palliative care focusing on the complexities of caring for terminally ill and dying patients as well as those with life-threatening or chronic illness. This course is designed for students from a variety of health care disciplines. Aspects of the interdisciplinary team in providing a comprehensive approach to palliative care are emphasized. The physical, psychosocial, cultural and spiritual needs of patients and families as well as ethical and legal issues concerning care are explored. Open to all majors.

Prerequisites: LTHE 121, LPHI 131, and minimum of junior standing as an undergraduate student recommended.

*3 credits*

### **NURS 416: Special Topics in Nursing**

Special topic courses are developed by faculty around a specific area of interest. Objectives may be defined by faculty or mutually identified by students and faculty. *1-3 credits, Fall or Spring*

### **#NURS 417: Elective Clinical Practicum**

The Elective Clinical Practicum provides senior professional nursing majors with learning experiences to expand the student's understanding of the professional nurse role in a chosen clinical area. The course is limited to seniors who have a demonstrated ability to work independently. The student must follow the School of Nursing guidelines for practicum courses.

*1-3 clinical laboratory credits, Fall or Spring*

### **NURS 419: Basic Dysrhythmia and 12 Lead EKG Interpretation**

This course is designed for professional nursing majors who desire to develop skills in dysrhythmia interpretation. Identification of EKG features, predisposing conditions and treatments; role of the nurse in patient care; and current ACLS interventions are emphasized. Crosslisted with SPRT 425.

Prerequisites: BIOL 115, 116, 117, 118 or BIOL 365, 366, 368, 369

*3 credits*

### **NURS 423/GNURS 523: Women's Health Issues**

This course will provide the student an understanding of health issues affecting women. Major health promotion strategies and their theoretical models will be presented. Analysis of case studies will enhance student understanding of effective methods of promoting positive health-seeking behaviors among women of all ages across cultural, ethnic, and socioeconomic backgrounds. The influence of social, economic and political issues on women's health will be stressed. Open to all university students. The course is cross-listed for undergraduate and graduate nursing curricula.

*3 credits*

### **#NURS 428: School Nursing**

This course is designed to focus on the professional nurse's role in school health. Emphasis is placed on the dimensions of school nursing. Clinical facilities for this course include the Erie City School District and other school systems within the County. Required for School Nurse Certification. 100 hours supervised clinical in school nursing. Not open to juniors. Senior year standing.

*5 credits*

**NURS 435/GNURS 535 Fundamentals of Forensic Nursing**

This introductory course provides the student with knowledge and nursing strategy to better meet the needs of those affected by forensic related health care situations and ultimately improve patient outcomes. The course explores the history and development of forensic nursing as a scientific subspecialty of nursing; the forensic nursing process; application of the forensic nursing role (i.e. sexual assault management, death investigation, child death review, abuse/neglect, emergency department, etc.), violence and victimology; injury identification and interpretation; evidence recognition, collection, preservation, and documentation; and finally, forensic nursing and the law/legal interface.

The course is cross-listed for undergraduate and graduate nursing curricula. 3 credits

**BSN Nursing Curriculum and Suggested Course Sequence**

*(Numerals in front of courses indicate credits)*

FRESHMAN		Spring Semester	
Fall Semester			
3	Introduction to Psychology/PSYC 111	4	Mol/Cell Biol & Lab/BIOL 122,123
3	College Composition/LENG 111	3	Basic Sociology/SOCI 110
3	History Without Borders/LHST 111	3	Crit Analysis & Comp/LENG 112
3	Sacred Scripture/LTHE 121	3	Psych of Human Devel/PSYC 222
4	Physiological Chem&Lab/CHEM 105, 108	1	First-Year Seminar, Part II/NURS 102**
1	First-Year Seminar, Part I/NURS 101**	3	Intro to Philosophy/LPHI 131
17		17	
SOPHOMORE		Spring Semester	
Fall Semester			
3	Literature Series/LENG	3	Theology II Series/LTHE
4	Anat and Phys I & Lab/BIOL115/116	3	Philosophy II Series/LPHI
3	Stats/PSYC 211 or SOCI 351 or MATH 213	3	Nutrition/DIET 202
3	Fine Art Series/LFIN	4	Anat and Phys II&Lab/BIOL 117,118
1	#Health Assessment I/NURS 206	2	#Nursing Practice Competencies/ NURS 205
4	Microbiology & Lab/BIOL 106,107	2	Pharm & Nsg Implications of Med Admin/NURS 204
		1	#Health Assessment II/NURS 207
18		18	
JUNIOR		Spring Semester	
Fall Semester			
3	Nursing Research/NURS 308	5	#Prom Hlth & Hlth Restoration in Adults I/NURS 313
2	Influences Hlth / Disease/NURS 309	5	#Prom Hlth in Childrear Fam/ NURS 312
5	#Prom Healthy Childbearing/NURS 310	3	Theol/Phil III Series/LTHE 227 or LPHI 237
5	#Prom Hlth & Hlth Restoration of Older Adults/NURS 311	1	Leadership Seminar/NURS 320**
15		14	
SENIOR YEAR		Spring Semester	
Fall Semester			
5	#Prom Hlth & Hlth Restoration in Adults II/NURS 406	5	#Prom Hlthy Com/NURS 414
5	#Prom & Restoring Mental Health/ NURS 407	6	#Comp Nursing Prac/NURS 415
		3	Nurse Power Pol/NURS 404**

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2	Mgmt and Lead Strat Pro Nursing/ NURS 420	
3	Elective	
<hr/> 15		<hr/> 14

Total credits: 128

# clinical course - meets 3 hours per week per clinical laboratory credit.

Students must earn a grade of C or higher in each science course: CHEM 105, CHEM 108, BIOL 122, BIOL 123, BIOL 115, BIOL 116, BIOL 117, BIOL 118, BIOL 106, BIOL 107 to progress in the program.

Students must earn a grade of C or higher in each nursing course to progress in the program. Nursing requires a cumulative GPA of 2.7 or above to progress in the program.

\*\*Meets Liberal Core requirements.

The Liberal Core requirement of SPCH 111 is met through specific content throughout the BSN major. Students who leave the major prior to graduation must take the SPCH 111 course.

Total credit requirements for Bachelor of Science in Nursing (B.S.N.) is 128 credits.

### BSN-NURS Next-Step

The Next-Step program may be offered to students admitted to Gannon with a non-Nursing Associate's degree, Bachelor's degree, or equivalent international degree. Refer to the Liberal Studies component of the Next-Step Programs.

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## NURSING (VILLA MARIA SCHOOL OF) - RN to BSN OPTION

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PATRICIA MARSHALL, M.S.N., R.N., CCRN, *Undergraduate Program Director*

The Villa Maria School of Nursing, in agreement with the Pennsylvania Nursing Articulation Model, believes that a common core of knowledge exists between accredited basic nursing programs and should be recognized without the requirements of special testing. The goal of the Pennsylvania Nursing Articulation Model is to provide an appropriate path of articulation between RN and BSN programs, which eliminates duplication of content. Villa Maria School of Nursing has created an option including the use of transfer credits, articulation credits, challenge exams and validation by portfolio which all aid in eliminating duplication of content. Transfer credits are awarded in accordance with the University guidelines and policies. Villa Maria School of Nursing provides articulation credits for basic nursing knowledge gained from an accredited RN program. Up to thirty-two (32) credits of nursing are granted, during the final semester of study, for articulation credit.

Nursing knowledge gained through professional experience, which demonstrates attainment of professional nursing course outcomes may be validated through portfolio. Students admitted to the RN to BSN Option may choose to create a portfolio for qualifying professional nursing courses. The process for creation of and validation of course outcomes by portfolio is presented, practiced and refined in the Transition to Professional Nursing course (NURS 203).

The student, who believes that specific required courses would involve repetitive learning, may have an opportunity to challenge the course by examination. Students may also earn credits through the College Level Examination Program (CLEP). Students must receive academic advisement regarding course credits approved for challenge examinations and CLEP exams from their advisor. CLEP exams and transfer credits do not qualify as meeting the 30 institutional credits which must be completed to meet graduation requirements.



NLN Achievement testing may demonstrate a student's knowledge in specific subjects, such as nutrition.

NLN Achievement testing may be required for students who have not graduated from an accredited nursing program.

All RN to BSN Option students must earn 128 credits to graduate with the BSN. All RN to BSN option students must complete 30 institutional credits. Credits earned by CLEP and transfer credits are NOT qualified as institutional credits.

Registered Nurses with an Associate Degree in Nursing (ADN) may qualify to obtain the BSN through the next-step program.

### **Next-Step Program**

#### **BSN Option for Graduates of Two Year Colleges (ADN) includes GOLD Program (BSN-RNBS-NS-OL)**

- I. Acceptance of transfer credits from the accredited ADN program, which includes a maximum of 32 nursing articulation credits.
- II. The student must take 19 credits of the Liberal Studies Core after completion of the Associate of Science in Nursing degree.

*(Numerals in front of courses indicate credits)*

- 3 Sacred Scripture/LTHE 121
  - 3 Introduction to Philosophy/LPHI 131
  - 3 Literature Series/LENG
  - 3 Fine Art Series/LFIN
  - 3 Theo/Phil III Series/LTHE or LPHI
  - 1 Leadership Seminar/NURS 320
  - 3 Capstone Seminar: Nurse Power Politics/NURS 404\*
- 
- 19

\*NURS 404 as the approved Liberal Core capstone course for the nursing major. If achieved through portfolio, the student must attend a scheduled seminar to fulfill the LBST 383 requirements.

Students may transfer course equivalents to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and NURS 404 (Nurse Power Politics) at Gannon.

- III. Completion or transfer equivalent of 25 credits of nursing pre-requisites:

- 8 Human Anatomy & Physiology I and II/ BIOL 115, 116, 117, 118
  - 4 Physiologic Chemistry and lab/CHEM 105 and 108
  - 4 Microbiology/BIOL 106 & 107
  - 3 Human Growth and Development/PSYC 222
  - 3 Nutrition/DIET 202
  - 3 Statistics/PSYC 211 or SOCI 351 or MATH 213
- 
- 25

- IV. Nursing Credits required:

- 5 Transition to Professional Nursing/NURS 203 (required)
- 3 Nursing Research/NURS 308 (required)
- 3 Nurse Power Politics/\*NURS 404 (validation by Portfolio available)
- 5 Promoting Healthy Communities/NURS 414 (validation by Portfolio available)



- 3 Management and Leadership in Nursing/NURS 408  
(validation by Portfolio available)

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19

\*If achieved through portfolio, the student must attend a scheduled seminar to fulfill the LBST 383 requirements.

V. Elective Credits:

To meet the total 128 degree credits and/or the 30 institutional credits.

- 14 Free electives  
9 Nursing electives

The student must earn 128 credits to complete the Baccalaureate of Science in Nursing degree. The RN to BSN student will have a total of 60 credits in nursing through the combination of articulation credits and those nursing courses taken at Gannon in pursuit of the BSN.

**Registered Nurses with a hospital diploma in nursing may qualify to obtain the BSN through the completion of the following courses. (BSN-RNBS-PIP-OL)**

- I. Acceptance of a maximum of 32 nursing articulation credits from the accredited RN diploma program.
- II. The student must take the entire Liberal Studies Core.

*(Numerals in front of courses indicate credits)*

English:

- 3 College Composition/LENG 111  
3 Critical Analysis and Comp/LENG 112  
3 English Literature Series/LENG

Theology:

- 3 Sacred Scriptures/LTHE 121  
3 Theology II Series

Philosophy:

- 3 Introduction to Philosophy I/LPHI 131  
3 Philosophy II Series

Ethics:

- 3 Theo/Phil III Series/LTHE 227 or LPHI 237

Social Science:

- 3 Intro Psychology/PSYC 111  
3 Basic Sociology/SOCI 110

Fine Arts:

- 3 Fine Art Series/LFIN

Speech:

- 3 SPCH 111 or SPCH 113 or SPCH 115

Liberal Studies:

- 3 History Without Borders/LHST 111  
3 Capstone Seminar/NURS 404\*  
1 Leadership Seminar/NURS 320

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43

\*NURS 404 fulfills LBST 383 requirements.

III. Completion of 25 credits of nursing pre-requisites:

- 8 Human Anatomy & Physiology I and II/BIOL 115, 116, 117, 118  
4 Physiologic Chemistry and lab/CHEM 105 and 108

- 4 Microbiology/BIOL 106 & 107
- 3 Human Growth and Development/PSYC 222
- 3 Nutrition/DIET 202
- 3 Statistics/PSYC 211 or SOCI 351 or MATH 213

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#### IV. Nursing Credits required:

- 5 Transition to Professional Nursing/NURS 203 (required)
- 4 Nursing Research/NURS 308 (required)
- 3 Nurse Power Politics/\*NURS 404 (validation by Portfolio available)
- 5 Promoting Healthy Communities/ NURS 414  
(validation by Portfolio available)
- 3 Management and Leadership in Nursing/ NURS 408  
(validation by Portfolio available)

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\*If achieved through portfolio, the student must attend a scheduled seminar to fulfill the LBST 383 requirements.

#### V. Elective Credits:

To meet the total 128 degree credits and/or 30 institutional credits.

- 10 Free electives
- 9 Nursing electives

The student must earn 128 credits to complete the Baccalaureate of Science in Nursing degree. The RN to BSN student will have a total of 60 credits in nursing through a combination of articulation credits and those nursing courses taken at Gannon in pursuit of the BSN.

### **GOLD RN to BSN – Unique Online Program**

The GOLD RN to BSN program requires students to have an Associate degree in nursing. A total of 128 credit hours is required for this baccalaureate degree. The program consists of 20 credit hours of nursing (some of which qualify as liberal studies core), 16 credit hours of science, 15 credit hours of support courses and 19 credit hours of Gannon's Liberal Studies core. The remaining credit hours are a combination of transfer credits (up to 32 nursing articulation credits from the student's Associate degree) and elective credits (9 of which must be nursing related) to total 128 credits. Students may enroll as part-time or full-time students.

Three credit courses will be delivered in seven-week sessions; course learning objectives and assessments will remain the same as the face-to-face RN to BSN program. Learning experiences are included in each online course to ensure that total contact hours for the student will meet all regulatory guidelines and be consistent with our face-to-face courses as explained in the next section. There is an expectation that the student will stay current with the course, remain engaged in all learning activities, and seek help in a timely fashion if necessary. The exceptions to the seven-week session model are the courses that are more than 3 credits; these higher credit value courses will remain in a 14-week format.

Enrollment in the on-line GOLD courses is limited to on-line cohort students only. Exceptions can be made only by the Director of the Villa Maria School of Nursing or the Undergraduate Program Director.

## NURSING (VILLA MARIA SCHOOL OF) - RN TO MSN OPTION

PATRICIA MARSHALL, M.S.N., R.N., CCRN, *Undergraduate Program Director*

The RN to MSN option of the Villa Maria School of Nursing is designed for selected nurses holding an Associate Degree or Diploma in Nursing who seek a Master's of Science in Nursing. Students in this option are not awarded a Baccalaureate Degree in Nursing. Experienced registered nurses from NLN accredited programs, who have demonstrated leadership potential are eligible to apply. Students may earn credits through CLEP, challenge examinations, portfolio option courses or transfer credits. Up to thirty-two (32) nursing articulation credits are granted for previous basic nursing education.

### Admission Requirements

1. An associated degree or diploma in nursing from a NLN accredited program.
2. Evidence of current registered nurse licensure in the United States and eligibility to obtain a registered nurse license from the Commonwealth of Pennsylvania
3. Four years of full-time work experience as a registered nurse within the past five years or 1,000 hours per year for the past four years.
4. A grade point average of 3.0 on a 4.0 scale from the basic program completed
5. Personal interview with the Undergraduate Program Director
6. Three references reflecting leadership skills, communication skills, and motivation for a higher degree.

### Curriculum Plan

#### Undergraduate Courses:

##### Support and Liberal Core Courses (46 credits):

Microbiology and lab/BIOL 106, 107	4 credits
Human Anatomy & Physiology I & II with labs/ BIOL 115, 116, 117, 118	8 credits
Physiological Chemistry and lab/CHEM 105, 108	4 credits
Sociology/SOCI 110	3 credits
Human Growth and Development/PSYC 222	3 credits
Nutrition/DIET 202	3 credits
Statistics/PSYC 211 or SOCI 351 or MATH 213	3 credits
Theology/LTHE 121	3 credits
Philosophy/LPHI 131	3 credits
THEO/PHIL III series course	3 credits
Fine Art Series/LFIN	3 credits
Leadership Seminar/NURS 320	1 credit
Literature Series/LENG	3 credits
Senior Capstone Seminar/NURS 404	

##### Undergraduate Nursing Courses (19 Credits)

NURS 203 Transition to Professional Nursing	5 credits
NURS 308 Research Process in Nursing	3 credits
NURS 404 Nurse Power Politics**	3 credits
NURS 408 Management & Leadership in Nursing**	3 credits
NURS 414 Promoting Healthy Communities **	5 credits

\*\* Portfolio option available

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### **Nursing Articulation Credits (Up to 32 credits)**

**Graduate Courses** - as per the option selected, upon completion of undergraduate course requirements.

NOTE: Graduate Record Examination (GRE) is required upon progression to the graduate option.

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### **COURSE DESCRIPTIONS:**

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#### **#NURS 203: Transition to Professional Nursing**

This course is designed to provide learning opportunities for RN to BSN or RN to MSN students to broaden their perspectives of the professional nursing role in health care delivery. This course introduces the major concepts of Person, Society, Health, and Nursing. The process for creation of and validation of course outcomes by portfolio is presented, practiced and refined. Clinical laboratory time is required. Internet.

Prerequisites: PSYC 222, CHEM 105, 108

*5 credits, Fall, Spring or Summer*

#### **NURS 320: Leadership Seminar**

The Leadership seminar introduces students to a three dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for the students' leadership development as reflected both in this course and the co-requisite Theology or Philosophy Series III courses. This course, while housed in the Villa Maria School of Nursing, is open to all University students. The course must be taken concurrently with the Liberal Studies Core Theo/Phil III series course.

*1 credit, Fall, Spring or Summer*

#### **NURS 400: Portfolio for NURS 404**

Students ready to complete a portfolio for NURS 404 Nurse Power Politics register for this portfolio course in the semester the portfolio is to be completed. Portfolio process and criteria are published in the Villa Maria School of Nursing Handbook. The assigned course (NURS 404) credits may be included in the student's credit load and applied toward financial aid. The credits for the course are posted to the transcript upon completion of the portfolio and payment of appropriate fees.

Prerequisite: NURS 203

*3 credits, Fall, Spring or Summer*

#### **NURS 401: Portfolio for NURS 408**

Students ready to complete a portfolio for NURS 408 Management and Leadership in Nursing register for this portfolio course in the semester the portfolio is to be completed. Portfolio process and criteria are published in the Villa Maria School of Nursing Handbook. The assigned course (NURS 408) credits may be included in the student's credit load and applied toward financial aid. The credits for the course are posted to the transcript upon completion of the portfolio and payment of appropriate fees.

Prerequisite: NURS 203

*3 credits, Fall, Spring or Summer*

#### **NURS 402: Portfolio for NURS 414**

Students ready to complete a portfolio for NURS 414 Promoting Healthy Communities register for this portfolio course in the semester the portfolio is to be completed. Portfolio process and criteria are published in the Villa Maria School of Nursing Handbook. The assigned course (NURS 414) credits may be included in the student's credit load and applied toward financial aid. The credits for the course are posted to the transcript upon completion of the portfolio and payment of appropriate fees.

Prerequisite: NURS 203

*5 credits, Fall, Spring or Summer*

#### **NURS 404: Nurse Power Politics (Capstone)**

This capstone Liberal Studies course is a seminar experience designed to provide the student with an opportunity to explore contemporary health care issues, to analyze these issues within

the historical, professional context as well as the context of his or her value system, and to adopt a position regarding such issues. The student is engaged in an active exploration of his/her own philosophy of nursing. Students are guided through this analysis by faculty who facilitate open discussions and exchange of ideas. Students develop skill in formulation of a position, consideration of others' viewpoints and defense of such a position, as well as to realize the potential impact and power of political activity. Students also realize the importance of individual action and commitment. Service learning is a required component of the course.

Prerequisites: Senior level

*3 credits, Fall, Spring or Summer*

#### **NURS 408: Management and Leadership in Nursing**

This course focuses on the knowledge and skills related to the delivery of health care services within a nursing management context. Theories, concepts and models are presented which give the student an understanding of the knowledge base required for effective management and assuming a leadership role in professional nursing practice. The course provides the knowledge and skills necessary to apply principles in planning and delegating nursing care and discusses developing creative roles for managing and leading in nursing.

Prerequisites: NURS 203

*3 credits, Fall, Spring or Summer*

#### **#NURS 414NU: Promoting Healthy Communities**

This course provides RN to BSN or RN to MSN option students a perspective of professional nursing at the community level of practice. Course content will provide an overview of specific issues and societal concerns that affect community health nursing practice; epidemiological applications in community health nursing; educational theories, models, and principles applied in community health nursing; risk factors and health problems for defined populations across the lifespan; issues and approaches in providing for the health care of defined populations in the community; specific health care needs and issues for populations at risk; communicable disease risk and prevention; and the diversity in the role of the community health nurse. Students apply previous knowledge and the nursing process in maximizing the health status of individuals, families, and defined populations within the community. Adult learning teaching strategies are employed in this courses. The RN student participates in faculty guided-independent clinical experiences.

Prerequisite: NURS 203

*5 credits, Fall, Spring or Summer*

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## **NURSING (VILLA MARIA SCHOOL OF) - SCHOOL NURSE CERTIFICATION**

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PATRICIA MARSHALL, M.S.N., R.N., CCRN, *Undergraduate Program Director*

The Villa Maria School, in cooperation with the School of Education, offers a post-baccalaureate degree in nursing (BSN) certificate for school nursing. The school nurse certificate program is open to registered nurses who have earned a BSN. Students who are currently enrolled in Gannon University's Villa Maria School of Nursing's BSN program may take the courses for the certificate during their undergraduate program, but do not qualify for enrollment in the certification until licensed as a registered nurse in the Commonwealth of Pennsylvania.

The purpose of this post-BSN certificate is to prepare nurses to meet the health care needs of children of all ages in diverse school settings. Health promotion, risk reduction, and health education are emphasized. The program is approved by the Pennsylvania Department of Education.

#### **Admission Requirements:**

- A. Licensed Registered Nurse
  - a. Completed application to Gannon University Villa Maria School of Nursing's School Nurse Certificate Program.

- b. Proof of licensure as a registered nurse in the Commonwealth of Pennsylvania.
    - i. Submit photocopy of RN license
  - c. Currently hold a Bachelor's of Science in Nursing degree from an accredited program with a cumulative grade point average of 3.0 in undergraduate course work.
    - i. Submit official BSN transcript
- B. Current RN to BSN or RN to MSN student, licensed registered nurse
- a. Student is currently enrolled in Gannon University Villa Maria School of Nursing's BSN-RNBS or ND-RNMSN major
  - b. Current overall QPA of 3.0 or higher
    - i. Submit request to BSN Program director
    - ii. Submit copy of current transcript
  - c. Proof of licensure as a registered nurse in the Commonwealth of Pennsylvania.
    - i. Submit photocopy of RN license

### **Program and Certification Requirements:**

1. Admission, progression and graduation requirements from the Pennsylvania Department of Education (Chapter 354) for School Nurse Certification require an overall GPA of at least 3.0 in all undergraduate and certificate course work.
2. 5 credits of NURS 428 School Nursing which contains 100 hours of supervised clinical experience with a certified school nurse.
  - a. For admission to NURS 428 School Nursing the following are required
    - i. Holds a BSN or is a senior student in the BSN program.\*
    - ii. Proof of valid CPR certification
    - iii. Proof of current PPD ( tuberculin testing)
    - iv. Proof of completed health records
    - v. Proof of Act 33 and 34 clearances (child abuse and criminal)
    - vi. Finger printing requirements
3. Mathematics requirement
  - a. 6 credit hours of college level Mathematics are required. Three credits may be awarded for the undergraduate statistics course.
4. English requirement
  - a. 6 credits hours of college level English as defined below:
    - i. 3 credit hours of college level English composition
    - ii. 3 credit hours of college level English literature
5. Support course requirement
  - a. 3 credit hours of SPED 101 Special Education Overview
  - b. 3 credit hours of EDCR 414 Sociology of Education
6. Proof of Licensure in the Commonwealth of Pennsylvania as a registered nurse exempts the student from taking the PRAXIS I exams.

\* Gannon University students enrolled in the BSN-NURS or BSN-RNBS or ND-RNMS programs may be eligible to pursue this certificate. Students must declare their intent to obtain the certification to the BSN program director and complete appropriate paperwork. Upon completion of the BSN program and proof of licensure as a registered nurse in the Commonwealth of Pennsylvania, the student must file a certification approval form with the School of Nursing to initiate the formal School Nurse Certification Process.

### **Permanent Certification**

Pennsylvania offers permanent certification as a School Nurse when a graduate of a School Nurse Certification program has accumulated a minimum of 24 post-baccalaureate credit

hours within 6 years of initial certification. In most cases, courses taken toward School Nurse Certification count toward permanent certification as long as they have been taken after the date on which the initial BSN degree was granted.

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## OCCUPATIONAL THERAPY

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DAVID LEVAN, DHSc., OTR/L, CSRS, *Chair*

FACULTY: *Associate Professor:* Bernadette Hattjar. *Assistant Professors:* Jeffrey Boss, Amy Brzuz, David LeVan. *Instructors:* Anita Hotchkiss, Lynne Oberle, Karen Probst.

The Occupational therapy program allows opportunities for in-depth study and field practicum experiences with individuals of all ages who have limited capacity to perform in their everyday lives. The goal of occupational therapy is to assist the individual to achieve the maximum level of independent living through remediation of or adaptation to physical, cognitive, perceptual, or mental health impairments.

This program is designed to prepare students for career opportunities in occupational therapy. Gannon's OT Program has two points of entry: a five-year, entry-level masters degree program, beginning at the Freshman year, and a three-year entry level masters degree program for students who enter after obtaining a baccalaureate degree in another field. Students in the five-year program are awarded a baccalaureate degree in health sciences at the end of their fourth year. Upon completion of their fifth year students are awarded a Master of Science degree and are eligible to take the National Certification Examination. Students in the three-year program graduate with the Master of Science degree and are eligible to take the National Certification Examination at the end of the three-year program.

Two three month clinical fieldwork experiences are required during the summer and fall of the last year of the program. Students must maintain a 3.00 GPA. Space may be available for transfer into the sophomore or junior year for students who began their studies in other majors and for individuals who are Certified Occupational Therapy Assistants.

The Occupational Therapy Program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE). Graduates are eligible to sit for the national certification examination administered by the National Board for Certification in Occupational Therapy. After successful completion of this exam, the individual will be an Occupational Therapist, Registered (OTR). Most states require licensure in order to practice; however, state license eligibility is usually based on the results of the Certification Examination. For further information on accreditation, the address, and web address telephone number for ACOTE are 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449; (301) 652-2682; [www.aota.org/nonmembers/area13/links/link13.asp](http://www.aota.org/nonmembers/area13/links/link13.asp).

Individuals with certain types of criminal records (felonies) may be barred from practicing occupational therapy at the national or state level. Individuals with records should contact NBCOT at the following address: NBCOT, 12 South Summit Avenue, Suite 100, Gaithersburg, MD 20877-4150 or via e-mail at: <http://http://www.nbcot.org>, and the occupational therapy licensing board of the state where they would like to practice prior to applying for admission to any OT program. Both of these organizations will do early evaluations of the record and let the individual know if they would be allowed to practice and any restrictions with might apply.

### Admission Requirements

1. Completion of 16 academic units at the high school level, four of which must be English; remainder of units are to be comprised of four units of social sciences, two to four units of mathematics including algebra, two to four units of science including biology and chemistry with labs.

2. Your academic course selection, grades, rank in class, guidance counselor recommendation and SAT/ACT scores will be carefully reviewed for admission consideration.
3. A minimum cumulative grade point average of 3.0
4. An SAT score of 1080 or above (math and critical reading sections only), ACT score of 21 or above (composite score)
5. Demonstrate motivation and curiosity through interests and extracurricular activities.
6. Letters of recommendation are considered, as is a personal essay discussing reasons for choosing occupational therapy.
7. Observation or volunteer hours in occupational therapy clinics are not required for admission, but 40 hours are required for the Introduction to Occupational Therapy course your first semester. Completing these hours ahead of time is recommended; additionally, you then have the possibility of getting letters of recommendation from therapists, which can increase your chances of acceptance.
8. Students must have demonstrated efficiency in using tools common to distance education. This might include a learning platform, special courses, or job experience. Students taking an online course at Gannon University will require internet access to utilize Blackboard for their coursework. Blackboard can be found in the <http://my.gannon.edu/portal>. Blackboard supports the latest versions of Internet Explorer, Safari, Mozilla Firefox, and Chrome.

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## **COURSE DESCRIPTIONS:**

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### **OCCT 108: Occupational Therapy First Year Seminar**

The First-Year Seminar is a discussion/experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life, and to encourage development of academic, personal and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered.

*2 credits*

### **OCCT 201: Introduction to Occupational Therapy Process**

Development of occupational therapy as a profession; concepts of role acquisition and role dysfunction, human competence and adaptation; use of human occupation as therapeutic intervention, exploration of domains of practice of OT; scope of practice of health professionals; health & wellness; healthcare delivery systems; disability; professional behaviors.

*3 credits*

### **OCCT 208: Leadership Seminar**

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social teaching serve as the basis for students' leadership development as reflected in both this course and in the co-requisite Theology or Philosophy Series III course.

*1 credit*

### **OCCT 212: Occupational Role Acquisition**

Development across the life span with emphasis on skill acquisition. All aspects of development in human and non-human environmental interaction will be considered including motor, sensory integrative, cognitive, perceptual, social, cultural and religious. Emphasis will be placed on development of performance components and competence in performance areas within a temporal and environmental context. Multicultural factors relating to development of competence will also be addressed. Lab will provide community experiences with different ages and cultures.

Prerequisite: OCCT 201 or Per Instructor

Co-requisite: SOCI 120 (recommended)

*4 credits*



**OCCT 313: Occupational Science & Analysis**

Analysis of occupation as a life organizer. Development of observational skills, problem solving approaches, the teaching-learning process, therapeutic use of self, and activity analysis. Laboratory will provide experience in and analysis of selected tasks of work, self-care and play/leisure.

Prerequisite: OCCT 212

*3 credits*

**OCCT 399: Independent Study**

An independent study whose objectives are determined collaboratively between student and instructor; designed to enrich a student's depth of study in a specific area.

*1 - 3 credits, Fall, Spring, Summer*

**OCCT 426: Structural Function of the Neuromusculoskeletal System**

The purpose of this course is to provide students with lecture material on the neuromusculoskeletal system sufficient to prepare them for progression to junior level courses in the program. This course will focus on the functional anatomy of the muscular, skeletal, nervous, and circulatory systems. It will concentrate on the function of these systems within the context of volitional movement.

Prerequisites: BIOL 108, BIOL 109, Per Instructor

*1 credit*

**OCCT 441: Analysis of Human Movement**

Analysis of motor, sensory and motor learning components of human movement and their applications in activities of work, self-care and play/leisure. Influence on neurological, biomechanical, human and non-human environments on human performance. Laboratory will provide experience in analysis of activity and selected clinical assessment tools.

Prerequisites: PHYS 101, A&P I and II, OCCT 313

*4 credits*

**OCCT 461: Theoretical Foundations of Occupational Therapy**

Development of philosophy and theory in occupational therapy. Examination of the conceptual models which have shaped occupational therapy since its inception. Analysis of current theories, models and frames of reference which shape practice. In-depth analysis of the concepts underlying occupational behavior, occupational science and clinical reasoning.

Prerequisite: OCCT 313

*3 credits*

**OCCT 486: Occupational Therapy Medical Sciences**

Signs, symptoms, medical management and pharmacological management of general medical, neurological, orthopedic and psychiatric conditions relevant to occupational therapy intervention.

*3 credits*

**OCCT 490: Special Topics**

A course designed to provide in-depth study of a specific topic; objectives are determined on a course by course basis relative to the expertise of the faculty, needs of the students or relevance to a changing professional environment.

Prerequisite: Enrollment in OT; Specific pre-requisites are topic related.

*1 - 3 credits*

**GOCCT 505: Clinical Neuroscience**

An in-depth study of the structure and function of the central nervous system relative to human behavior. Peripheral structures involved in sensorimotor function will be included. Clinical conditions and case studies, including their influence on occupational performance components and areas, will be utilized.

Prerequisites: A&P I and II, OCCT 313 or Per Instructor

*4 credits*

**GOCCT 508: Neurorehabilitation Techniques**

Analysis of various theoretical approaches to the treatment of central nervous system dysfunction throughout the life span. Topics will include neurodevelopmental, sensorimotor, kinesiological, and sensory integrative approaches to motor dysfunction. Laboratory will provide guided experiences in techniques, application to human occupations, clinical

reasoning, case analysis and selected clinical experiences. Current research regarding the efficacy of the various theoretical approaches will be explored.

Prerequisites: OCCT 441, GOCCT 505

*4 credits*

**GOCCT 509/510: Occupational Therapy Intervention: Psychosocial Dysfunction I & II**

An integrated theory and practice course examining Occupational Therapy models for psychosocial treatment approaches based on the current research body of knowledge. Development of interpersonal skills, group leadership skills, and therapeutic use of self. Areas explored will include techniques for prevention, understanding group process dynamics, remediation of role dysfunction and maintenance of competence and adaptations related to psychosocial dysfunction within various cultures. The courses are composed of three sections; lecture, laboratory exercises and a clinical fieldwork experience.

Prerequisites: PSYC 232, OCCT 313

*4/5 credits*

**GOCCT 515/516: Occupational Therapy Intervention: Physical Disabilities I & II**

Analysis and adaptation of the human and non-human environments in response to role dysfunction; architectural barriers, orthotics, prosthetics, wheelchair prescription and management, adaptive equipment and assistive technology. Specific adult physical disabilities including orthopedic, neurological and general medical conditions; prevention, assessment, and treatment intervention; psychosocial aspects of physical dysfunction; and application of clinical reasoning through case studies and review of relevant research. Level I fieldwork in an adult Physical Disabilities setting included. Sessions will consist of lecture and lab hours weekly. One credit is assigned to the fieldwork experience in GOCCT 516.

Prerequisites: OCCT 486, GOCCT 508, GOCCT 510

Prerequisite to GOCCT 516: GOCCT 515

*4/5 credits*

**GOCCT 521/522: Occupational Therapy Intervention: Pediatrics and Developmental Disabilities I & II**

Atypical development resulting in problems in role performance in children is emphasized. Role acquisition, competence, adaptation, and dysfunction from birth through adolescence in the areas of sensory, motor, perceptual, cognitive, and play will be addressed. Providing OT in a variety of settings and models, including educational, early intervention, and medical rehab is included. Analyzing appropriate use of specific assessment and treatment techniques from a range of theoretical frames of reference with guided practice through laboratory experiences along with clinical reasoning through case studies will be included. Use of assistive technology, adaptive seating, Level I fieldwork in a pediatric setting.

Prerequisites: OCCT 486, GOCCT 508

Corequisite: GOCCT 515

Prerequisite to GOCCT 522: GOCCT 521

*5/4 credits*

**GOCCT 530: Community-Based Intervention**

Therapeutic intervention with concentration on community based practice and populations; special emphasis on the needs of the elderly; health/wellness programs; community centers; homeless populations; and special considerations in home health.

Prerequisites: OCCT 486, GOCCT 508, GOCCT 510

Co-requisites: GOCCT 515, 521

*3 credits*

**GOCCT 550: The Research Process**

Using a comprehensive approach, this course is designed to stimulate student interest in the research process, theory development, and translations of findings to practice in occupational therapy. Students learn the components, principles and methods of scientific research to become discerning consumers of research.

*5 credits*

**GOCCT 552: Qualitative Research**

Using a comprehensive approach, this course is designed to stimulate student interest in the qualitative research process, theory development, and translations of findings to practice in

the health sciences. Students learn the components, principles, and methods of scientific qualitative research to become discerning consumers of research.

Prerequisite: Instructor approval

*3 credits*

### **GOCCT 590: Special Topics**

A course designed to provide in-depth study of a specific topic; objectives are determined on a course by course basis relative to the expertise of the faculty, needs of the students or relevance to a changing professional environment.

Prerequisite: Completion of all fourth year courses, Permission of Instructor

*1 - 3 credits*

### **GOCCT 620: Leadership and Management in OT**

Supervision and management theory and techniques with research review and application; role delineation; COTA and OTR collaborative intervention; quality assurance; program development; financial management; management methods in current healthcare systems and alternative work settings including funding resources; and developing independent small businesses in alternative settings.

Prerequisites: GOCCT 660, GOCCT 661

Co-requisites: GOCCT 710, 725, 730

*3 credits*

### **GOCCT 630: Intervention Techniques for Gerontology**

This course will explore various evidence-based strategies for improving health and functional independence of older adults. Students will be introduced to the various age-related changes that occur in the cardiovascular, pulmonary, musculoskeletal, neuromuscular, and information processing systems. Course content will be delivered primarily through lecture, discussions, and article reviews. Case studies and interactive clinical activities will allow students the opportunity to design and implement an occupational therapy screening, evaluation, plan of care, and treatment for individuals with a variety of diagnoses commonly encountered in the aging population.

*3 credits*

### **GOCCT 640: Clinical Reasoning Seminar I**

The Liberal Studies senior capstone is the culminating experience of the Core curriculum and therefore requires students to integrate knowledge and skills from their major study areas, Liberal Studies courses, and co-curricular experiences. The course emphasizes cultural competence, leadership, ethical reasoning, Catholic social teaching, and LIFECORE.

Additionally, the OT capstone covers the analysis of therapeutic intervention as an interpretive process. Application of procedural, interactive, conditional and narrative reasoning to therapeutic intervention through selected case analysis across disabilities and the life span.

Prerequisites: GOCCT 515, GOCCT 521

Co-requisites: GOCCT 516, 522, 630

*3 credits*

### **GOCCT 650: Research Seminar**

This course involves the systematic writing of the research proposal and application of the research process and methodologies as they apply to the field of occupational therapy. Focus is on the methods of research design, with critical analysis of its components including collection, analysis, and interpretation of data. Synthesizing the relationships of the problem, methodology, hypothesis, and data analysis will be pivotal in the course. This course will culminate in the production of an approved proposal which will be the basis of the student's completed thesis.

Prerequisite: GOCCT 550; Senior standing in the OT program.

*3 credits*

### **GOCCT 660/661: Fieldwork Experience I & II**

Six months full time clinical experience in two different occupational therapy settings; supervised practice of therapeutic assessment and intervention techniques; students will gain experience in a wide variety of clinical conditions and age ranges.

Prerequisite: Satisfactory completion of all academic requirements in the fourth year; permission of faculty

*8 + 8 credits*

**GOCCT 710: Emerging Models of Practice**

This course will examine emerging models of practice in the field of OT as well as related job opportunities. These will vary, based upon current healthcare systems, Occupational Therapy theories, practice and service delivery models. In-depth exploration and understanding of current health-care policies; social, demographic, and political issues driving the health-care system; influences in delivery of services in OT. Informatics will be utilized as the system for investigation of resources. New methods and settings in which to provide OT intervention will be examined and applied in a local agency or organization. Participants will also evaluate the effectiveness of these services and modify them as needed.

Prerequisites: GOCCT 660, GOCCT 661 3 credits

**GOCCT 725: Advanced Intervention: Theory and Techniques**

Emphasis is on advanced therapeutic intervention techniques and theories across age ranges. Analysis and adaptation of the human and non-human environments in response to role dysfunction; advanced modalities, refined handling techniques, advanced hand treatment, assistive technology application, and complementary and alternative therapies. Review of current research in all areas of practice. Clinical reasoning through case studies.

Prerequisites: GOCCT 660, GOCCT 661 3 credits

**GOCCT 730: Professional Issues Seminar**

Critical analysis of current professional issues will be examined in this course. Topics will include, but not be limited to: health care delivery systems, professional boundaries, regulatory agencies, specialization, validation of theory; continuing professional competence; contributions to the profession and society.

Prerequisites: GOCCT 660, GOCCT 661  
Co-requisites: GOCCT 725 3 credits

**GOCCT 750/751: Thesis I & II**

This course builds on GW 650 by further development and completion of the group research project. Systematic investigation of a research problem including gathering and analyzing the data, synthesizing and discussing the information collected, and summarizing the conclusions.

Prerequisite: GOCCT 650, approval of the thesis director 1/3 credits

**MS in Occupational Therapy Curriculum Requirements**

FIRST YEAR	
<i>Fall</i>	<i>Spring</i>
2 First-Year Seminar/OCCT 108	4 Occ Role Acquisition/OCCT 212
3 Intro to Occ Therapy/OCCT 201	3 Crit Analysis & Comp/LENG 112
3 College Composition/LENG 111	3 Individual/Culture/Soc/SOCI 120
3 Intro to Psychology/PSYC 111	3 Concepts in Physics/PHYS 101
3 Intro to Philosophy/LPHI 131	3 Sacred Scripture/LTHE 121
3 Intro Organic & Biochem/CHEM 102	
17	16
SECOND YEAR	
<i>Fall</i>	<i>Spring</i>
1 OT Leadership Seminar/OCCT 208	3 Theoretical Found. of OT/OCCT 461
3 Occ. Science & Analysis/OCCT 313	3 Psychopathology/PSYC 232
3 History Without Borders/LHST 111	3 Philosophy II
3 LPHI 237 Ethics/or LTHE 227	3 Theology II
Moral Resp.	4 BIOL110/111/Human Anatomy and
3 SPCH 111 or SPCH 113	Phys II/Lab/BIOL 110/111
4 Human Anatomy and Phys I/Lab/	1 OCCT 426 Lab
BIOL 108/109	
17	17

## THIRD YEAR

*Fall*

4	Analysis of Human Move/OCCT 441
4	Clinical Neuroscience/GOCCT 505
4	OT Interv:Psychosocial I/GOCCT 509
3	Applied Statistics/MATH 213
3	OT Medical Sci/OCCT 486

18

*Spring*

4	Neurorehab Tech/GOCCT 508
5	OT Interv: Psychosocial II/GOCCT 510
5	The Research Process/GOCCT 550
3	Literature Series/LENG

17

## FOURTH YEAR

*Fall*

4	Interv:Physical Disabil I/GOCCT 515
5	Interv:Pediatrics & Dev Disab I/ GOCCT 521
3	Community Based Interv/GOCCT 530
3	Research Seminar/GOCCT 650
3	Fine Arts Series/LFIN

18

*Spring*

5	Interv:Phys Disab II/GOCCT 516
4	Interv:Pediatrics & Dev Disab II/ GOCCT 522
3	Clinical Reasoning Sem I/GOCCT 640
1	Thesis I/GOCCT 750
3	Interv Tech for Gerontology/ GOCCT 630

16

## FIFTH YEAR

*Summer/Fall (Start of graduate phase)*

8	Field Work Experience I/GOCCT 660
8	Field Work Experience II/GOCCT 661

16

*Spring*

3	Emerging Models of Practice/ GOCCT 710
3	Adv Interv:Theory & Techniq/ GOCCT 725
3	Professional Issues Sem/GOCCT 730
3	Thesis II/GOCCT 751
3	Leadership & Mgmt in OT/ GOCCT 620

15

Total Credits: 167

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## PHYSICAL THERAPY

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KRISTINE LEGTERS, PT, DSc, NCS, *Chairperson*CAROLYN GALLEHER, PT, DHS, *Coordinator of Undergraduate Physical Therapy, Associate Program Director*BETH GUSTAFSON, PT, M.S.Ed., and ANDREA KESSLER, PT, DPT, OTR/L, *Co-coordinators of Undergraduate Physical Therapy*

FACULTY: *Professor:* Pamela Reynolds. *Associate Professor:* Kristine Legters. *Assistant Professors:* Steven Bitticker, Carolyn Galleher, Beth Gustafson, Julie Hartmann, Kate MacPhedran, Donna Skelly, Ph.D. *Instructors:* Andrea Kessler, Courtney Roca, Kristen Snarski.

Physical Therapy is a health care profession that primarily focuses on the preservation, development, and restoration of optimal function. Physical therapists provide evaluative, rehabilitative, and preventive health care services designed to alleviate pain; prevent the onset and progression of impairment, functional limitation, disability resulting from injury, disease, or other causes; and restore, maintain and promote overall fitness, health and optimal quality of life. Physical therapists work with individuals of all ages who demonstrate movement dysfunction, or the potential for such dysfunction, of the neurological, musculoskeletal, integumentary, and cardiopulmonary systems.

Physical therapists practice in a hospital setting, or provide services in out-of-hospital settings through home health agencies, in nursing homes, in industrial settings, through public health agencies, in private physical therapy clinics, in public schools and in a variety of other nontraditional settings.

The job opportunities for physical therapists remain abundant, and according to the *Occupation Outlook Handbook*, are expected to continue to grow during the new millennium. Advances in medical technology continue to allow for the treatment of more severe disabilities. As a result, physical therapists will be needed to care for the aging baby boomers who face heart disease, strokes and arthritis, and to attend to the growing number of newborns who suffer severe birth defects.

Gannon's undergraduate Physical Therapy curriculum assists students in preparing themselves for acceptance into Gannon's Doctor of Physical Therapy program. With the guidance of the physical therapy advisor, students select courses to fulfill prerequisites specific to the professional program, or programs, to which students wish to apply.

All entry-level physical therapy programs offer only graduate level (master's or doctorate degree) professional preparation. Because of this, students entering Gannon's undergraduate physical therapy program intending to apply to graduate level professional programs should select a major field of study. The choice of a major will depend upon the student's personal interest. Students may select any of the following majors available at Gannon: Biology, Business Administration, Chemistry, Mathematics, Nursing\*, Psychology, Science, and Sport and Exercise Science. \*May require summer courses.

Gannon University offers a doctoral degree program in physical therapy. The curriculum is seven years in length with a 4+3 model. Graduates must complete a Baccalaureate degree and 3 years of professional preparation. While enrollment in Gannon's undergraduate physical therapy program does not guarantee acceptance into the professional graduate program, 75 percent of the seats in each entering class at the graduate level are reserved for "qualified Gannon graduates".

#### **Admission into the Undergraduate program:**

The minimum requirements to be considered for acceptance to the undergraduate Physical Therapy program include:

1. Overall high school GPA of 3.0 or better.
2. SAT score of 1090 or higher or ACT score of 21 or higher
3. Completion of college prep biology and chemistry with labs and three years of college prep mathematics

#### **Acceptance into the Graduate Program:**

The graduate program gives preference to qualified Gannon University undergraduate physical therapy applicants who meet the following criteria:

1. Maintain a minimum overall 3.0 GPA
2. Satisfy the prerequisite course GPA requirements of 3.0 with no more than four credits of repeat course work, grades of C- or below are not accepted.
3. Successful completion of an undergraduate degree from Gannon University.
4. Transferred to Gannon University and completed a minimum of 30 credits in the undergraduate physical therapy program at Gannon University.

**Early Acceptance Opportunity into the Graduate Program:****Four plus three guaranteed acceptance:**

A guaranteed position in the Doctor of Physical Therapy program will be reserved for any freshman if the following criteria are met:

1. SAT total of 1130 or higher or ACT score of 23 or higher
2. GPA of 3.20 or higher on a 4.0 scale.
3. Must maintain a GPA of 3.20 or higher in Gannon undergraduate courses.
4. Must maintain a GPA of 3.20 or higher in prerequisite courses with no repeated courses
5. Overall GPA will be reviewed at the end of the Freshman, Sophomore and Junior year.  
Overall and pre-requisite GPA will be reviewed at the end of the Senior year. GPA's are evaluated as reported by the Registrar's Office.

Students who do not meet the qualifications for 4 + 3 may request consideration to the 4 + 3 at the end of the freshman year. Students must meet the following criteria to be considered for acceptance into the 4 + 3 program at the end of the freshman year:

- Achieve a "B" or higher in one of the science prerequisite courses
- Achieve a 3.2 or higher overall GPA at the end of the freshman year

**3 + 3 Program Opportunity**

Gannon also offers the opportunity to participate in a 3 + 3 program. This program has been designed for qualified students to earn an undergraduate degree and a Doctor of Physical Therapy degree in six years rather than seven. Students who wish to apply must choose a Science or Sport and Exercise Science major and meet the following criteria:

1. SAT total of 1170 or higher or ACT score of 24 or higher
2. A high school GPA of 3.40 or better.
3. Must maintain a GPA of 3.40 or higher in Gannon undergraduate courses.
4. Must maintain a GPA of 3.40 or higher in prerequisite courses with no repeated courses.
5. Overall GPA will be reviewed at the end of the Freshman, Sophomore, and Junior Year.  
Pre-requisite GPA will be reviewed at the end of the Junior Year. GPA's are evaluated as reported by the Registrar's Office.

**Course Selection:**

The following coursework meets the general requirements for most professional schools of physical therapy including Gannon's graduate program:

Biology with laboratories	8 credits	Human Anatomy with lab	1 semester
Chemistry with laboratories	8 credits	Human Physiology with lab	1 semester
Physics with laboratories	8 credits	Exercise Physiology	1 semester
Mathematics	3 - 6 credits	Exercise Physiology lab	1 semester
Psychology	6 credits	Statistics	1 semester
Sociology	3 credits	Kinesiology (recommended)	

Professional schools of physical therapy vary in regard to entry requirements. Consultation with the physical therapy school of choice during the freshman year is recommended.

**Undergraduate Physical Therapy Curriculum:**

The following course sequence can be varied dependent upon the undergraduate field of study that has been selected.

FRESHMAN	
<i>Fall Semester</i>	
3	General Chemistry I/CHEM 111
1	General Chemistry I Lab/CHEM 112
3	College Composition/LENG 111
3	Sacred Scripture/LTHE 121
3	Intro to Psychology/PSYC 111
2	First-Year Seminar
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SOPHOMORE	
<i>Fall Semester</i>	
3	Molecular Cell Biology/BIOL 122
1	Molecular Cell Bio Lab/BIOL 123
3	Statistics
3	Introduction to Philosophy/LPHI 131
3	Theology II Series/LTHE
3	Fine Art Series/LFIN
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16	
JUNIOR and SENIOR	
3	Basic Sociology/SOCI 110
3	College Physics 1 /PHYS 105
1	College Physics 1 Lab/PHYS 106
3	College Physics 2 /PHYS 108
1	College Physics 2 Lab/PHYS 109
3	Human Gross Anatomy/BIOL 365
1	Human Gross Anatomy Lab/BIOL 366
3	Animal Physiology/BIOL 368
1	Animal Physiology Lab/BIOL 369
3	Physiology of Exercise and Sport/SPRT 390
1	Physiology of Exercise and Sport Lab/SPRT 391
3	Kinesiology/SPRT 360 (recommended)
<hr/>	
26	
<i>Spring Semester</i>	
3	General Chemistry II/CHEM 114
1	General Chem II Lab/CHEM 115
3	Critical Anal. and Comp/LENG 112
3	Psychology 200 level or higher/PSYC
3	College Algebra/MATH 111
3	History Without Borders/LHST 111
1	PT Seminar I/PT 110
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17	
<i>Spring Semester</i>	
3	Animal Form Function/BIOL 124
1	Animal Form Lab/BIOL 125
3	Trigonometry/MATH 112
3	Literature Series/LENG
3	Philosophy II Series/LPHI
1	PT Seminar II/PT 210
3	Public Speaking/SPCH 111
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17	

All students receiving a bachelor's degree from Gannon must complete the Liberal Studies Core requirements and the course requirements for their field of study in addition to the courses listed above.

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## Doctor of Physical Therapy 3 + 3 Program

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This program has been designed for qualified students to earn an undergraduate degree in either Sport and Exercise Science or general Science and a Doctor of Physical Therapy Degree at Gannon University in six years rather than seven. Under the early entry program, the students may receive a Bachelors Degree with a specific major in either of the undergraduate options (Sport and Exercise Science/General Science) after three years of undergraduate work and the successful completion of the first year of full time study in the Doctor of Physical Therapy program. Students would receive their DPT Degree after successful completion of three years in the Doctor of Physical Therapy Degree at Gannon University. The curriculum in either Science or Sports and Exercise Science allows for the completion of the Liberal Studies Core, the necessary coursework for completion of the intended major, and the prerequisites for physical therapy.



Under the provisions of this program, students will matriculate at Gannon University for a minimum of a hundred and two (102) to a hundred and five (105) semester hours leading toward either the Bachelor of Science-Science/Pre Physical Therapy tract or Bachelor of Sport and Exercise Science/Pre Physical Therapy tract. A guaranteed position in our 3+3 Doctor of Physical Therapy Program will be reserved for freshman if the following criteria are met:

- SAT total of 1170 or higher or ACT score of 24 or higher
- Grade point average of 3.40 or higher on a 4.0 scale
- Must maintain a grade point average of 3.40 or higher in Gannon undergraduate courses.
- Must maintain a grade point average of 3.40 or higher in the prerequisite courses (with no repeat courses).

Overall GPA will be reviewed at the end of the Freshman and Sophomore year. Overall and pre-requisite GPA will be reviewed at the end of the Junior year. GPA's are evaluated as reported by the Registrar's Office.

At the end of your junior year, your status will change from an undergraduate to graduate status that may affect your financial aid and on-campus housing. In addition, in order for the 3 +3 students to complete their undergraduate degree, they must be formally admitted to the DPT program and successfully complete the first year graduate courses. The graduate credits as specified below are the only credits which will be accepted for transfer to the undergraduate transcript for completion of the intended undergraduate degree. (B.S. Sport and Exercise Science or B.S. Science) Failure to successfully complete the graduate course work may result in additional undergraduate course work to fulfill the undergraduate degree requirements.

### Suggested Sport and Exercise Science Curriculum

FRESHMAN (34 credits)		
<i>Fall</i>		<i>Spring</i>
3	College Composition/LENG 111	3 Animal Form and Function/BIOL 124
3	Sacred Scriptures/LTHE 121	1 Animal Form and Funct Lab/BIOL 125
3	Molecular & Cellular Biology/BIOL 122	3 Critical Analysis and Composition/LENG 112
1	Molecular & Cell Biol Lab/BIOL 123	3 Sport Nutrition/SPRT 130
3	Intro to Psychology/PSYC 111	3 Intro to Philosophy/LPHI 131
3	Public Speaking/SPCH 111	3 Precalculus/MATH 135
2	First-Year Seminar/SPRT 101	1 PT Seminar I/PT 110
18		17
SOPHOMORE (34 credits)		
<i>Fall</i>		<i>Spring</i>
3	Philosophy II Series/LPHI	3 History Without Borders/LHST 111
3	General Chemistry I/CHEM 111	3 College Physics 2/PHYS 108
1	General Chemistry I Lab/CHEM 112	1 College Physics 2 Lab/PHYS 109
3	College Physics 1/PHYS 105	3 General Chemistry II/CHEM 114
1	College Physics 1 Lab/PHYS 106	1 General Chemistry II Lab/CHEM 115
3	Fine Art Series/LFIN	3 Theology II Series/LTHE
3	Statistics/PSYC 211 or MATH 213	3 Literature Series/LENG
		1 PT Seminar II/PT 210
17		18
JUNIOR (34 credits)		
<i>Fall</i>		<i>Spring</i>
3	Motor Development/SPRT 414	3 Animal Physio/BIOL 368
3	Theo/Philosophy III Series/LTHE, LPHI	1 Animal Physio Lab/BIOL 369
1	Leadership Seminar	4 Prev. & Care of Ath Inj/SPRT 420

- 3 Structural Kinesiology/SPRT 360
- 1 Struct Kinesiology Lab/SPRT 361
- 3 Psychopathology/PSYC 232
- 3 Human Gross Anatomy/BIOL 365
- 1 Human Gross Anat Lab/BIOL 366

18

SENIOR (26 credits)

*Fall*

- 5 Found of Human Mvmt/GDPT 818
- 1 Found of Human Mvmt Lab/GDPT 819
- 2 Research Applications: Evidence Based Practice I/GDPT 814
- 1 Community Health Initiative I/GDPT 816

9

- 3 Motor Learning and Performance/SPRT 415
- 3 Physiology of Exercise and Sport/SPRT 390
- 1 Physiology of Exercise and Sport Lab/SPRT 391
- 3 Senior Seminar/LBST 383

18

*Spring*

- 9 Exam, Eval & Interv for Musculoskeletal Mvmt Dysf of the Extremities & Lab/GDPT 822/824
- 4 Exam, Eval, & Interv for Musculoskeletal Mvmt Dysfunct of the Spine & Lab/GDPT 825/827
- 1 Pharmacology/GDPT 890
- 2 Health Care Systems & Policy I/GDPT 810
- 1 Community Health Initiative II/GDPT 826

17

132 Total credits

**Suggested Science Curriculum:**

FIRST YEAR

*First Semester*

- 3 Intro to Sacred Scripture/LTHE 121
- 3 College Composition/LENG 111
- 3 Molecular Cellular Biology/BIOL 122
- 1 Molecular Cellular Biol Lab/BIOL 123
- 3 Gen Chemistry I/CHEM 111
- 1 Gen Chemistry Lab/CHEM 112
- 2 First-Year Seminar

16

SECOND YEAR

*First Semester*

- 3 Public Speaking/ SPCH 111
- 3 Theology II Series/LTHE
- 3 Intro to Psychology/PSYC 111
- 3 College Physics 1/PHYS 105
- 1 College Physics 1 Lab/PHYS 106
- 3 Introduction to Philosophy/LPHI 131

16

THIRD YEAR

*First Semester*

- 3 Theology or Phil III Series/LTHE or LPHI

*Second Semester*

- 3 History Without Borders/LHST 111
- 3 Critical Analysis & Comp/LENG 112
- 3 Animal Form & Function/BIOL 124
- 1 Animal Form & Funct Lab/BIOL 125
- 3 General Chemistry II/CHEM 114
- 1 General Chemistry II Lab/CHEM 115
- 3 Precalculus/MATH 135
- 1 PT Seminar I/PT 110

18

*Second Semester*

- 3 Statistics/MATH 213, PSYC 211, SOCI 351
- 3 Psychology 200 level or higher/PSYC
- 3 Philosophy II Series/LPHI
- 3 College Physics 2/PHYS 108
- 1 College Physics 2 Lab/PHYS 109
- 3 Animal Physiology/BIOL 368
- 1 Animal Physiology Lab/BIOL 369
- 1 PT Seminar II/PT 210

18

*Second Semester*

- 3 Physiology of Exercise and Sport/SPRT 390

3	Literature Series/LENG	1	Physiology of Exercise and Sport Lab/SPRT 391
3	Kinesiology/SPRT 360	3	Basic Sociology/SOCI 110
1	Kinesiology Lab/SPRT 361	3	Fine Art Series/LFIN
3	Human Anatomy/BIOL 365	3	Senior Seminar/LBST 383
1	Human Anatomy Lab/BIOL 366	3	Earth Sci/Environmental Sci Elective
3	Earth Sci/Environmental Sci Elective		
1	Leadership Seminar		
18		16	
	FOURTH YEAR ( <i>Graduate School</i> )		
	<i>First Semester</i>		
2	Applied Anatomy/GDPT 811	6	Exam, Eval & Intervention for Musculoskeletal Mvmt of the Extremities/GDPT 822
5	Foundations in Human Movement/GDPT 818	3	Exam, Eval & Intervention for Musculoskeletal Mvmt Dysfunc of the Extremities Lab/GDPT 824
1	Foundations in Human Movement Lab/GDPT 819	2	Exam, Evaluation & Intervention for Musculoskeletal Mvmt Dysfunc of the Spine/GDPT 825
2	Research Applications: Evidence-Based Practice I/GDPT 814	2	Health Care System & Policy I/GDPT 810
		2	Exam, Evaluation & Intervention for Musculoskeletal Movement Dysf. of the Spine Lab/GDPT 827
		1	Pharmacology/GDPT 890
10		16	

128 credits total

Course Descriptions:

**PT 110: Physical Therapy Seminar I**  
This course will discuss the history of the physical therapy profession. Scope of practice, responsibilities, and relationships with other health professionals will be reviewed. The professional organization for physical therapists will be introduced to the students. The students will meet with clinicians who will discuss the many opportunities available to physical therapists. 1 credit

**PT 210: Physical Therapy Seminar II**  
This course is the second in the series of seminar classes to introduce the student to the physical therapy profession. It will allow the students additional observation of physical therapists in the clinic and to share their experiences with each other. It also enables the students to begin to develop their professional communication style including introduction to medical terminology and reading professional journals. 1 credit

PHYSICIAN ASSISTANT

MICHELE KAUFFMAN, J.D., MPAS, PA-C., *Chairperson*  
FACULTY: *Professor:* Michele Kauffman. *Associate Professor:* Kimberly Cavanagh. *Assistant Professors:* Heather Adams, Natasha Camera, Kristen Grippe, Blake Hoppe, Jennifer Majewski, Whitney Nolan, Caroline Palmer. *Medical Director:* John Jageman.

Physician Assistants (PA) are skilled, dependent health practitioners who are academically and clinically prepared to provide patient care services under the supervision of a physician.

Their specific tasks vary widely due to differences among state laws, hospital policies and utilization preferences of supervising physicians.

Generally, PAs are qualified to obtain patient histories, perform comprehensive physical examinations, order and interpret diagnostic laboratory tests, develop a diagnosis, implement a treatment plan for common illnesses, deliver patient education and counseling, perform certain surgical procedures, and provide emergency care. PAs may assist in surgery and deliver pre-operative and post-operative care. Physician Assistants may deliver patient care in any setting in which the physician works.

The Physician Assistant Department offers a Master of Physician Assistant Science degree following five years of increasingly specialized study. The curriculum is predominantly clinical during the fifth year. During the fifth year, clinical faculty, in conjunction with various health care institutions, introduce the students to professional physician assistant training. The program is offered primarily in clinical sites in northwestern Pennsylvania, Ohio and western New York, as well as some locations farther afield. Students are responsible for their own housing and transportation to and from clinical sites.

The PA program curricula of Gannon University's Physician Assistant Program is accredited by the Accreditation Review Commission on Education for the Physician Assistant, Inc. Applicants must meet the technical standards for admission to the program. For further details, contact the Admissions office.

### **Technical Standards**

A candidate for admission to the PA Program must have the use of certain sensory and motor functions to permit them to carry out the activities described in the sections that follow. Graduation from the program signifies that the individual is prepared for entry into clinical practice or into postgraduate training programs. Therefore, it follows that graduates must have the knowledge and skills needed to function in a broad variety of clinical situations and to render a wide spectrum of diagnostic and therapeutic care. The candidate and student must be able consistently, quickly, and accurately to integrate all information received by whatever sense(s) are employed. Also, they must have the intellectual ability to learn, integrate, analyze, and synthesize data.

A candidate for the PA Program ordinarily must have the following abilities and skills as explained below: observation; communication; motor; intellectual, conceptual, integrative, and quantitative; and behavioral and social. Where technological assistance is available in the program, it may permit for disabilities in certain areas. Under all circumstances, a candidate should be able to perform the following tasks in a reasonably independent manner:

- I. *Observation*: Candidates and students ordinarily must have sufficient vision to be able to observe demonstrations, experiments, and laboratory exercises. They must be able to observe a patient accurately at a distance and close at hand.
- II. *Communication*: Candidates and students ordinarily must be able to communicate with patients and colleagues. They should be able to hear, but if technological compensation is available, it may permit for some handicaps in this area. Candidates and students must be able to read, write, and speak English.
- III. *Motor*: Candidates and students ordinarily should have sufficient motor function such that they are able to execute movements reasonably required to provide general care and emergency treatment to patients. Examples of emergency treatment reasonably required of physician assistants is cardiopulmonary resuscitation, administration of intravenous medication, the application of pressure to stop bleeding, the opening of obstructed airways, the suturing of simple wounds, and the performance of simple obstetrical maneuvers. These actions require coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.

- IV. *Intellectual, Conceptual, Integrative, and Quantitative Abilities*: These abilities include measurement, calculation, reasoning, analysis, and synthesis. Problem solving, the critical intellectual skill demanded of a physician assistant, requires all of these intellectual abilities. In addition, candidates and students should be able to comprehend three-dimensional relationships and understand the spatial relationships of structures.
- V. *Behavioral and Social Abilities*: Candidates and students must possess the emotional health required for full utilization of the intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities attendant to the assessment and care of patients, and the development of mature, sensitive, and effective relationships with patients. Candidates and students must be able to tolerate physically taxing workloads, adapt to changing environments, display flexibility, and learn to function in the face of uncertainties inherent in the clinical problems of many patients. Compassion, integrity, concern for others, interpersonal skills, interest, and motivation are all personal qualities to be assessed during the admissions and educational processes.

The PA Department is committed to providing reasonable accommodations to students with an identifiable disability as defined by the Americans with Disability Act. In doing so, however, the PA Department must maintain the integrity of its curriculum and preserve those elements deemed essential to educating candidates to become effective physician assistants.

Students in the program must be of sufficient health to meet the criteria of our clinical affiliates.

The PA Department reserves the right to reassess the student's ability to meet the technical standards at any time during the student's training and to act accordingly.

### **Employment Policy**

Employment during the fourth year of the PA Program is not recommended. Demanding courses and time constraints are to be expected. Employment during the fifth year of the PA Program is strongly discouraged. Students will spend an average of 40 hours per week at their clinical site, plus complete reading assignments to prepare for end of rotation exams. Students may need to relocate every five weeks, precluding steady employment. Students who choose to work may jeopardize performance and continuation in the program.

### **Transfer Policies**

- Transfer students are accepted on a space availability basis at the freshman, sophomore, and junior level of the program.
- Students should apply through the Office of Admissions and request transfer status. Courses for transfer must be approved by the Dean's Office. Students accepted into the program will receive a written evaluation of their transcripts showing which courses were accepted into the program.
- To be considered for transfer into the program, a student must have at least a 3.0 overall GPA and a 3.0 in their science courses.
- Transfer students must repeat any science course which was taken longer than five years prior to program admission.
- Once matriculated into the program, Program GPA's of 3.0 must be maintained throughout the program as well as an overall GPA of 3.0
- 30 hours of volunteer/paid patient contact must be completed prior to matriculating.
- Transfer students must complete the course of study (found in this catalog) for the Physician Assistant Program.

- Personal interview is required.
- Upon matriculation, transfer students will receive a program handbook detailing the program's policies and procedures.
- Transfer students with a Bachelor's Degree should refer to Gannon's Graduate Catalog for prerequisite courses needed prior to application to the Post Baccalaureate program. All prerequisite courses are offered at Gannon University.
- Advanced standing is not granted in the graduate phase of the program. No credits are awarded for experiential learning.

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## **COURSE DESCRIPTIONS:**

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### **PHAS 100: First-Year Seminar: Applied Concepts in Health Care**

This course is a First Year Seminar in the Liberal Studies core curriculum. It is a discussion/ experience-based course intended to orient the new student to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life, and to encourage the development of academic, personal and spiritual dimensions of the student's life. This course will also provide an introduction to the field of health care including the principles of integrity that are essential to all health care professions as well as sources of information relating to the field of health care, how to search for these sources, and how to understand sources that are found. The course also investigates health care careers so that the student can plan his/her academic courses in a focused and analytical manner. *2 credits, Fall*

### **PHAS 121: Medical Terminology**

This course provides students with an introductory study of the medical language through prefix, suffix and root word forms. Anatomic and clinical terms pertaining to each body system are covered. Classroom activities emphasize pronunciation, interpretation and application of medical terms.

Prerequisite: PA major

*3 credits, Fall/Spring*

### **PHAS 215: Communication and Resources in the Patient Encounter**

This course is designed to introduce the students to communication skills in the patient encounter for the Physician Assistant, including boundaries of the interview, ethical professional behavior and establishing a provider/patient relationship. Emphasis will be placed on the interviewing process and communication techniques. This course will focus on communication skills with patients in various settings and exposure to resources available to assist in health care and special needs of patients to prepare the student for service-learning experiences.

Prerequisite: PA major

*1 credit, Spring*

### **PHAS 300: Leadership Seminar**

The Leadership Seminar introduces students to a three-dimensional model of leadership, including a repertoire of leadership skills and means of using those skills responsibly in the various communities to which they belong. In addition, the course helps students explore the relevance of leadership skills in the leadership process. Ethical reasoning and Catholic social justice teaching serve as the basis for students' leadership development as reflected both in this course and in the co-requisite Theology or Philosophy Series III course. *1 credit Fall*

### **PHAS 312: Community Resources in Healthcare: A Service Learning Experience**

The goal of this course is to introduce the student to community service-learning through student/client experience in various health care/social service agencies within the Gannon and Erie community. Collectively each student's experience will provide a model resource of agencies available to communities and how each agency assists in the care of the patient.

Prerequisite: PA major

*1 credit, Fall, Spring*

### **PHAS 363: Research Process**

The primary goal of this course is for students to be comfortable with all aspects of clinical

research in the Health Science field. All practitioners need to have an understanding of the ethical design of studies and the ethical treatment of human subjects in clinical research. Therefore, part of the class is dedicated to the study of "Good Clinical Practices (GCP)" as defined by the US Food and Drug Administration. All students will be required to obtain NIH certification in this area. In addition, the course focuses on the theoretical and practical aspects of designing research studies. We will survey multiple types of research methodologies including the statistical basis for making rational conclusions based upon the data. Finally, we will focus on medical writing, including how to do a literature search, write an abstract, and write a research paper. Appropriate form and style utilization will be discussed. Students will be required to complete multiple assignments including literature critiques, bibliographics, editing and the completion of an entire literature review. *3 credits, Fall*

**PHAS 408: Behavioral Medicine**

This course is designed to introduce the students to the major mental health conditions including adolescent and childhood disorders. Special attention will be given to disease characteristics, etiologies, and applicable behavioral and pharmacological treatments.

Prerequisite: PA major

*1 credit, Spring*

**PHAS 411: Physical Diagnosis I**

The techniques of history-taking, discussion and demonstration of normal physical findings with various organ systems and alteration of physical signs in disease states are introduced to the student. The relationship of physical signs to altered physiology is emphasized.

Prerequisite: PA major

*5 credits, Fall*

**PHAS 413: Physical Diagnosis II**

Designed to complement the physical diagnosis lectures, this course enables students to develop skills in performing histories and physical examinations on fellow students.

Prerequisite: PA major

*1 credit, Fall*

**PHAS 414: Medical Lecture Series I**

Symptoms, signs and abnormal body function are taught in a problem-oriented manner, including a logical method, relevant diagnostic maneuvers, possible therapeutic intervention and patient education. The lectures complement the knowledge acquired in Physical Diagnosis, and is correlated with the Pharmacotherapeutics and Clinical Science courses.

Prerequisite: PA major

*3 credits, Fall*

**PHAS 415: Medical Lecture Series II**

A continuation of PHAS 414

Prerequisite: PHAS 414

*6 credits, Spring*

**PHAS 416: Physical Diagnosis III**

In addition to performing histories and physical examination on hospitalized or nursing home patients, the student is exposed to a wide variety of frequently encountered medical problems and begins to develop a basic understanding of pathophysiology. In addition the student will develop a methodology for approaching any presenting medical complaint.

Prerequisites: PHAS 411, 413

*1 credit, Spring*

**PHAS 424: Pharmacotherapeutics I**

This course is designed to provide both basic information regarding the pharmacology of many commonly used medications coupled with a practical and systematic approach to the selection of appropriate drug therapy for patients. Two major areas of focus are a review of the principles of therapeutics (e.g., pharmacokinetics and pharmacodynamics) and a review of recommended drug therapy for common medical disorders (e.g., hypertension, peptic ulcer disease). Students will be instructed on a process through which they will think pharmacotherapeutically - that is, to identify a disease, review the drugs available to treat that disease, select treatment based upon goals of therapy and specific patient parameters and how to adjust therapy if required. Also, all lectures are coordinated with Medical Lecture

Series such that medications are reviewed in close proximity to lectures on pathophysiology in order to enhance the learning experience for students.

Prerequisite: PA major

*3 credits, Fall*

### **PHAS 425: Pharmacotherapeutics II**

A continuation of PHAS 424

Prerequisite: PHAS 424

*2 credits, Spring*

### **PHAS 431: Clinical Science I**

This course is designed to provide a basic understanding of the pathophysiology and clinical diagnostic methods involved in the evaluation of common disease processes. Emphasis is placed on understanding molecular structure and function as it applies to application and interpretation of clinical testing for diagnostic/therapeutic purposes. Topics include hematology, immunology & serology, medical microbiology, virology, clinical chemistry, urine studies and pertinent genetic testing. Lectures correlate with Physical Diagnosis I & II, Medical Lecture Series I, Pharmacotherapeutics I and Radiology in a systems oriented approach to the disease processes.

Prerequisite: PA major

*3 credits, Fall*

### **PHAS 432: Clinical Science II**

A continuation of PHAS 431 / GPHAS 531, this course is designed to provide a basic understanding of the pathophysiology and clinical diagnostic methods involved in the evaluation of common disease processes discussed in Medical Lecture Series II and Pharmacotherapeutics II. Topics continue from Clinical Science I and include parasitology, arterial blood gas interpretation, electrocardiography interpretation and fluid, electrolyte & acid-base balance.

Prerequisite: PHAS 431

*2 credits, Spring*

### **PHAS 438: Pediatrics/Obstetrics/Gynecology Lecture Series**

This course will discuss common disease process in Obstetrics/Gynecology and Pediatrics in a problem oriented manner to enable the student to incorporate knowledge of pathogenesis, clinical findings, appropriate laboratory and diagnostic testing and create a treatment plan for each disease process.

Prerequisite: PHAS 414

*4 credits, Spring*

### **PHAS 443: Research Proposal**

Students distinguish between different types of research and systematically examine research designs and methodologies for the purpose of development of a proposal. Students will develop a research proposal under the direction of a research advisor.

Prerequisite: PA major

*1 credit, Spring*

### **PHAS 445: Problem Based Medicine**

This course offers the student an introduction to evidence based medicine. Emphasis will be placed on clinical problem solving through a case study approach. The student will be instructed to incorporate knowledge of pathogenesis, clinical findings, laboratory and other diagnostics to develop a differential diagnosis. This approach is designed to initiate critical thinking about medical problems and incorporation of treatment plans.

Prerequisite: PHAS 414

*2 credits, Spring*

### **PHAS 490: Special Topics**

This is an elective course which will cover topics of special interest.

*1-3 credits*

### **GPHAS 600: Pre-Rotation Lecture and Skills Lab**

This laboratory section is designed to complement and integrate the Pre-Rotation Lecture Series course in the Physician Assistant Program. The Laboratory experiences will supplement many of the lectures and afford students hands-on opportunities to practice clinical skills such as IVs, injections, NG tubes, Phlebotomy, Catheterization, Casting, Knot tying, and Suturing



using task trainers. Clinical experiences include CPR/ACLS, and computer-based medical training.

Prerequisite: PHAS 415

*1 credit, Summer*

### **GPHAS 601: Pre-Rotation Lecture Series**

This capstone course is designed to complement and integrate the Liberal Studies academic experience and didactics of the pre professional phase of the Physician Assistant Program. Students are expected to demonstrate their capacity to utilize concepts and methodologies presented in previous Liberal Studies courses as we explore the issues related to medical ethics. Issues explored will include but not be limited to the patient and health care provider relationship, human experimentation, reproductive and dying technology. Topics in the areas of Emergency Medicine, Orthopedics, and Surgery will be discussed utilizing the foundation of information previously presented in the didactic pre-professional phase.

Prerequisite: PHAS 415

*4 credits, Summer*

### **GPHAS 602: Business Practices and Current Issues for Physician Assistants**

This course is designed to introduce the Physician Assistant student to practice management in the clinical setting. Emphasis is placed on understanding health insurance coverage, cost containment and the quality of health care. Diagnosis and procedure coding will be introduced and legal issues related to the clinical setting are addressed.

Prerequisite: PA major

*2 credit, Summer*

### **GPHAS 614: General Surgery Rotation**

This five week clinical experience is designed to allow the student exposure to a wide variety of acute surgical problems. Under supervision, the student is expected to participate in preoperative and postoperative patient care. This experience will include taking histories, performing physical examinations, and assisting in the emergency department and operating room.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *5 credits*

### **GPHAS 616: Clinical Research**

This is a four week rotation in which students participate in medical research under the direction of a preceptor or develop a community health project. This project may involve reviewing charts, interviewing patients, reviewing existing data, collecting data and/or participating in ongoing clinical trials or educating the public. Students are required to complete a project outline and will begin to compose a research or project paper of publishable quality. The students will develop a power point presentation in order to illustrate their research or project.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *4 credits*

### **GPHAS 617: Family Medicine Rotation I**

This five week clinical experience is designed to familiarize the student with all aspects of Family Practice in ambulatory, inpatient and long-term care settings. The student, through the collection and acquisition of historical, physical and laboratory data, develops an understanding of patient evaluation and treatment under the supervision of physicians or mid-level practitioners. This clinical rotation will emphasize aspects of Internal Medicine and the unique characteristics of the care of the geriatric patient.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *5 credits*

### **GPHAS 618: Family Medicine Rotation II**

This five week clinical experience is designed to familiarize the student with all aspects of Family Practice in ambulatory, inpatient and long-term care settings. The student, through the collection and acquisition of historical, physical and laboratory data, develops an understanding of patient evaluation and treatment under the supervision of physicians or mid-level practitioners. This clinical rotation will emphasize normal variations of growth and development of children from infancy to adolescence, as well as, exposure to acute and chronic illnesses of childhood.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *5 credits*

**GPHAS 619: Family Medicine Rotation III**

This five week clinical experience is designed to familiarize the student with all aspects of Family Practice in ambulatory, inpatient and long-term care settings. The student, through the collection and acquisition of historical, physical and laboratory data, develops an understanding of patient evaluation and treatment under the supervision of physicians or mid-level practitioners. This clinical rotation will emphasize routine gynecologic care and common complaints as well as prenatal care of the female patient. This experience will also focus on common behavioral health disorders encountered in primary care.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *5 credits*

**GPHAS 621: Emergency Medicine Rotation**

This five week clinical experience is designed to stress the evaluation and management of both medical and surgical problems of the ambulatory patient in an acute care situation. Students gain experience in the initial evaluation of patients in the emergency setting, perform problem specific examinations, practice minor surgery skills, and participate in the management of orthopedic problems.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *5 credits*

**GPHAS 622: Family Medicine Rotation IV**

This five week clinical experience is designed to familiarize the student with all aspects of Family Practice in ambulatory, inpatient and long-term care settings. The student, through the collection and acquisition of historical, physical and laboratory data, develops an understanding of patient evaluation and treatment under the supervision of physicians or mid-level practitioners. This clinical rotation will emphasize the evaluation and treatment of conditions common at the primary care level and the appropriate health maintenance measures for different age groups from infancy to geriatrics.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *5 credits*

**GPHAS 623: Elective Rotation I**

This five week clinical experience is designed to acquaint the student with the role of the physician assistant in practice. Students train under the supervision of a physician or mid-level provider in an office/or hospital setting. Through this clinical rotation the student will gain an in-depth exposure to a wide-spectrum of acute and chronic patient problems. This experience can occur in a clinical area that has already been experienced by the student or a specialty area of the student's choosing.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *5 credits*

**GPHAS 624: Elective Rotation II**

This five week clinical experience is designed to acquaint the student with the role of the physician assistant in practice. Students train under the supervision of a physician or mid-level provider in an office/or hospital setting. Through this clinical rotation the student will gain an in-depth exposure to a wide-spectrum of acute and chronic patient problems. This experience can occur in a clinical area that has already been experienced by the student or a specialty area of the student's choosing.

Prerequisites: Successful completion of the senior year clinical and didactic courses. *5 credits*

**GPHAS 631: Research/Project Guidance**

Students complete a research project (including analysis of data and reporting results) using the scientific method to answer a question in clinical practice, under the direction of a research/project advisor. Projects may use a variety of methodologies. Students will finalize a power point presentation and/or poster for presentation or display.

*2 credits*

**GPHAS 634: Clinical & Professional Capstone**

Graduation from an accredited PA program qualifies an individual to take the Physician Assistant National Certification Examination (PANCE). Successful completion of PANCE is mandatory for clinical practice as a PA. As the student works to achieve professional status as a PA, the Clinical and Professional Capstone allows for an opportunity to merge the clinical

rotation experience with classroom learning through a high yield didactic approach and culminating with the program Summative Examination. The course will provide a comprehensive overview of requisite knowledge for the graduating PA student. Emphasis will be placed on identified organ systems and task areas that are consistent with the NCCPA Examination Content Blueprint for the PANCE. Additionally, the Clinical and Professional Capstone will focus on the application of knowledge and skills for clinical practice case study and evidence based medicine facilitating the transition from student to medical provider. Prerequisite: Enrollment in the Graduate phase of the Physician Assistant program. 2 credits

### Master of Physician Assistant Science Curriculum

#### Liberal Studies/Liberal Studies Core Courses

3	LENG 111 College Composition	3	LPHI Philosophy II Series
3	LENG 112 Critical Analysis & Composition	3	LTHE/LPHI Theo/Phil III Series
3	LENG Literature Series	3	LFIN Fine Art Series
3	LTHE 121 Sacred Scriptures	3	LHST 111 History Without Borders
3	LTHE Theology II Series	3	PSYC 111 Intro to Psychology
3	LPHI 131 Intro to Philosophy	3	SOCI 110 Basic Sociology
3	SPCH 111 Public Speaking	1	PHAS 300 Leadership Seminar
2	PHAS 100 First-Year Seminar		

#### 42 Total

#### Other Courses

3	CIS 170-173 or CIS 150 PC Courses or Business Technology I
3	PSYC 211, SOCI 351 or MATH 213 Statistics
3	Elective
3	Elective

#### 12 Total

#### Basic Science Courses

3	BIOL 122 Molecular Cellular Biology	1	CHEM 104 Chemistry of Life I Lab
1	BIOL 123 Molecular Cellular Biology Lab	3	CHEM 106 Chemistry of Life II
3	BIOL 124 Animal Form & Function	1	CHEM 107 Chemistry of Life II Lab
1	BIOL 125 Animal Form & Function Lab	3	DIET 202 or SPRT 130 Nutrition or Nutrition for Sports & Exercise
3	CHEM 103 Chemistry of Life I		

#### 19 Total

#### Physician Assistant Courses

3	PHAS 121 Medical Terminology	1	PHAS 312 Community Resources in Healthcare: A Service Learning Experience
1	PHAS 215 Communication & Resources in the Patient Encounter		

#### 5 Total

#### PA Program Curricula

3	BIOL 232 Human Genetics	1	BIOL 369 Animal Physiology Lab
3	BIOL 365 Human Gross Anatomy	3	BIOL 378 Medical Microbiology
1	BIOL 366 Human Gross Anatomy Lab	1	BIOL 379 Medical Microbiology Lab
3	BIOL 368 Animal Physiology	3	PHAS 363 The Research Process

#### 18 Total

FOURTH YEAR

*Fall Semester*

- 5 PHAS 411 Physical Diagnosis I
- 1 PHAS 413 Physical Diagnosis Lab II
- 3 PHAS 414 Medical Lecture Series I
- 3 PHAS 424 Pharmacotherapeutics I
- 3 PHAS 431 Clinical Science I
- 3 RADS 441 Intro to Radiology

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18

*Spring Semester*

- 1 PHAS 408 Behavioral Medicine
- 6 PHAS 415 Medical Lecture Series II
- 1 PHAS 416 Physical Diagnosis Lab III
- 2 PHAS 425 Pharmacotherapeutics II
- 2 PHAS 432 Clinical Science II
- 4 PHAS 438 PEDS/OB/GYN
- 2 PHAS 445 Problem-Based Medicine

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18

Requirements complete for Bachelor of Science degree with a major in Health Science

FOURTH YEAR (start of Graduate Phase)

*Summer Semester*

- 1 GPHAS 600 Pre-Rotation Lecture Series Lab
- 4 GPHAS 601 Pre-Rotation Lecture Series
- 2 GPHAS 602 Business Practice for PAs
- 5 GPHAS 617 Family Medicine Rotation I

—  
12

FIFTH YEAR

*Fall Semester*

- 5 GPHAS 618 Family Medicine Rotation II
- 5 GPHAS 619 Family Medicine Rotation III
- 5 GPHAS 614 General Surgery Rotation

—  
15

*Spring Semester*

- 4 GPHAS 616 Clinical Research
- 5 GPHAS 621 Emergency Medical Rotation
- 5 GPHAS 622 Family Medicine Rotation IV

—  
14

FIFTH YEAR

*Summer Semester*

- 5 GPHAS 623 Elective Rotation I
- 5 GPHAS 624 Elective Rotation II
- 2 GPHAS 631 Research Guidance
- 2 GPHAS 634 Clinical & Professional Capstone

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14

Requirements complete for Master of Physician Assistant Science

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## PHYSICS

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NICHOLAS CONKLIN, *Chairperson*

FACULTY: *Associate Professor:* Nicholas Conklin. *Assistant Professor:* Michael Ferralli. *Instructor:* Perry Hilburn.

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### COURSE DESCRIPTIONS:

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**PHYS 101: Concepts in Physics**

This one-semester course provides an introduction to fundamental concepts in physics sufficient to provide a foundation for other courses in the physical and medical sciences. The course is appropriate for all students, particularly those in allied-health majors. Topics will include motion, center of mass, levers, force, energy, momentum, pressure, fluid dynamics,

thermodynamics, and sound waves. While emphasis is placed on mastery of basic concepts, computations requiring high-school level math are an integral part of the course.

Prerequisite: None; however, high school trigonometry, MATH 111, 112, or 114 are strongly recommended.

*3 credits*

### **PHYS 105: College Physics 1**

This course provides an algebra and trigonometry-based introduction to mechanics, fluids, and waves, and emphasizes quantitative and conceptual understanding of the material.

Topics covered include kinematics in one and two dimensions, Newton's laws of motion, rotational motion, gravitation, conservation of energy and momentum, fluids, oscillations, and sound.

Pre-requisites: MATH 112 or MATH 135 or MATH 140

*3 credits*

### **PHYS 106: College Physics 1 Lab**

In this laboratory course, students will work in groups to perform experiments to reinforce concepts from PHYS 105 (College Physics 1). Labs are designed to build conceptual and quantitative understanding of the material.

Co/Pre-requisite: PHYS 105

*1 credit*

### **PHYS 108: College Physics 2**

This course provides an algebra-based introduction to thermodynamics, electricity, magnetism, and optics, and emphasizes quantitative and conceptual understanding of the material. Topics covered include ideal gas laws and kinetic theory, calorimetry and heat transfer, the laws of thermodynamics, electric fields and potentials, basic electric circuits, magnetism, electromagnetic induction, geometric optics, and the wave nature of light.

Pre-requisite: PHYS 105

*3 credits*

### **PHYS 109: College Physics 2 Lab**

In this laboratory course, students will work in groups to perform experiments to reinforce concepts from PHYS 108 (College Physics 2). Labs are designed to build conceptual and quantitative understanding of the material.

Co/Pre-requisite: PHYS 108

*1 credit*

### **PHYS 111: General Physics III**

An introduction to mechanics. Topics covered include kinematics, dynamics, energy, momentum and rotation.

Prerequisite: MATH 140

*3 credits*

### **PHYS 112: General Physics III Lab**

Experimental verification of some topics from PHYS 111. Lab includes computer use in data collection.

*1 credit*

### **PHYS 210: Fundamentals of Physics 1: Mechanics**

This course provides a calculus-based introduction to mechanics and emphasizes both quantitative and conceptual understanding of the material. Topics covered include kinematics in one and two dimensions, Newton's laws of motion, rotational motion, conservation of energy and momentum, and gravitation.

Pre-requisite: MATH 140

Co-requisite: MATH 141

*3 credits*

### **PHYS 211: Fundamentals of Physics 1 Lab**

In this laboratory course, students will work in groups to perform experiments to reinforce concepts from PHYS 210 (Fundamentals of Physics 1). Labs are designed to build conceptual and quantitative understanding of the material.

Co/Pre-requisite: PHYS 210 or PHYS 111

*1 credit*

### **PHYS 212: Fundamentals of Physics 2: Fluids and Thermodynamics**

This course provides a calculus-based introduction to fluids, thermodynamics, waves and

optics, and emphasizes both quantitative and conceptual understanding of the material. Topics covered include fluid mechanics, oscillations, waves and sound, the laws of thermodynamics, heat, kinetic theory of gases, geometric optics, and interference phenomena. Pre-requisites: MATH 141 and either PHYS 111 or PHYS 210 *3 credits*

**PHYS 213: Fundamentals of Physics 2 Lab**

In this laboratory course, students will work in groups to perform experiments to reinforce concepts from PHYS 212 (Fundamentals of Physics 2). Labs are designed to build conceptual and quantitative understanding of the material. Co/Pre-requisite: PHYS 212 *1 credit*

**PHYS 214: Fundamentals of Physics 3: Electricity and Magnetism**

This course provides a calculus-based introduction to electricity and magnetism and emphasizes quantitative and conceptual understanding of the material. Topics covered include Coulomb's Law, electric fields, electric potential, basic DC and AC circuits, magnetic fields, magnetic induction, and Maxwell's equations. Pre-requisites: MATH 141 and either PHYS 111 or PHYS 210 *3 credits*

**PHYS 215: Fundamentals of Physics 3 Lab**

In this laboratory course, students will work in groups to perform experiments to reinforce concepts from PHYS 214 (Fundamentals of Physics 3). Labs are designed to build conceptual and quantitative understanding of the material. Co/Pre-requisite: PHYS 214 *1 credit*

**PHYS 218: Lab for Engineers**

In this laboratory course, students will work in groups to perform experiments to reinforce selected topics from PHYS 210 (Fundamentals of Physics 1) and PHYS 212 (Fundamentals of Physics 2). Labs are designed to build conceptual and quantitative understanding of the material.

Pre-requisite: PHYS 111 or PHYS 210

Co/Pre-requisite: PHYS 212 *1 credit*

**PHYS 300: Introduction to Modern Physics**

An historical and quantitative presentation of the events and thinking which led to the twentieth century revision of Classical Physics. An introduction to Relativity, Planck Quantum Theory, the Bohr atom, de Broglie's thesis, Schrodinger quantum mechanics, and electronic spin. Prerequisites: PHYS 210, 212, 214 or equivalent. *3 credits*

**PHYS 301: Theoretical Mechanics**

Particle dynamics, moving reference systems, central forces, collision theory, dynamics of a system of particles, rigid body motion, Lagrangian and Hamiltonian Theory. Prerequisites: PHYS 210, 212, 214, MATH 242. *3 credits*

**PHYS 304: Mathematical Methods of Physics**

Fourier series, Fourier transform, Laplace transform, vector field theory, complex variables, partial differential equations, special functions, probability, numerical analysis, matrices. Prerequisite: MATH 242 *3 credits*

**PHYS 321: Statistical Mechanics**

Boltzman, Fermi-Dirac, and Bose-Einstein statistics by the combinatorial methods, entropy and probability, partition functions, classical and quantum mechanical specific heats of gases and solids, Planck radiation law, paramagnetic susceptibilities. Prerequisites: Chem/CHEM 331, MATH 242 *3 credits, Spring*

**PHYS 332: Experimental Physics**

Selected experiments from the entire field, designed to develop a facility with laboratory techniques, a critical awareness of the errors of measurements and the consequent limitations

on empirical conclusions, and an original initiative toward minimizing these limitations through refinements of techniques and instruments.

Laboratory: Six hours per week.

2 credits

### **PHYS 380: Undergraduate Research I**

The student will work to complete an original research project in physics with a Physics faculty member.

1-3 credits

### **PHYS 381: Undergraduate Research II**

The student will work to complete an original research project in physics with a Physics faculty member in continuation of PHYS 380.

1-3 credits

### **PHYS 406: Optics**

Fermat's principles, thick lens theory, third order aberration theory, interference phenomena, Kirchoff's integral, Fresnel and Farunhoffer diffraction, Fourier transform optics, coherence times and lengths, holography, polarization, absorption, scattering, dispersion.

Prerequisites: PHYS 212, MATH 242

3 credits

### **PHYS 430: Quantum Mechanics I**

Schrödinger Quantum Mechanics from an operator standpoint, wells, barriers and the harmonic oscillator, the Hydrogen atom, electric spin, angular momentum, perturbation theory, matrix representations, relativistic corrections, multi-electron atoms, Zeeman and Stark effects, molecular states.

Prerequisites: PHYS 300, 304

3 credits

### **PHYS 431: Quantum Mechanics II**

Schrödinger Quantum Mechanics from an operator standpoint, wells, barriers and the harmonic oscillator, the Hydrogen atom, electric spin, angular momentum, perturbation theory, matrix representations, relativistic corrections, multi-electron atoms, Zeeman and Stark effects, molecular states.

Prerequisites: PHYS 300, 304

3 credits

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## **PRE-HEALTH PROGRAMS**

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KARLA J. MASHBURN, M.S., MLS (ASCP)<sup>CM</sup>, *Director, Pre-Health Advising Program*

The following programs are in this section:

### **Traditional Programs**

- Pre-Chiropractic Medicine
- Pre-Dental Medicine
- Pre-Medicine
- Pre-Optometry
- Pre-Pharmacy
- Pre-Podiatric Medicine
- Pre-Veterinary Medicine

### **Affiliation Programs**

#### **Chiropractic Medicine**

- NYCC 3+3 Accelerated Chiropractic Medicine
- NYCC 4+3 Chiropractic Medicine

#### **Dental Medicine**

- CWRU 3+4 Early Acceptance Dental Medicine
- LECOM 4+4 Early Acceptance Dental Medicine

#### **Medicine**

- LECOM 3+4 Early Acceptance Medicine

### **Optometry**

- Salus University 3+4 Accelerated Optometry

### **Pharmacy**

- Duquesne University 2+4 Accelerated Pharmacy
- LECOM 2+3/2+4 Early Acceptance Pharmacy
- LECOM 3+3/3+4 Early Acceptance Pharmacy
- LECOM 4+3/4+4 Early Acceptance Pharmacy
- University at Buffalo 3+4 Accelerated Pharmacy
- University of Charleston 2+4 Accelerated Pharmacy
- University of Charleston 3+4 Accelerated Pharmacy

### **Podiatric Medicine**

- Kent State University 3+4 Accelerated Podiatric Medicine
- Temple University 3+4 Accelerated Podiatric Medicine

LECOM 4+4 Early Acceptance Medicine  
PCOM 3+4 Accelerated Medicine  
PCOM 4+4 Medicine  
Ross University 4+4 Medicine  
UMHS 3+4 Accelerated Medicine  
UMHS 4+4 Medicine

**Veterinary Medicine**  
Ross University 3+4 Accelerated Veterinary  
Medicine  
Ross University 4+4 Veterinary Medicine  
**Preparatory Program**  
Pre-Health Qualifications

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**PRE-CHIROPRACTIC MEDICINE, PRE-DENTAL  
MEDICINE, PRE-MEDICINE, PRE-OPTOMETRY, PRE-  
PODIATRIC MEDICINE, PRE-VETERINARY MEDICINE**

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These programs prepare students for admission to any chiropractic, dental, medical, optometric, podiatric, or veterinary school in the United States. These health professional schools require at least two semesters of biology with laboratories, four semesters of chemistry with laboratories, and two semesters of physics with laboratories. Since additional academic requirements vary by profession, and even by schools within a single profession, it is essential to meet the exact requirements for each professional school applied to.

Gannon’s pre-health programs have a long-standing tradition of excellence. Nearly 100% of competitive applicants are accepted to health professional schools each year.

**GU Undergraduate Entry Requirements:**

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.0 or higher on a 4.0 scale
- Minimum SAT score of 1130 (new SAT)/1050 (old SAT) or ACT composite score of 23

**Curriculum**

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry/MATH 112 <b>or</b> Calculus 1/MATH 140	3	Calculus 1/MATH 140 <b>or</b> Calculus 2/ MATH 141 <b>or</b>
3	College Composition/LENG 111		Applied Statistics/ MATH 213
2	First-Year Seminar	3	Critical Analysis & Composition/ LENG 112
		3	History Without Borders/LHST 111
<hr/> 16		<hr/> 17	

Students planning to complete a traditional four-year degree should select an academic major upon completion of their third semester. Most students complete the biology or chemistry major curriculum, but other majors are viable options for students desiring admission to health professional schools. Non-science majors may become candidates for admission, if they have taken the prerequisite science courses required by the school to which they apply. For example, pre-medical subjects required by U.S. medical schools are listed in the *Medical School Admission Requirements (MSAR)*, published by the Association of American Medical Colleges.



If time permits within a student's major curriculum, the following courses are recommended:

- Applied Statistics (MATH 213)
- Organic Chemistry III & Lab (CHEM 323/324)
- Comparative Vertebrate Anatomy & Lab (BIOL 292/293)
- Histology & Lab (BIOL 320/321)
- Animal Physiology & Lab (BIOL 368/369)
- Genetics & Lab (BIOL 345/346)
- Structural Biochemistry (CHEM 366)

### Advising

Students participating in a pre-health program are assigned two pre-health advisors. The primary academic advisor assists students in scheduling courses appropriate for their chosen major curriculum. The Director of the Pre-Health Advising Program acts as a secondary advisor for all pre-health students, preparing students to become qualified professional school applicants and making recommendations on their behalf in collaboration with other faculty evaluators.

### Early Acceptance

A three-year option is available to extraordinary students who have completed three years of undergraduate study at Gannon University (a minimum of 96 credits including all of the liberal studies core requirements), and have achieved early acceptance to an accredited health professional school. The student must petition the Director of the Pre-Health Advising Program, who in consultation with the Dean of the Morosky College of Health Professions and Sciences, may award a Bachelor of Science degree in health science upon completion of the first year of study at an accredited health professional school. The student must submit an official transcript showing completion of the first year of coursework to the Gannon University Registrar, who will forward it to the Director for review. Upon the Director's and Dean's approval, a B.S. in health science will be awarded to the student.

## PRE-PHARMACY

Students participating in this program who complete a minimum of 60 credits will be eligible to apply to any of the 136 accredited pharmacy schools across the U.S. After completing the first semester, students should begin to think about what pharmacy school(s) they would like to apply to, and look up the prerequisite coursework to ensure it is included in the undergraduate curriculum. Students planning to complete a traditional four-year degree should select an academic major upon completion of their third semester. For these students, courses selected after the freshman year will depend upon the student's final choice of major.

### GU Undergraduate Entry Requirements:

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.0 or higher on a 4.0 scale
- Minimum SAT score of 1130 (new SAT)/1050 (old SAT) or ACT composite score of 23

### Curriculum

FRESHMAN	
<i>First Semester</i>	<i>Second Semester</i>
3 Molecular and Cellular Biology/ BIOL 122	3 Animal Form and Function/ BIOL 124
1 Molecular and Cell. Biology Lab/ BIOL 123	1 Animal Form and Function Lab/ BIOL 125

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3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Calculus 2/ MATH 141 <b>or</b>
3	College Composition/LENG 111		Applied Statistics/MATH 213
3	Sacred Scriptures/LTHE 121	3	Critical Analysis & Composition/ LENG 112
		3	History Without Borders/LHST 111
<hr/> 17		<hr/> 17	

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## NYCC 3+3 ACCELERATED CHIROPRACTIC MEDICINE, NYCC 4+3 CHIROPRACTIC MEDICINE

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Gannon University, in affiliation with New York Chiropractic College (NYCC) located in Seneca Falls, New York, offers two programs for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Chiropractic (D.C.) degree from NYCC. The 3+3 accelerated program grants highly motivated and academically strong students an opportunity to matriculate to NYCC after completing only three years of undergraduate study at Gannon University. Successful completion of the first year of chiropractic school at NYCC will allow students in the 3+3 accelerated program to earn a Bachelor of Science degree in health science from Gannon University. The majority of students complete the traditional 4+3 program, which allows students to complete a four-year bachelor's degree prior to attending NYCC. Qualified students enrolled in these programs will be conditionally guaranteed an interview with NYCC, providing these students with an advantage over students from other institutions at the time of application. Participation in either program does not restrict students' ability to apply to other chiropractic schools.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.0 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become a chiropractor

### NYCC Entry Requirements

After three or four years of undergraduate study, the participant is conditionally guaranteed an interview and possible admission to NYCC if the following requirements are satisfied.

- Completion of all required Liberal Studies Core Curriculum courses as stated in the Undergraduate Catalog of Gannon University
- Completion of the course of study with a cumulative grade point average of at least 3.00, with a minimum of C (2.00) in all specified science courses (general chemistry, organic chemistry, biology and physics)
- Letter of intent submitted to NYCC Office of Admissions during the first year at Gannon University, identifying student as an articulation student and the desired date of entrance to NYCC
- Application for admission to NYCC one year in advance of their desired entrance date, completing all other application procedures, including submission of official college transcripts, furnishing of three character references (at least one from a Doctor of Chiropractic and two from the faculty members at Gannon University)
- Satisfactory admissions interview with NYCC

- Any additional requirements as outlined through the affiliation agreement between Gannon University and NYCC; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

In recognition of students' completion of the program including procedures outlined above, New York Chiropractic College shall accept all such students for the entrance date of their choice.

## Curriculum

### NYCC 3+3 ACCELERATED CHIROPRACTIC MEDICINE

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry/MATH 112 <b>or</b> Calculus 1/ MATH 140	3	Critical Analysis & Composition/ LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	History Without Borders/LHST 111
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry I/CHEM 221	3	Animal Physiology/BIOL 368
1	Organic Chemistry I Lab/CHEM 222	1	Animal Physiology Lab/BIOL 369
3	College Physics 1/PHYS 105	3	Organic Chemistry II/CHEM 224
1	College Physics 1 Lab/PHYS 106	1	Organic Chemistry II Lab/CHEM 225
3	Theology II Series/LTHE*	3	College Physics 2/PHYS 108
3	Introduction to Philosophy/LPHI 131	1	College Physics 2 Lab/PHYS 109
3	Public Speaking/SPCH 111	3	Philosophy II Series/LPHI*
17		15	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3-4	Biology Electives**	3	Genetics/BIOL 345
3	Structural Biochemistry/CHEM 366	3-4	Biology Electives**
3	Applied Statistics/MATH 213	3	Fine Arts Series/LFIN*
3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237	3	Literature Series/LENG*
3	Introduction to Psychology/PSYC 111	3	Senior Seminar/LBST 383
1	Leadership Seminar		
16-17		15-16	

\*Please refer to the Undergraduate Catalog for course options.

\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): *Ecosystem Biology and Evolution* (BIOL 126/127); ***Vertebrate Embryology*** (BIOL 307/308); ***Histology*** (BIOL 320/321); ***Microbiology*** (BIOL 331/332); *Immunology* (BIOL 338/339); *Virology* (BIOL 334); *Parasitology* (BIOL 354/355); *Endocrinology* (BIOL 363); ***Human Gross Anatomy*** (BIOL 365/366); ***Cellular Biochemistry*** (BIOL 373/374) and *Cell Biology* (BIOL 375/376); please consult with your advisor.

**Total Credits to be Completed at Gannon: 96-98**

NYCC 4+3 CHIROPRACTIC MEDICINE

(Biology Curriculum†)

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	College Composition/LENG 111	3	Trigonometry/MATH 112 <b>or</b>
3	Sacred Scriptures/LTHE 121		Calculus 1/MATH 140
2	First-Year Seminar	3	Critical Analysis & Composition/ LENG 112
<hr/>		3	Intro to Philosophy/LPHI 131
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Ecosystem Biology and Evolution/ BIOL 126	4	Biology Electives**
1	Ecosystem Biology and Evol. Lab/ BIOL 127	3	Organic Chemistry II/CHEM 224
3	Organic Chemistry I/CHEM 221	1	Organic Chemistry II Lab/CHEM 225
1	Organic Chemistry I Lab/CHEM 222	3	Philosophy II Series/LPHI*
3	Calculus 1/MATH 140 <b>or</b>	3	Intro to Psychology/PSYC 111
	Calculus 2/MATH 141 <b>or</b>	2	General Electives
	Applied Statistics/MATH 213	<hr/>	
3	Theology II Series/LTHE*	16	
3	History Without Borders/LHST 111		
17		16	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Genetics/BIOL 345	8	Biology Electives**
4	Biology Electives**	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Public Speaking/SPCH 111
3	Theology III Series/LTHE 227 <b>or</b>	3	Fine Arts Series/LFIN*
	Philosophy III Series/LPHI 237	<hr/>	
1	Leadership Seminar	18	
15		18	
SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
2	Biology Topics/BIOL 490-495 <b>or</b>	4	Biology Electives**
	Directed Research/BIOL 487 <b>or</b>	3	Senior Seminar/LBST 383
	Biology Research I/BIOL 488	7-10	General Electives
8	Biology Electives**	<hr/>	
3	Literature Series/LENG*	14-17	
3	General Electives		
16			

*\*Please refer to the Undergraduate Catalog for course options.*

*\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): **Vertebrate Embryology (BIOL 307/308)**; **Histology (BIOL 320/321)**; **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; **Cellular Biochemistry (BIOL 373/374)** and Cell Biology (BIOL 375/376); please consult with your advisor.*

*†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated NYCC matriculation; please consult with the Director of the Pre-Health Advising Program to prepare an academic schedule.*

**Total Credits to be Completed at Gannon: 129-132**

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## CWRU 3+4 EARLY ACCEPTANCE DENTAL MEDICINE

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Gannon University, in affiliation with Case Western Reserve University (CWRU) School of Dental Medicine located in Cleveland, Ohio, offers a program for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Dental Medicine (D.M.D) degree from CWRU. The 3+4 early acceptance program grants highly motivated and academically strong students the opportunity to gain conditionally guaranteed acceptance to the CWRU School of Dental Medicine as early as the senior year of high school. Participation in the program alleviates much of the cost of applying to dental schools, while providing a strong background in scientific and biomedical courses at Gannon University. Successful completion of the first year of dental school at CWRU will allow students in the 3+4 early acceptance program to earn a Bachelor of Science degree in health science from Gannon University.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.5 or higher on a 4.0 scale
- Class rank in the top 25% of your high school class
- Minimum SAT score of 1360 (new SAT)/1300 (old SAT) or ACT composite score of 29
- Personal statement or essay
- Evidence of academic and personal potential, as well as desire to become a dentist
- Documentation for a mastery of English, if the applicant's primary language is not English
- Documented exposure to clinical environments, preferably in the profession of dentistry
- Satisfactory admissions interview with the CWRU School of Dental Medicine

### Program Admissions Process

Students applying to this program are encouraged to apply by November 1st for priority consideration. Guaranteed acceptance will not be granted until all requirements listed below have been satisfied. Decisions will be rendered by April 1st and formal notification of acceptance into the program will be sent to the applicant by Gannon University by April 15th, two weeks prior to the deposit deadline for Gannon University.

Students who wish to be considered for the CWRU affiliation program with Gannon University must:

- apply to Gannon University's CWRU 3+4 Early Acceptance Dental Medicine program and be successfully admitted to the University.

- complete a satisfactory admissions interview with CWRU School of Dental Medicine after receiving an offer of acceptance from Gannon University as a high school senior.

**CWRU School of Dental Medicine Entry Requirements**

After three years of undergraduate study, the participant is conditionally guaranteed an offer of admission to the CWRU School of Dental Medicine if the following requirements are satisfied.

- Successful completion of approximately 90 credits of undergraduate study
- College GPA of 3.50 (overall and science-only), calculated using AADSAS convention
- Completion of pre-dental prerequisite coursework with grades of B or better
- Good standing with Gannon University
- Minimum of 20 hours of shadowing or volunteering in clinical and dental environments
- DAT score of 19 or higher for Academic Average and 18 or higher for Perceptual Ability, to be taken as early as April of the second undergraduate year and preferably no later than January of the students third year
- Application directly to the CWRU School of Dental Medicine by January 1st of the junior year
- Letter of evaluation from the Pre-Health Applicant Review Committee at Gannon University
- Final on-site interview at the CWRU School of Dental Medicine upon their receipt of the dental school application
- Response to the offer of acceptance within 15 days to secure a seat in the incoming class
- Any additional requirements as outlined through the affiliation agreement between Gannon University and the CWRU School of Dental Medicine; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

Though not required, students are encouraged to participate in small-group, capstone, or case-oriented undergraduate coursework or experiential scholarly activities.

*Students admitted to this program will forfeit their conditionally guaranteed seat if they apply to any other dental medicine schools.*

**Curriculum**

**CWRU 3+4 EARLY ACCEPTANCE DENTAL MEDICINE**

FRESHMAN			
	<i>First Semester</i>		<i>Second Semester</i>
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry/MATH 112 <b>or</b>	3	Critical Analysis & Comp/LENG 112
	Calculus 1/MATH 140	3	Sacred Scriptures/LTHE 121
3	College Composition/LENG 111	3	History Without Borders/LHST 111
2	First-Year Seminar		
<hr/> 16		<hr/> 17	

## SOPHOMORE

*First Semester*

3	Animal Physiology/BIOL 368
1	Animal Physiology Lab/BIOL 369
3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	College Physics 1/PHYS 105
1	College Physics 1 Lab/PHYS 106
3	Introduction to Philosophy/LPHI 131
<hr/>	
15	

*Second Semester*

3-4	Biology Electives**
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	College Physics 2/PHYS 108
1	College Physics 2 Lab/PHYS 109
3	Philosophy II Series/LPHI*
3	Theology II Series/LTHE*
<hr/>	
17-18	

## JUNIOR

*First Semester*

3	Structural Biochemistry/CHEM 366
3	Applied Statistics/MATH 213
3	Intro to Psychology/PSYC 111 <b>or</b>
	Basic Sociology/SOCI 110
3	Public Speaking/SPCH 111
3	Theology III Series/LTHE 227 <b>or</b>
	Philosophy III Series/LPHI 237
1	Leadership Seminar
<hr/>	
16	

*Second Semester*

3	Genetics/BIOL 345
3-4	Biology Electives**
3	Fine Arts Series/LFIN*
3	Literature Series/LENG*
3	Senior Seminar/LBST 383
<hr/>	
15-16	

\*Please refer to the Undergraduate Catalog for course options.

\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): **Ecosystem Biology and Evolution (BIOL 126/127)**; **Comparative Vertebrate Anatomy (BIOL 292/293)**; **Vertebrate Embryology (BIOL 307/308)**; **Histology (BIOL 320/321)**; **Microbiology (BIOL 331/332)**; **Immunology (BIOL 338/339)**; **Virology (BIOL 334)**; **Parasitology (BIOL 354/355)**; **Endocrinology (BIOL 363)**; **Human Gross Anatomy (BIOL 365/366)**; **Cellular Biochemistry (BIOL 373/374)** and **Cell Biology (BIOL 375/376)**; please consult with your advisor.

**Total Credits to be Completed at Gannon: 96-98**

## LECOM 4+4 EARLY ACCEPTANCE DENTAL MEDICINE

Gannon University, in affiliation with the Lake Erie College of Osteopathic Medicine (LECOM) School of Dental Medicine, located in Bradenton, Florida, offers an early acceptance program for qualified students to earn a four-year bachelor's degree in biology from Gannon University and a Doctor of Dental Medicine (D.M.D.) degree from LECOM. The 4+4 early acceptance program grants academically strong students an opportunity to gain conditionally guaranteed acceptance to the LECOM School of Dental Medicine as early as the senior year of high school. Participation in the program alleviates much of the cost of applying to dental schools, while providing a strong background in scientific and biomedical courses at Gannon University.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.5 or higher on a 4.0 scale
- Class rank in the top 25% of your high school class
- Minimum SAT score of 1240 (new SAT)/1170 (old SAT) or ACT composite score of 26

- Evidence of academic and personal potential, as well as desire to become a dentist
- Satisfactory admissions interview with LECOM

### **Program Admissions Process**

Students applying to this program are encouraged to apply by November 1st for priority consideration. From the qualified applicant pool, a maximum of five (5) students are accepted to this program in the senior year of high school. Guaranteed acceptance to the program will not be granted until all requirements listed below have been satisfied.

Students who wish to be considered for the LECOM dental affiliation program with Gannon University must:

- apply to Gannon University's LECOM 4+4 Early Acceptance Dental Medicine program and be successfully admitted to the University.
- complete the Early Acceptance Program Inquiry form available on the LECOM portal ([www.portal.lecom.edu](http://www.portal.lecom.edu)), selecting the Dental 4+4 Program from the drop down menu and listing Gannon University as one of the top three schools you are interested in attending.
- complete a satisfactory admissions interview with LECOM after receiving an offer of acceptance from Gannon University as a high school senior.
- submit an Early Acceptance Program online application.
- send LECOM an email from your University email account, indicating that you have chosen to attend Gannon.
- receive a provisional letter of acceptance from LECOM.

Gannon University students interested in the 4+4 program must submit an Early Acceptance Program online application no later than February 1st of their sophomore year of study at Gannon University.

### **LECOM School of Dental Medicine Entry Requirements**

After four years of undergraduate study, the participant is conditionally guaranteed admission to LECOM if the following requirements are satisfied.

- Grades are submitted through the LECOM portal within 30 days following each semester
- LECOM's progressive GPA requirements are met
- Cumulative overall GPA of 3.4 or higher by the time of application
- Cumulative science GPA of 3.2 or higher by the time of application
- Minimum grade of C in all courses required by LECOM
- Good standing with Gannon University
- DAT score of 17 or higher
- Approximately 100 hours of shadowing in a clinical dental setting
- U.S. citizen or permanent resident
- Successful criminal background check
- Meet and agree to LECOM's Health and Technical Standards
- Application to the LECOM School of Dental Medicine through AADSAS by November 15th of the year prior to LECOM matriculation
- LECOM secondary application submitted by January 1st of the year of LECOM matriculation
- Letters of recommendation and all supporting documentation to be submitted for review by LECOM
- Any additional requirements as outlined through the affiliation agreement between Gannon University and the LECOM School of Dental Medicine; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University



Each academic year, LECOM will admit up to five (5) students total from Gannon University's dental affiliation program. Additional students may be considered on an individual basis and at the discretion of LECOM.

*Students admitted to this program will forfeit their conditionally guaranteed seat if they apply to any other dental medicine schools.*

## Curriculum

### LECOM 4+4 EARLY ACCEPTANCE DENTAL MEDICINE

#### Biology Curriculum†

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry/MATH 112	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	History Without Borders/LHST 111
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Ecosystem Biology and Evolution/ BIOL 126	3-4	Biology Electives**
1	Ecosystem Biology and Evol. Lab/ BIOL 127	3	Organic Chemistry II/CHEM 224
3	Organic Chemistry I/CHEM 221	1	Organic Chemistry II Lab/CHEM 225
1	Organic Chemistry I Lab/CHEM 222	3	Philosophy II Series/LPHI*
3	Applied Statistics/MATH 213	3	Theology II Series/LTHE*
3	Introduction to Philosophy/LPHI 131	3	Literature Series/LENG*
3	Public Speaking/SPCH 111		
17		16-17	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Animal Physiology/BIOL 368	3	Genetics/BIOL 345
1	Animal Physiology Lab/BIOL 369	3-4	Biology Electives**
3	Structural Biochemistry/CHEM 366	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Fine Arts Series/LFIN*
3	Intro to Psychology/PSYC 111 <b>or</b> Basic Sociology/SOCI 110	3	General Electives
14		16-17	
SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
2	Biology Topics/BIOL 490-495 <b>or</b> Directed Research/BIOL 487 <b>or</b> Biology Research I/BIOL 488	6-8	Biology Electives**
6-8	Biology Electives**	3	Senior Seminar/LBST 383
		6	General Electives

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3	Theology III Series/LTHE 227 <b>or</b>
	Philosophy III Series/LPHI 237
1	Leadership Seminar
3	General Electives
15-17	
	15-17

*\*Please refer to the Undergraduate Catalog for course options.*

*\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Vertebrate Embryology (BIOL 307/308); **Histology (BIOL 320/321); Microbiology (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); Human Gross Anatomy (BIOL 365/366); Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376);** please consult with your advisor.*

*+The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated LECOM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.*

**Total Credits to be Completed at Gannon: 128-132**

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## LECOM 3+4 EARLY ACCEPTANCE MEDICINE

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Gannon University, in affiliation with Lake Erie College of Osteopathic Medicine (LECOM), offers an early acceptance program for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Osteopathic Medicine (D.O.) degree from LECOM. The 3+4 early acceptance program grants highly motivated academically strong students an opportunity to gain conditionally guaranteed acceptance to LECOM as early as the senior year of high school. Participation in the program alleviates much of the cost of applying to medical schools, while providing a strong background in scientific and biomedical courses at Gannon University. After completing their undergraduate education at Gannon University, students matriculate to either the main campus in Erie, Pennsylvania which includes an additional location at Seton Hill University in Greensburg, Pennsylvania or a branch campus in Bradenton, Florida. Successful completion of the first year of medical school at LECOM will allow students in the 3+4 early acceptance program to earn a Bachelor of Science degree in health science from Gannon University.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.8 or higher on a 4.0 scale
- Class rank in the top 25% of your high school class
- Minimum SAT score of 1340 (new SAT)/1280 (old SAT) or ACT composite score of 28
- LECOM Academic Index Score of 123 or higher
- Evidence of academic and personal potential, and a desire to become an osteopathic physician
- Satisfactory admissions interview with LECOM

### Program Admissions Process

Students applying to this program are encouraged to apply by November 1st for priority consideration. From the qualified applicant pool, a maximum of ten (10) students are accepted to this program in the senior year of high school. Guaranteed acceptance to the program will not be granted until all requirements listed below have been satisfied.

Students who wish to be considered for the LECOM medical affiliation program with Gannon University must:

- apply to Gannon University's LECOM 3+4 Early Acceptance Medicine program and be successfully admitted to the University.
- complete the Early Acceptance Program Inquiry form available on the LECOM portal ([www.portal.lecom.edu](http://www.portal.lecom.edu)), selecting the Medical 3+4 Program from the drop down menu and listing Gannon University as one of the top three schools you are interested in attending.
- submit an Early Acceptance Program online application.
- complete a satisfactory admissions interview with LECOM after receiving an offer of acceptance from Gannon University as a high school senior.
- send LECOM an email from your University email account, indicating that you have chosen to attend Gannon.
- receive a provisional letter of acceptance from LECOM.

Gannon University students who may be eligible for the accelerated medical program are identified by the Director of the Pre-Health Advising Program in collaboration with LECOM. Gannon University students interested in the 3+4 program must submit an Early Acceptance Program online application no later than June 1st following their freshman year at Gannon University.

### **LECOM Entry Requirements**

After three years of undergraduate study, the participant is conditionally guaranteed admission to LECOM if the following requirements are satisfied.

- Grades are submitted through the LECOM portal within 30 days following each semester
- LECOM's progressive GPA requirements are met
- Cumulative overall GPA of 3.5 or higher by time of application
- Cumulative science GPA of 3.2 or higher by time of application
- Minimum of a C in all courses required by LECOM
- Good standing with Gannon University
- LECOM Academic Index Score of 123 or higher\*
- Minimum MCAT score in the 50th percentile\*\*
- Shadowing an osteopathic physician is highly recommended but not required
- Attendance of at least one, but preferably all, annual on-campus day events held for affiliated students at LECOM
- U.S. citizen or permanent resident
- Successful criminal background check
- Meet and agree to LECOM's Health and Technical Standards
- Application to LECOM and preference of learning pathway submitted through the LECOM portal by November 15th of the year prior to matriculation
- Letters of recommendation and all supporting documentation to be submitted for review by LECOM
- Any additional requirements as outlined through the affiliation agreement between Gannon University and LECOM; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

\*Students not meeting AIS requirement one year prior to matriculating to LECOM must take the MCAT or switch to the 4+4 program prior to starting their third year of study at Gannon.

\*\*Students will be exempt from the MCAT requirement providing they have submitted official documentation of SAT or ACT scores to LECOM, and have taken at least one biochemistry course and one genetics course, earning a grade of C or higher in each.

Each academic year, LECOM will admit up to ten (10) students total from Gannon University's medical affiliation programs. Additional students may be considered on an individual basis and at the discretion of LECOM.

*Students admitted to this program will forfeit their conditionally guaranteed seat if they apply to any other medical schools.*

## Curriculum

### LECOM 3+4 EARLY ACCEPTANCE MEDICINE

FRESHMAN	
<i>First Semester</i>	<i>Second Semester</i>
3 Molecular and Cell. Biology/BIOL 122	3 Animal Form and Function/ BIOL 124
1 Molecular and Cell. Biology Lab/ BIOL 123	1 Animal Form and Function Lab/ BIOL 125
3 General Chemistry I/CHEM 111	3 General Chemistry II/CHEM 114
1 General Chemistry I Lab/CHEM 112	1 General Chemistry II Lab/CHEM 115
3 Trigonometry/MATH 112 <b>or</b>	3 Critical Analysis & Comp/LENG 112
Calculus 1/MATH 140	3 Sacred Scriptures/LTHE 121
3 College Composition/LENG 111	3 History Without Borders/LHST 111
2 First-Year Seminar	
<hr/> 16	<hr/> 17
SOPHOMORE	
<i>First Semester***</i>	<i>Second Semester</i>
3 Animal Physiology/BIOL 368	3-4 Biology Electives**
1 Animal Physiology Lab/BIOL 369	3 Organic Chemistry II/CHEM 224
3 Organic Chemistry I/CHEM 221	1 Organic Chemistry II Lab/CHEM 225
1 Organic Chemistry I Lab/CHEM 222	3 College Physics 2/PHYS 108
3 College Physics 1/PHYS 105	1 College Physics 2 Lab/PHYS 109
1 College Physics 1 Lab/PHYS 106	3 Philosophy II Series/LPHI*
3 Introduction to Philosophy/LPHI 131	3 Theology II Series/LTHE*
<hr/> 15	<hr/> 17-18
JUNIOR	
<i>First Semester</i>	<i>Second Semester</i>
3 Structural Biochemistry/CHEM 366	3 Genetics/BIOL 345
3 Applied Statistics/MATH 213	3-4 Biology Electives**
3 Introduction to Psychology/PSYC 111	3 Fine Arts Series/LFIN*
3 Theology III Series/LTHE 227 <b>or</b>	3 Literature Series/LENG*
Philosophy III Series/LPHI 237	3 Senior Seminar/LBST 383
3 Public Speaking/SPCH 111	
1 Leadership Seminar	
<hr/> 16	<hr/> 15-16

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): **Ecosystem Biology and Evolution (BIOL 126/127)**; **Vertebrate Embryology (BIOL 307/308)**; **Histology (BIOL 320/321)**; **Microbiology (BIOL 331/332)**; **Immunology (BIOL 338/339)**; **Virology (BIOL 334)**; **Parasitology (BIOL 354/355)**; **Endocrinology (BIOL 363)**; **Human Gross Anatomy (BIOL 365/366)**; **Cellular Biochemistry (BIOL 373/374)** and **Cell Biology (BIOL 375/376)**; please consult with your advisor.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

**Total Credits to be Completed at Gannon: 96-98**

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## LECOM 4+4 EARLY ACCEPTANCE MEDICINE

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Gannon University, in affiliation with Lake Erie College of Osteopathic Medicine (LECOM) offers an early acceptance program for qualified students to earn a four-year bachelor's degree in biology or chemistry from Gannon University and a Doctor of Osteopathic Medicine (D.O.) degree from LECOM. The 4+4 early acceptance program grants academically strong students an opportunity to gain conditionally guaranteed acceptance to LECOM as early as the senior year of high school. Participation in the program alleviates much of the cost of applying to medical schools, while providing a strong background in scientific and biomedical courses at Gannon University. After completing their undergraduate education at Gannon University, students matriculate to either the main campus in Erie, Pennsylvania which includes an additional location at Seton Hill University in Greensburg, Pennsylvania or a branch campus in Bradenton, Florida.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.5 or higher on a 4.0 scale
- Class rank in the top 25% of your high school class
- Minimum SAT score of 1240 (new SAT)/1170 (old SAT) or ACT composite score of 26
- LECOM Academic Index Score of 115 or higher
- Evidence of academic and personal potential, and a desire to become an osteopathic physician
- Satisfactory admissions interview with LECOM

### Program Admissions Process

Students applying to this program are encouraged to apply by November 1st for priority consideration. From the qualified applicant pool, a maximum of ten (10) students are accepted to this program in the senior year of high school. Guaranteed acceptance to the program will not be granted until all requirements listed below have been satisfied.

Students who wish to be considered for the LECOM medical affiliation program with Gannon University must:

- apply to Gannon University's LECOM 4+4 Early Acceptance Medicine program and be successfully admitted to the University.
- complete the Early Acceptance Program Inquiry form available on the LECOM portal ([www.portal.lecom.edu](http://www.portal.lecom.edu)), selecting the Medical 4+4 Program from the drop down menu and listing Gannon University as one of the top three schools you are interested in attending.
- submit an Early Acceptance Program online application.
- complete a satisfactory admissions interview with LECOM after receiving an offer of acceptance from Gannon University as a high school senior.
- send LECOM an email from your University email account, indicating that you have chosen to attend Gannon.
- receive a provisional letter of acceptance from LECOM.

Gannon University students interested in the 4+4 program must submit an Early Acceptance Program online application no later than June 1st following their sophomore year of study at Gannon University.

### LECOM Entry Requirements

After four years of undergraduate study, the participant is conditionally guaranteed admission to LECOM if the following requirements are satisfied.

- Grades are submitted through the LECOM portal within 30 days following each semester
- LECOM’s progressive GPA requirements are met
- Cumulative overall GPA of 3.4 or higher by time of application
- Cumulative science GPA of 3.2 or higher by time of application
- Minimum of a C in all courses required by LECOM
- Good standing with Gannon University
- LECOM Academic Index Score of 115 or higher\*
- Minimum MCAT score in the 50th percentile\*\*
- Shadowing an osteopathic physician is highly recommended but not required
- Attendance of at least one, but preferably all, annual on-campus day events held for affiliated students at LECOM
- U.S. citizen or permanent resident
- Successful criminal background check
- Meet and agree to LECOM’s Health and Technical Standards
- Application to LECOM and preference of learning pathway submitted through the LECOM portal by November 15th of the year prior to matriculation
- Letters of recommendation and all supporting documentation to be submitted for review by LECOM
- Any additional requirements as outlined through the affiliation agreement between Gannon University and LECOM; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

\*Students not meeting the AIS requirement one year prior to matriculating to LECOM must take the MCAT.

\*\*Students will be exempt from the MCAT requirement providing they have submitted official documentation of SAT or ACT scores to LECOM, and have taken at least one biochemistry course and one genetics course, earning a grade of C or higher in each.

Each academic year, LECOM will admit up to ten (10) students total from Gannon University’s medical affiliation programs. Additional students may be considered on an individual basis and at the discretion of LECOM.

*Students admitted to this program will forfeit their conditionally guaranteed seat if they apply to any other medical schools.*

**Curriculum**

**LECOM 4+4 EARLY ACCEPTANCE MEDICINE**

**Biology Curriculum†**

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry/MATH 112 <b>or</b> Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	History Without Borders/LHST 111
16		17	

## SOPHOMORE

*First Semester*

3	Ecosystem Biology and Evolution/ BIOL 126
1	Ecosystem Biology and Evol. Lab/ BIOL 127
3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Applied Statistics/MATH 213
3	Introduction to Philosophy/LPHI 131
3	Public Speaking/SPCH 111
17	

*Second Semester*

4	Biology Electives**
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Philosophy II Series/LPHI*
3	Theology II Series/LTHE*
3	Literature Series/LENG*
17	

## JUNIOR

*First Semester*

3	Animal Physiology/BIOL 368
1	Animal Physiology Lab/BIOL 369
3	Structural Biochemistry/CHEM 366
3	College Physics 1/PHYS 105
1	College Physics 1 Lab/PHYS 106
3	Introduction to Psychology/PSYC 111
14	

*Second Semester\*\**

3	Genetics/BIOL 345
4	Biology Electives**
3	College Physics 2/PHYS 108
1	College Physics 2 Lab/PHYS 109
3	Fine Arts Series/LFIN*
3	General Electives
17	

## SENIOR

*First Semester*

2	Biology Topics/BIOL 490-495 <b>or</b>
	Directed Research/BIOL 487 <b>or</b>
	Biology Research I/BIOL 488
6-8	Biology Electives**
3	Theology III Series/LTHE 227 <b>or</b>
	Philosophy III Series/LPHI 237
1	Leadership Seminar
3	General Electives
15-17	

*Second Semester*

6-8	Biology Electives**
3	Senior Seminar/LBST 383
6	General Electives
15-17	

\*Please refer to the Undergraduate Catalog for course options.

\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): **Vertebrate Embryology (BIOL 307/308)**; **Histology (BIOL 320/321)**; **Microbiology (BIOL 331/332)**; **Medical Microbiology (BIOL 378/379)**; **Immunology (BIOL 338/339)**; **Virology (BIOL 334)**; **Parasitology (BIOL 354/355)**; **Endocrinology (BIOL 363)**; **Human Gross Anatomy (BIOL 365/366)**; **Cellular Biochemistry (BIOL 373/374)**; **Cell Biology (BIOL 375/376)**; and **Introduction to Pathology (BIOL 490)**; students must take at least two of these courses along with the accompanying lab, if offered; please consult with your advisor.

†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated LECOM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

**Total Credits to be Completed at Gannon: 128-132**

## LECOM 4+4 EARLY ACCEPTANCE MEDICINE

Chemistry Curriculum<sup>†</sup>

## FRESHMAN

*First Semester*

3	Molecular and Cellular Biology/ BIOL 122
1	Molecular and Cell. Biology Lab/ BIOL 123
3	General Chemistry I/CHEM 111
1	General Chemistry I Lab/CHEM 112
3	Calculus 1/MATH 140
3	College Composition/LENG 111
2	First-Year Seminar
16	

*Second Semester*

3	Animal Form and Function/ BIOL 124
1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry II/CHEM 114
1	General Chemistry II Lab/CHEM 115
3	Critical Analysis & Comp/LENG 112
3	Sacred Scriptures/LTHE 121
3	Calculus 2/MATH 141
17	

## SOPHOMORE

*First Semester*

3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Applied Statistics/MATH 213
3	Fundamentals of Physics 1/PHYS 210
1	Fund of Physics 1 Lab/PHYS 211
3	Introduction to Philosophy/LPHI 131
3	History Without Borders/LHST 111
17	

*Second Semester\*\*\**

3	Animal Physiology/BIOL 368
1	Animal Physiology Lab/BIOL 369
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Fundamentals of Physics 2/PHYS 212
1	Fund of Physics 2 Lab/PHYS 213
3	Introduction to Psychology/PSYC 111
15	

## JUNIOR

*First Semester*

3	Organic Chemistry III/CHEM 323
1	Organic Chemistry III Lab/CHEM 324
3	Structural Biochemistry/CHEM 366
3	Physical Chemistry I/CHEM 331
1	Physical Chemistry I Lab/CHEM 332
3	Philosophy II Series/LPHI*
3	Public Speaking/SPCH 111
17	

*Second Semester*

3	Genetics/BIOL 345
3	Physical Chemistry II/CHEM 334
1	Physical Chemistry II Lab/CHEM 335
3	Modern Analytical Chemistry/ CHEM 336
2	Modern Analytical Chemistry Lab/ CHEM 337
1	Chemical Literature/CHEM 356
3	Theology II Series/LTHE*
16	

## SENIOR

*First Semester*

3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383
7	Chemistry Electives*
3	Philosophy III Series/LPHI 237 <b>or</b> Theology III Series/LTHE 227
1	Leadership Seminar
15-16	

*Second Semester*

3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383
4	Chemistry Electives*
3	Literature Series/LENG*
3	Senior Seminar/LBST 383
3	Fine Arts/LFIN*
17-18	

\*Please refer to Undergraduate Catalog for course options.

\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): *Ecosystem Biology and Evolution* (BIOL 126/127); *Vertebrate Embryology* (BIOL 307/ 308); *Histology* (BIOL 320/321); *Microbiology* (BIOL 331/332); *Medical Microbiology* (BIOL 378/379);



**Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); Human Gross Anatomy (BIOL 365/366); Cellular Biochemistry (BIOL 373/374); Cell Biology (BIOL 375/376); and Introduction to Pathology (BIOL 490);** students must take at least two of these courses along with the accompanying lab, if offered; please consult with your advisor.

*\*The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to planned LECOM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.*

*\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.*

**Total Credits to be Completed at Gannon: 130-132**

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## PCOM 3+4 ACCELERATED MEDICINE

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Gannon University, in affiliation with Philadelphia College of Osteopathic Medicine (PCOM) located in Philadelphia, Pennsylvania, offers an accelerated program for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Osteopathic Medicine (D.O.) degree from PCOM. The 3+4 accelerated program grants highly motivated and academically strong students an opportunity to matriculate to PCOM after completing only three years of undergraduate study at Gannon University. Successful completion of the first year of medical school at PCOM will allow students in the 3+4 accelerated program to earn a Bachelor of Science degree in health science from Gannon University. Qualified students enrolled in the program will be conditionally guaranteed an interview with PCOM, providing these students with an advantage over students from other institutions at the time of application. Participation in the program does not restrict students' ability to apply to other medical schools.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.4 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become an osteopathic physician

### PCOM Entry Requirements

After three years of undergraduate study, the participant is conditionally guaranteed an interview and possible admission to PCOM if the following requirements are satisfied.

- Completion of all required courses as listed in PCOM's Catalog
- Cumulative overall GPA of 3.75 through the end of sophomore year
- MCAT score in the 50th percentile for each section taken no later than fall of Junior year
- Application to PCOM through AACOMAS by October 31st of the Junior year
- PCOM supplemental application submitted by November 30th of the Junior year
- Letter of recommendation from an osteopathic physician (D.O.)
- Satisfactory admissions interview with PCOM
- Any additional requirements as outlined through the affiliation agreement between Gannon University and PCOM; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

Each academic year, PCOM will admit up to three (3) students total from Gannon University's medical affiliation programs. Additional students may be considered on an individual basis and at the discretion of PCOM.

## Curriculum

### PCOM 3+4 ACCELERATED MEDICINE

FRESHMAN	
<i>First Semester</i>	<i>Second Semester</i>
3 Molecular and Cellular Biology / BIOL 122	3 Animal Form and Function / BIOL 124
1 Molecular and Cell. Biology Lab / BIOL 123	1 Animal Form and Function Lab / BIOL 125
3 General Chemistry I/CHEM 111	3 General Chemistry II/CHEM 114
1 General Chemistry I Lab/CHEM 112	1 General Chemistry II Lab/CHEM 115
3 Trigonometry/MATH 112 <b>or</b>	3 Critical Analysis & Comp/LENG 112
Calculus 1/MATH 140	3 Sacred Scriptures/LTHE 121
3 College Composition/LENG 111	3 History Without Borders/LHST 111
2 First-Year Seminar	
<hr/> 16	<hr/> 17
SOPHOMORE	
<i>First Semester</i>	<i>Second Semester</i>
3 Animal Physiology/BIOL 368	3-4 Biology Electives**
1 Animal Physiology Lab/BIOL 369	3 Organic Chemistry II/CHEM 224
3 Organic Chemistry I/CHEM 221	1 Organic Chemistry II Lab/CHEM 225
1 Organic Chemistry I Lab/CHEM 222	3 College Physics 2/PHYS 108
3 College Physics 1/PHYS 105	1 College Physics 2 Lab/PHYS 109
1 College Physics 1 Lab/PHYS 106	3 Philosophy II Series/LPHI*
3 Introduction to Philosophy/LPHI 131	3 Theology II Series/LTHE*
3 Public Speaking/SPCH 111	
<hr/> 18	<hr/> 17-18
JUNIOR	
<i>First Semester***</i>	<i>Second Semester</i>
3 Structural Biochemistry/CHEM 366	3 Genetics/BIOL 345
3 Applied Statistics/MATH 213	3-4 Biology Electives**
3 Theology III Series/LTHE 227 <b>or</b>	3 Fine Arts Series/LFIN*
Philosophy III Series/LPHI 237	3 Literature Series/LENG*
3 Introduction to Psychology/PSYC 111	3 Senior Seminar/LBST 383
1 Leadership Seminar	
<hr/> 13	<hr/> 15-16

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); **Histology** (BIOL 320/321); **Microbiology** (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy** (BIOL 365/366); Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

**Total Credits to be Completed at Gannon: 96-98**

## PCOM 4+4 MEDICINE

Gannon University, in affiliation with Philadelphia College of Osteopathic Medicine (PCOM) located in Philadelphia, Pennsylvania, offers a program for qualified students to earn a four-year bachelor's degree from Gannon University and a Doctor of Osteopathic Medicine (D.O.) degree from PCOM. The traditional 4+4 program grants academically strong students an opportunity to complete a bachelor's degree in biology or chemistry prior to attending PCOM. Qualified students enrolled in the program will be conditionally guaranteed an interview with PCOM, providing these students with an advantage over students from other institutions at the time of application. Participation in the program does not restrict students' ability to apply to other medical schools.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.4 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become an osteopathic physician

### PCOM Entry Requirements

After four years of undergraduate study, the participant is conditionally guaranteed an interview and possible admission to PCOM if the following requirements are satisfied.

- Completion of all required courses as listed in PCOM's Catalog
- Cumulative overall GPA of 3.25 or higher through the end of the junior year
- MCAT score in the 50th percentile for each section, taken no later than Fall of the senior year
- Application to PCOM through AACOMAS by October 31st of the senior year PCOM supplemental application submitted by November 30th of the senior year
- Letter of recommendation from an osteopathic physician (D.O.)
- Satisfactory admissions interview with PCOM
- Any additional requirements as outlined through the affiliation agreement between Gannon University and PCOM; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

Each academic year, PCOM will admit up to three (3) students total from Gannon University's medical affiliation programs. Additional students may be considered on an individual basis and at the discretion of PCOM.

### Curriculum

#### PCOM 4+4 MEDICINE

#### Biology Curriculum†

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114

1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry/MATH 112 <b>or</b>	3	Critical Analysis & Comp/LENG 112
	Calculus 1/MATH 140	3	Sacred Scriptures/LTHE 121
3	College Composition/LENG 111	3	History Without Borders/LHST 111
2	First-Year Seminar		
16		17	
<b>SOPHOMORE</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Ecosystem Biology and Evolution/ BIOL 126	4	Biology Electives**
1	Ecosystem Biology and Evol. Lab/ BIOL 127	3	Organic Chemistry II/CHEM 224
3	Organic Chemistry I/CHEM 221	1	Organic Chemistry II Lab/CHEM 225
1	Organic Chemistry I Lab/CHEM 222	3	Philosophy II Series/LPHI*
3	Applied Statistics/MATH 213	3	Theology II Series/LTHE*
3	Introduction to Philosophy/LPHI 131	3	Literature Series/LENG*
3	Public Speaking/SPCH 111		
17		17	
<b>JUNIOR</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Animal Physiology/BIOL 368	3	Genetics/BIOL 345
1	Animal Physiology Lab/BIOL 369	4	Biology Electives**
3	Structural Biochemistry/CHEM 366	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Fine Arts Series/LFIN*
3	Introduction to Psychology/PSYC 111	3	General Electives
14		17	
<b>SENIOR</b>			
<i>First Semester</i>		<i>Second Semester</i>	
2	Biology Topics/BIOL 490-495 <b>or</b>	6-8	Biology Electives**
	Directed Research/BIOL 487 <b>or</b>	3	Senior Seminar/LBST 383
	Biology Research I/BIOL 488	6	General Electives
6-8	Biology Electives**		
3	Philosophy III Series/LPHI 237 <b>or</b>		
	Theology III Series/LTHE 227		
1	Leadership Seminar		
3	General Electives		
15-17		15-17	

\*Please refer to the Undergraduate Catalog for course options.

\*\* The following upper-level science coursework is recommended (those highly recommended are shown in bold): Vertebrate Embryology (BIOL 307/308); **Histology (BIOL 320/321)**; **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated PCOM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

**Total Credits at Gammon: 128-132**

**PCOM 4+4 MEDICINE****Chemistry Curriculum†****FRESHMAN***First Semester*

3	Molecular and Cellular Biology/ BIOL 122
1	Molecular and Cell. Biology Lab/ BIOL 123
3	General Chemistry I/CHEM 111
1	General Chemistry I Lab/CHEM 112
3	Calculus 1/MATH 140
3	College Composition/LENG 111
2	First -Year Seminar
<u>16</u>	

*Second Semester*

3	Animal Form and Function/ BIOL 124
1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry II/CHEM 114
1	General Chemistry II Lab/CHEM 115
3	Critical Analysis & Comp/LENG 112
3	Sacred Scriptures/LTHE 121
3	Calculus 2/MATH 141
<u>17</u>	

**SOPHOMORE***First Semester*

3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Applied Statistics/MATH 213
3	Fundamentals of Physics 1/PHYS 210
1	Fund of Physics 1 Lab/PHYS 211
3	Introduction to Philosophy/LPHI 131
3	History Without Borders/LHST 111
<u>17</u>	

*Second Semester\*\*\**

3	Animal Physiology/BIOL 368
1	Animal Physiology Lab/BIOL 369
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Fundamentals of Physics 2/PHYS 212
1	Fund of Physics 2 Lab/PHYS 213
3	Introduction to Psychology/PSYC 111
<u>15</u>	

**JUNIOR***First Semester*

3	Organic Chemistry III/CHEM 323
1	Organic Chemistry III Lab/CHEM 324
3	Structural Biochemistry/CHEM 366
3	Physical Chemistry I/CHEM 331
1	Physical Chemistry I Lab/CHEM 332
3	Philosophy II Series/LPHI*
3	Public Speaking/SPCH 111
<u>17</u>	

*Second Semester*

3	Genetics/BIOL 345
3	Physical Chemistry II/CHEM 334
1	Physical Chemistry II Lab/CHEM 335
3	Modern Analytical Chemistry/ CHEM 336
2	Modern Analytical Chemistry Lab/ CHEM 337
1	Chemical Literature/CHEM 356
3	Theology II Series/LTHE*
<u>16</u>	

**SENIOR***First Semester*

3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383
7	Chemistry Electives*
3	Philosophy III Series/LPHI 237 <b>or</b> Theology III Series/LTHE 237
1	Leadership Seminar
<u>15-16</u>	

*Second Semester*

3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383
4	Chemistry Electives*
3	Literature Series/LENG*
3	Senior Seminar/LBST 383
3	Fine Arts Series/LFIN*
<u>17-18</u>	

\*Please refer to the Undergraduate Catalog for course options.

\*\* The following upper-level science coursework is recommended (those highly recommended are shown in bold): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308);

**Histology (BIOL 320/321); Microbiology (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); Human Gross Anatomy (BIOL 365/366); Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.**

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to planned PCOM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.

**Total Credits at Gannon: 130-132**

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## ROSS UNIVERSITY 4+4 MEDICINE

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Gannon University, in affiliation with Ross University School of Medicine (RUSM) located on the island of Dominica in the Caribbean, offers a program for qualified students to earn a four-year bachelor's degree from Gannon University and a Medical Doctor (M.D.) degree from RUSM. The traditional 4+4 program grants academically strong students an opportunity to complete a bachelor's degree in biology or chemistry prior to attending RUSM. Participation in the program alleviates much of the cost of applying to medical schools, while providing a strong background in scientific and biomedical courses at Gannon University. Students enrolled in the program are conditionally guaranteed an acceptance to RUSM.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.4 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become a physician

### RUSM Entry Requirements

After four years of undergraduate study, the participant is conditionally guaranteed admission to RUSM if the following requirements are satisfied.

- Cumulative overall GPA of 3.2 or higher
- Minimum of a 3.00 in all courses designated by RUSM as prerequisites for admission
- No F, D, or C- grade in any course designated by RUSM as prerequisite for admission
- MCAT score of 490 or higher or an overall score in the 25th percentile or higher
- Other minimum admissions requirements required of all RUSM students
- Satisfactory admissions interview with RUSM
- Any additional requirements as outlined through the affiliation agreement between Gannon University and RUSM; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

Each academic year, RUSM will admit up to five (5) students from Gannon University's medical affiliation program. Additional students may be considered on an individual basis and at the discretion of RUSM.

## Curriculum

## ROSS UNIVERSITY 4+4 MEDICINE

## Biology Curriculum†

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry/MATH 112 <b>or</b> Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	History Without Borders/LHST 111
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Ecosystem Biology and Evolution/ BIOL 126	4	Biology Electives**
1	Ecosystem Biology and Evol. Lab/ BIOL 127	3	Organic Chemistry II/CHEM 224
3	Organic Chemistry I/CHEM 221	1	Organic Chemistry II Lab/CHEM 225
1	Organic Chemistry I Lab/CHEM 222	3	Philosophy II Series/LPHI*
3	Applied Statistics/MATH 213	3	Theology II Series/LTHE*
3	Introduction to Philosophy/LPHI 131	3	Literature Series/LENG*
3	Public Speaking/SPCH 111		
17		17	
JUNIOR			
<i>First Semester</i>		<i>Second Semester***</i>	
3	Animal Physiology/BIOL 368	3	Genetics/BIOL 345
1	Animal Physiology Lab/BIOL 369	4	Biology Electives**
3	Structural Biochemistry/CHEM 366	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Fine Arts Series/LFIN*
3	Introduction to Psychology/PSYC 111	3	General Electives
14		17	
SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
2	Biology Topics/BIOL 490-495 <b>or</b> Directed Research/BIOL 487 <b>or</b> Biology Research I/BIOL 488	6-8	Biology Electives**
6-8	Biology Electives**	3	Senior Seminar/LBST 383
3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237	6	General Electives
1	Leadership Seminar		
3	General Electives		
15-17		15-17	

\*Please refer to Undergraduate Catalog for course options.

*\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Vertebrate Embryology (BIOL 307/308); Histology (BIOL 320/321); **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.*

*\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.*

*†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated RUSM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.*

**Total Credits to be Completed at Gannon: 128-132**

## **ROSS UNIVERSITY 4+4 MEDICINE**

### **Chemistry Curriculum†**

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology / BIOL 122	3	Animal Form and Function / BIOL 124
1	Molecular and Cell. Biology Lab / BIOL 123	1	Animal Form and Function Lab / BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	Calculus 2/MATH 141
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry I/CHEM 221	3	Animal Physiology/BIOL 368
1	Organic Chemistry I Lab/CHEM 222	1	Animal Physiology Lab/BIOL 369
3	Applied Statistics/MATH 213	3	Organic Chemistry II/CHEM 224
3	Fundamentals of Physics 1/PHYS 210	1	Organic Chemistry II Lab/CHEM 225
1	Fund of Physics 1 Lab/PHYS 211	3	Fundamentals of Physics 2/PHYS 212
3	Introduction to Philosophy/LPHI 131	1	Fund of Physics 2 Lab/ PHYS 213
3	History Without Borders/LHST 111	3	Intro to Psychology/PSYC 111
17		15	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry III/CHEM 323	3	Genetics/BIOL 345
1	Organic Chemistry III Lab/CHEM 324	3	Physical Chemistry II/CHEM 334
3	Structural Biochemistry/CHEM 366	1	Physical Chemistry II Lab/CHEM 335
3	Physical Chemistry I/CHEM 331	3	Modern Analytical Chemistry / CHEM 336
1	Physical Chemistry I Lab/CHEM 332	2	Modern Analytical Chemistry Lab / CHEM 337
3	Philosophy II Series/LPHI*	1	Chemical Literature/CHEM 356
3	Public Speaking/SPCH 111	3	Theology II Series/LTHE*
17		16	



SENIOR			
	<i>First Semester</i>		<i>Second Semester</i>
3-4	Biology Electives**	3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383	1	Undergrad Research/CHEM 380-383
7	Chemistry Electives*	4	Chemistry Electives*
3	Philosophy III Series/LPHI 237 <b>or</b>	3	Literature Series/LENG*
	Theology III Series/LTHE 227	3	Senior Seminar/LBST 383
1	Leadership Seminar	3	Fine Arts Series/LFIN
15-16		17-18	

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); Histology (BIOL 320/321); **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated RUSM matriculation; please consult with the Pre-Health Director to prepare an academic schedule.

**Total Credits to be Completed at Gannon: 130-132**

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## UMHS 3+4 ACCELERATED MEDICINE, UMHS 4+4 MEDICINE

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Gannon University, in affiliation with the University of Medicine and Health Sciences (UMHS) located on the island of St. Kitts in the Caribbean, offers two programs for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Medicine (M.D.) degree from UMHS. The 3+4 accelerated program grants highly motivated and academically strong students an opportunity to matriculate to UMHS after completing only three years of undergraduate study at Gannon University. Successful completion of the first year of medical school at UMHS will allow the students in the 3+4 accelerated program to earn a Bachelor of Science degree in health science from Gannon University. The majority of students complete the traditional 4+4 program, which allows students to complete a four-year bachelor's degree prior to attending UMHS. Qualified students enrolled in these programs will be conditionally guaranteed an interview with UMHS, providing these students with an advantage over students from other institutions at the time of application. Participation in either program does not restrict students' ability to apply to other medical schools.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.4 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become a physician

UMHS Entry Requirements

After three or four years of undergraduate study, the participant is conditionally guaranteed an interview and possible admission to UMHS if the following requirements are satisfied.

- Successful completion of a minimum of 90 credit hours of undergraduate study
- Completion of all course requirements for UMHS with no grade lower than C- in any pre-medical prerequisite coursework
- Overall college GPA of 3.25 or higher
- Good standing with Gannon University
- MCAT score considered to be competitive by UMHS admissions
- Online application to UMHS, approximately 10–12 months prior to anticipated UMHS matriculation
- Letter of evaluation from the Pre-Health Applicant Review Committee at Gannon University that attests to the candidate’s preparation and suitability for the study and practice of medicine
- Recommendation for admission by a UMHS interviewer who has interviewed the applicant in person or via Skype
- No circumstances that might prevent the student from participating in clerkships in the U.S. or make the student ineligible for study or licensure in the U.S.
- Any additional requirements as outlined through the affiliation agreement between Gannon University and UMHS; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

Students who meet all entry requirements listed above will be accepted on a rolling admissions basis. If the semester for which the student has applied has reached capacity prior to acceptance, they will be eligible for acceptance the next available semester.

Curriculum

UMHS 3+4 ACCELERATED MEDICINE

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry/MATH 112 <b>or</b> Calculus 1/MATH 140†	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	History Without Borders/LHST 111
<hr/> 16		<hr/> 17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Animal Physiology/BIOL 368	3-4	Biology Electives**
1	Animal Physiology Lab/BIOL 369	3	Organic Chemistry II/CHEM 224
3	Organic Chemistry I/CHEM 221	1	Organic Chemistry II Lab/CHEM 225
1	Organic Chemistry I Lab/CHEM 222	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Philosophy II Series/LPHI*
3	Introduction to Philosophy/LPHI 131	3	Theology II Series/LTHE*
<hr/> 15		<hr/> 17-18	

## JUNIOR

*First Semester*

3	Structural Biochemistry/CHEM 366
3	Applied Statistics/MATH 213
3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237
3	Intro to Psychology/PSYC 111 <b>or</b> Basic Sociology/SOCI 110
3	Public Speaking/SPCH 111
1	Leadership Seminar

16

*Second Semester*

3	Genetics/BIOL 345
3-4	Biology Electives**
3	Fine Arts Series/LFIN*
3	Literature Series/LENG*
3	Senior Seminar/LBST 383

15-16

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); **Histology (BIOL 320/321); Microbiology (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); Human Gross Anatomy (BIOL 365/366); Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376);** please consult with your advisor.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

†Calculus I is preferred.

**Total Credits to be Completed at Gannon: 96-98**

## UMHS 4+4 MEDICINE

## Biology Curriculum††

## FRESHMAN

*First Semester*

3	Molecular and Cellular Biology/ BIOL 122
1	Molecular and Cell. Biology Lab/ BIOL 123
3	General Chemistry I/CHEM 111
1	General Chemistry I Lab/CHEM 112
3	Trigonometry/MATH 112 <b>or</b> Calculus 1/MATH 140†
3	College Composition/LENG 111
2	First-Year Seminar

16

*Second Semester*

3	Animal Form and Function/ BIOL 124
1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry II/CHEM 114
1	General Chemistry II Lab/CHEM 115
3	Critical Analysis & Comp/LENG 112
3	Sacred Scriptures/LTHE 121
3	History Without Borders/LHST 111

17

## SOPHOMORE

*First Semester*

3	Ecosystem Biol. and Evol./BIOL 126
1	Ecosystem Biology and Evol. Lab/ BIOL 127
3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Applied Statistics/MATH 213
3	Introduction to Philosophy/LPHI 131
3	Public Speaking/SPCH 111

17

*Second Semester*

4	Biology Electives**
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Philosophy II Series/LPHI*
3	Theology II Series/LTHE*
3	Literature Series/LENG*

17

JUNIOR			
First Semester		Second Semester***	
3	Animal Physiology /BIOL 368	3	Genetics/BIOL 345
1	Animal Physiology Lab/BIOL 369	4	Biology Electives**
3	Structural Biochemistry/CHEM 366	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Fine Arts Series/LFIN*
3	Intro to Psychology/PSYC 111 <b>or</b>	3	General Electives
	Basic Sociology/SOCI 110		
14		17	
SENIOR			
First Semester		Second Semester	
2	Biology Topics/BIOL 490-495 <b>or</b>	6-8	Biology Electives**
	Directed Research/BIOL 487 <b>or</b>	3	Senior Seminar/LBST 383
	Biology Research I/BIOL 488	6	General Electives
6-8	Biology Electives**		
3	Theology III Series/LTHE 227 <b>or</b>		
	Philosophy III Series/LPHI 237		
1	Leadership Seminar		
3	General Electives		
15-17		15-17	

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Vertebrate Embryology (BIOL 307/308); **Histology (BIOL 320/321); Microbiology (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); Human Gross Anatomy (BIOL 365/366); Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376);** please consult with your advisor.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

†Calculus 1 is preferred.

††The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated UMHS matriculation; please consult with the Pre-Health Director to prepare an academic schedule.

**Total Credits to be Completed at Gannon: 128-132**

**UMHS 4+4 MEDICINE**

**Chemistry Curriculum†**

FRESHMAN			
First Semester		Second Semester	
3	Molecular and Cellular Biology / BIOL 122	3	Animal Form and Function/BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	Calculus 2/MATH 141
16		17	

## SOPHOMORE

*First Semester*

3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Applied Statistics/MATH 213
3	Fundamentals of Physics 1/PHYS 210
1	Fund of Physics 1 Lab/PHYS 211
3	Introduction to Philosophy/LPHI 131
3	History Without Borders/LHST 111
<hr/>	
17	

*Second Semester*

3	Animal Physiology/BIOL 368
1	Animal Physiology Lab/BIOL 369
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Fund of Physics 2/PHYS 212
1	Fund of Physics 2 Lab/PHYS 213
3	Intro to Psychology/PSYC 111
<hr/>	
15	

## JUNIOR

*First Semester*

3	Organic Chemistry III/CHEM 323
1	Organic Chemistry III Lab/CHEM 324
3	Structural Biochemistry/CHEM 366
3	Physical Chemistry I/CHEM 331
1	Physical Chemistry I Lab/CHEM 332
3	Philosophy II Series/LPHI*
3	Public Speaking/SPCH 111
<hr/>	
17	

*Second Semester*

3	Genetics/BIOL 345
3	Physical Chemistry II/CHEM 334
1	Physical Chemistry II Lab/CHEM 335
3	Modern Analytical Chemistry/ CHEM 336
2	Modern Analytical Chemistry Lab/ CHEM 337
1	Chemical Literature/CHEM 356
3	Theology II Series/LTHE*
<hr/>	
16	

## SENIOR

*First Semester*

3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383
7	Chemistry Electives*
3	Philosophy II Series/LPHI 237 <b>or</b> Theology III Series/LTHE 227
1	Leadership Seminar
<hr/>	
15-16	

*Second Semester*

3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383
4	Chemistry Electives*
3	Literature Series/LENG*
3	Senior Seminar/LBST 383
3	Fine Arts Series/LFIN*
<hr/>	
17-18	

\*Please refer to the Undergraduate Catalog for course options.

\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); **Histology (BIOL 320/321); Microbiology (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); Human Gross Anatomy (BIOL 365/366); Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.**

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated UMHS matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.

**Total Credits to be Completed at Gannon: 130-132**

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## **SALUS UNIVERSITY 3+4 ACCELERATED OPTOMETRY**

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Gannon University, in affiliation with Salus University Pennsylvania College of Optometry (PCO) located in Elkins Park, Pennsylvania, offers a program for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Optometry (O.D.) degree from Salus University PCO. The 3+4 accelerated program grants highly motivated and academically strong students an opportunity matriculate to Salus University PCO after completing only three years of undergraduate study at Gannon University. Successful completion of the first year of optometry school at Salus University PCO will allow the students in the 3+4 accelerated program to earn a Bachelor of Science degree in health science from Gannon University. Qualified students enrolled in this program will be conditionally guaranteed an interview with Salus University PCO, providing these students with an advantage over students from other institutions at the time of application. Participation in the program does not restrict student's ability to apply to other optometry schools.

### **GU Undergraduate Entry Requirements**

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.0 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become a primary health care provider

### **Salus University PCO Entry Requirements**

After three years of undergraduate study, the participant is conditionally guaranteed an interview and possible admission to Salus University PCO if the following requirements are satisfied.

- Completion of the specific prerequisite coursework for the Salus University PCO Doctor of Optometry program as indicated in the Salus University Catalog
- Completion of all Gannon University General Education (Core) requirements
- Cumulative overall GPA of 3.0 or higher by the end of the first year of undergraduate study
- Cumulative overall GPA of 3.3 or higher at the end of each semester following the first year of undergraduate study
- Adherence to Gannon University's Student Code of Conduct and Code of Academic Integrity
- Application to Salus University PCO between July 1st and September 1st following the second year of undergraduate study
- Optometry Admissions Test (OAT) scores released to Salus University PCO
- Satisfactory admissions interview with Salus University PCO
- Any additional requirements as outlined through the affiliation agreement between Gannon University and Salus University PCO; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

## Curriculum

## SALUS UNIVERSITY 3+4 ACCELERATED OPTOMETRY

FRESHMAN	
<i>First Semester</i>	<i>Second Semester</i>
3 Molecular and Cellular Biology/ BIOL 122	3 Animal Form and Function/ BIOL 124
1 Molecular and Cell. Biology Lab/ BIOL 123	1 Animal Form and Function Lab/ BIOL 125
3 General Chemistry I/CHEM 111	3 General Chemistry II/CHEM 114
1 General Chemistry Lab I/CHEM 112	1 General Chemistry Lab II/CHEM 115
3 Trigonometry/MATH 112 <b>or</b> Calculus 1/MATH 140	3 Calculus 1/MATH 140 <b>or</b> Calculus 2/MATH 141
3 College Composition/LENG 111	3 Critical Analysis & Comp/LENG 112
2 First-Year Seminar	3 Sacred Scriptures/LTHE 121
16	17
SOPHOMORE	
<i>First Semester</i>	<i>Second Semester</i>
3 Animal Physiology/BIOL 368	3 Organic Chemistry II/CHEM 224
1 Animal Physiology Lab/BIOL 369	1 Organic Chemistry II Lab/CHEM 225
3 Organic Chemistry I/CHEM 221	3 College Physics 2/PHYS 105
1 Organic Chemistry I Lab/CHEM 222	1 College Physics 2 Lab/PHYS 106
3 College Physics 1/PHYS 105	3 Applied Statistics/MATH 213
1 College Physics 1 Lab/PHYS 106	3 Theology II Series/LTHE*
3 Introduction to Philosophy/LPHI 131	3 Philosophy II Series/LPHI*
3 History Without Borders/LHST 111	
18	17
JUNIOR	
<i>First Semester***</i>	<i>Second Semester</i>
3 Microbiology/BIOL 331	3-4 Biology Electives**
1 Microbiology Lab/BIOL 332	3 Intro to Psychology/PSYC 111
3 Structural Biochemistry/CHEM 366	3 Fine Arts Series/LFIN*
3 Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237	3 Literature Series/LENG*
3 Public Speaking/SPCH 111	3 Senior Seminar/LBST 383
1 Leadership Seminar	
14	15-16

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); **Histology** (BIOL 320/321); Microbiology (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy** (BIOL 365/366); **Genetics** (BIOL 345/346); Cellular Biochemistry (BIOL 373/374); **Cell Biology** (BIOL 375/376); **Research Methods w/Labs** (PSYC 303); **Physiological Psychology** (PSYC 315); please consult with your advisor.

\*\*\*Students are encouraged to take 3-4 additional credits of Biology Electives this semester.

**Total Credits to be Completed at Gammon: 97-98**

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## DUQUESNE UNIVERSITY 2+4 ACCELERATED PHARMACY

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Gannon University, in affiliation with Duquesne University Mylan School of Pharmacy located in Pittsburgh, Pennsylvania, offers a program for qualified students to complete two years of undergraduate study at Gannon University and earn a Doctor of Pharmacy (Pharm.D.) degree from Duquesne University. Participation in the program alleviates much of the cost of applying to pharmacy schools, while providing a strong background in scientific and biomedical courses at Gannon University. Students enrolled in this program will be conditionally guaranteed acceptance to Duquesne University Mylan School of Pharmacy. Students in the 2+4 accelerated program will not earn a Gannon University undergraduate degree.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.0 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1170 (new SAT)/1100 (old SAT) or ACT composite score of 24
- Evidence of academic and personal potential, and a desire to become a pharmacist
- Strong background in college-prep courses
- Three letters of recommendation
- Evidence of leadership potential, community service and co-curricular activities
- Essay/personal statement is recommended

### Program Admissions Process

Students applying to this program are encouraged to apply by November 1st for priority consideration. From the qualified applicant pool, a maximum of four (4) students are accepted to this program in the senior year of high school. Once offered acceptance, students will have two weeks to send their enrollment deposit to reserve their space in the program. If the deadline passes without a deposit, their space will be given to another student and they will be placed at the bottom of the applicant wait list.

### Duquesne University Mylan School of Pharmacy Entry Requirements

After two years of undergraduate study, the participants are guaranteed an offer of admission to the Duquesne University Mylan School of Pharmacy if the following requirements are satisfied.

- Completion of the two-year undergraduate curriculum at Gannon University
- GPA of 3.5 or higher in Gannon undergraduate course; no grade lower than a C
- GPA of 3.0 or higher in science and math courses
- Recommendation from the Gannon University Pre-Health Applicant Review Committee
- Evidence of leadership potential and commitment to the pharmacy profession
- Satisfactory admissions interview with Duquesne University Mylan School of Pharmacy
- PCAT score of 375 or higher on each section of the exam, taken by fall of sophomore year
- Successful criminal background check
- Any additional requirements as outlined through the affiliation agreement between Gannon University and Duquesne University Mylan School of Pharmacy; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University



Each academic year, Duquesne University Mylan School of Pharmacy will admit up to four (4) students from Gannon University's Pharmacy Affiliation program. Additional students may be considered on an individual basis at the discretion of the Duquesne University Mylan School of Pharmacy.

## Curriculum

### DUQUESNE UNIVERSITY 2+4 ACCELERATED PHARMACY

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Basic Sociology/SOCI 110
3	Sacred Scriptures/LTHE 121	3	History Without Borders/LHST 111
17		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry I/CHEM 221	3	Organic Chemistry II/CHEM 224
1	Organic Chemistry I Lab/CHEM 222	1	Organic Chemistry II Lab/CHEM 225
3	College Physics 1/PHYS 105	3	Applied Statistics/MATH 213
1	College Physics 1 Lab/PHYS 106	3	Fine Arts Series/LFIN*
3	Macroeconomics/BCOR 112	3	Intro to Psychology/PSYC 111
3	Introduction to Philosophy/LPHI 131	3	Philosophy of Ethical Responsibility/ LPHI 237
3	Public Speaking/SPCH 111		
17		16	

\*Please refer to the Undergraduate Catalog for course options.

**Total Credits to be Completed at Gannon: 67**

### LECOM 2+3/2+4 EARLY ACCEPTANCE PHARMACY, LECOM 3+3/3+4 EARLY ACCEPTANCE PHARMACY, LECOM 4+3/4+4 EARLY ACCEPTANCE PHARMACY

Gannon University, in affiliation with the Lake Erie College of Osteopathic Medicine (LECOM) School of Pharmacy, offers three early acceptance programs for qualified students to earn a Doctor of Pharmacy (Pharm.D.) degree from LECOM after two, three, or four years of undergraduate study at Gannon University. Students enrolled in these programs are conditionally guaranteed an acceptance to LECOM. The 2+3/2+4 program is available to exceptional students who have the maturity and intellectual capability to enter a professional school after completing only two years of undergraduate study. Students in the 2+3/2+4 program will not earn a Gannon University undergraduate degree. The 3+3/3+4 program is available to all students, but is typically utilized by highly motivated students who wish to enter pharmacy school before receiving an undergraduate degree. Successful completion of the first year of pharmacy school at LECOM will allow the students in the 3+3/3+4 program to earn a Bachelor of Science degree in health sciences from Gannon University. The 4+3/4+4

program is recommended for most students. This program allows students to complete a four-year bachelor's degree prior to attending LECOM. After completing their undergraduate education at Gannon University, students matriculate to either LECOM's School of Pharmacy located in Erie, Pennsylvania for three years of pharmacy school education or LECOM's School of Pharmacy located in Bradenton, Florida for four years of pharmacy school education.

### **GU Undergraduate Entry Requirements**

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.5 or higher on a 4.0 scale
- Class rank in the top 25% of your high school class
- Minimum SAT score of 1240 (new SAT)/1170 (old SAT) or ACT composite score of 26
- Evidence of academic and personal potential, and a desire to become a pharmacist
- Satisfactory admissions interview with LECOM

### **Program Admissions Process**

Students applying to this program are encouraged to apply by November 1st for priority consideration. Guaranteed acceptance to the program will not be granted until all requirements listed below have been satisfied.

Students who wish to be considered for the LECOM pharmacy affiliation programs with Gannon University must:

- apply to Gannon University's LECOM 2+3/2+4, 3+3/3+4, or 4+3/4+4 Early Acceptance Pharmacy program and be successfully admitted to the University.
- complete the Early Acceptance Program Inquiry form available on the LECOM portal ([www.portal.lecom.edu](http://www.portal.lecom.edu)), selecting the appropriate program from the drop down menu and listing Gannon University as one of the top three schools you are interested in attending.
- submit an Early Acceptance Program online application.
- complete a satisfactory admissions interview with LECOM after receiving an offer of acceptance from Gannon University as a high school senior.
- send LECOM an email from your University email account, indicating that you have chosen to attend Gannon.
- receive a provisional letter of acceptance from LECOM.

Gannon University students interested in the 2+3/2+4 program must submit an Early Acceptance Program online application no later than November 1st of their freshman year at Gannon University.

Gannon University students interested in the 3+3/3+4 program must submit an Early Acceptance Program online application no later than February 1st of their freshman year at Gannon University.

Gannon University students interested in the 4+3/4+4 program must submit an Early Acceptance Program online application no later than February 1st of their sophomore year at Gannon University.

### **LECOM School of Pharmacy Entry Requirements**

After two, three, or four years of undergraduate study, the participants are conditionally guaranteed an offer of admission to the LECOM School of Pharmacy if the following requirements are satisfied.

- Grades are submitted through the LECOM portal within 30 days following each semester
- LECOM's progressive GPA requirements are met

- Completion of the undergraduate curriculum at Gannon University
- Cumulative overall GPA of 3.4 or higher by time of application
- Cumulative science GPA of 3.2 or higher by time of application
- Minimum of a C in all courses required by LECOM
- The PCAT will not be required for anyone submitting an official SAT or ACT score
- Demonstrated leadership potential and commitment to the pharmacy profession
- Good standing with Gannon University
- U.S. citizen or permanent resident
- Successful criminal background check
- Meet and agree to LECOM's Health and Technical Standards
- Application to LECOM through PharmCAS by November 15th of the year prior to LECOM matriculation
- LECOM secondary application submitted by January 1st of the year of LECOM matriculation
- Letters of recommendation and all supporting documentation to be submitted to PharmCAS
- Any additional requirements as outlined through the affiliation agreement between Gannon University and the LECOM School of Pharmacy; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

Each academic year, LECOM will admit up to ten (10) students total from Gannon University's pharmacy affiliation programs. Additional students may be considered on an individual basis and at the discretion of LECOM.

*Students admitted to this program will forfeit their conditionally guaranteed seat if they apply to any other pharmacy schools.*

## Curriculum

### LECOM 2+3/2+4 EARLY ACCEPTANCE PHARMACY

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Intro to Psychology/PSYC 111 <b>or</b> Basic Sociology/SOCI 110
3	Sacred Scriptures/LTHE 121	3	History Without Borders/LHST 111
17		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry I/CHEM 221	3	Biology Electives**
1	Organic Chemistry I Lab/CHEM 222	3	Organic Chemistry II/CHEM 224
3	College Physics 1/PHYS 105	1	Organic Chemistry II Lab/CHEM 225
1	College Physics 1 Lab/PHYS 106	3	Fine Arts Series/LFIN*
3	Applied Statistics/MATH 213	3	Intro to Philosophy/LPHI 131
3	Microeconomics/BCOR 111 <b>or</b> Macroeconomics/BCOR 112		
3	Public Speaking/SPCH 111		
17		13	

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following science coursework is highly recommended: Microbiology (BIOL 331/332) and Human Anatomy & Physiology I (BIOL 115/116); please consult with advisor.

**Total Credits to be Completed at Gammon: 64**

### LECOM 3+3/3+4 EARLY ACCEPTANCE PHARMACY

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	History Without Borders/LHST 111
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry I/CHEM 221	3	Animal Physiology/BIOL 368
1	Organic Chemistry I Lab/CHEM 222	1	Animal Physiology Lab/BIOL 369
3	College Physics 1/PHYS 105	3	Organic Chemistry II/CHEM 224
1	College Physics 1 Lab/PHYS 106	1	Organic Chemistry II Lab/CHEM 225
3	Microeconomics/BCOR 111 <b>or</b> Macroeconomics/BCOR 112	3	College Physics 2/PHYS 108
3	Public Speaking/SPCH 111	1	College Physics 2 Lab/PHYS 109
3	Introduction to Philosophy/LPHI 131	3	Theology II Series/LTHE*
17		3	Philosophy II Series/LPHI*
17		18	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3-4	Biology Electives**	3	Genetics/BIOL 345
3	Structural Biochemistry/CHEM 366	3-4	Biology Electives**
3	Applied Statistics/MATH 213	3	Fine Arts Series/LFIN*
3	Intro to Psychology/PSYC 111 <b>or</b> Basic Sociology/SOCI 110	3	Literature Series/LENG*
3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237	3	Senior Seminar/LBST 383
1	Leadership Seminar		
16-17		15-16	

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); Histology (BIOL 320/321); **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

**Total Credits to be Completed at Gammon: 99-101**

**LECOM 4+3/4+4 EARLY ACCEPTANCE PHARMACY****Biology Curriculum†**

<b>FRESHMAN</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	History Without Borders/LHST 111
16		17	
<b>SOPHOMORE</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Ecosystem Biology and Evolution/ BIOL 126	3-4	Biology Electives**
1	Ecosystem Biology and Evol. Lab/ BIOL 127	3	Organic Chemistry II/CHEM 224
3	Organic Chemistry I/CHEM 221	1	Organic Chemistry II Lab/CHEM 225
1	Organic Chemistry I Lab/CHEM 222	3	Philosophy II Series/LPHI*
3	Applied Statistics/MATH 213	3	Theology II Series/LTHE*
3	Introduction to Philosophy/LPHI 131	3	Literature Series/LENG*
3	Public Speaking/SPCH 111		
17		16-17	
<b>JUNIOR</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Animal Physiology/BIOL 368	3	Genetics/BIOL 345
1	Animal Physiology Lab/BIOL 369	3-4	Biology Electives**
3	Structural Biochemistry/CHEM 366	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Fine Arts Series/LFIN*
3	Intro to Psychology/PSYC 111 <b>or</b> Basic Sociology/SOCI 110	3	General Electives
3	Microeconomics/BCOR 111 <b>or</b> Macroeconomics/BCOR 112		
17		16-17	
<b>SENIOR</b>			
<i>First Semester</i>		<i>Second Semester</i>	
2	Biology Topics/BIOL 490-495 <b>or</b> Directed Research/BIOL 487 <b>or</b> Biology Research I/BIOL 488	6-8	Biology Electives**
6-8	Biology Electives**	3	Senior Seminar/ LBST 383
3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237	6	General Electives
1	Leadership Seminar		
3	General Electives		
15-17		15-17	

\*Please refer to Undergraduate Catalog for course options.

*\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Vertebrate Embryology (BIOL 307/308); Histology (BIOL 320/321); **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.*

*†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated LECOM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.*

**Total Credits to be Completed at Gannon: 129-135**

**LECOM 4+3/4+4 EARLY ACCEPTANCE PHARMACY**

**Chemistry Curriculum†**

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Calculus 2/MATH 141
3	College Composition/LENG 111	3	Critical Analysis & Comp/LENG 112
2	First-Year Seminar	3	Sacred Scriptures/LTHE 121
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry I/CHEM 221	3	Animal Physiology/BIOL 368
1	Organic Chemistry I Lab/CHEM 222	1	Animal Physiology Lab/BIOL 369
3	Applied Statistics/MATH 213	3	Organic Chemistry II/CHEM 224
3	Fundamentals of Physics 1/PHYS 210	1	Organic Chemistry II Lab/CHEM 225
1	Fund of Physics 1 Lab/PHYS 211	3	Fund of Physics 2/PHYS 212
3	Introduction to Philosophy/LPHI 131	1	Fund of Physics 2 Lab/PHYS 213
3	History Without Borders/LHST 111	3	Intro to Psychology/PSYC 111 <b>or</b> Basic Sociology/SOCI 110
		3	Literature Series/LENG*
17		18	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry III/CHEM 323	3	Genetics/BIOL 345
1	Organic Chemistry III Lab/CHEM 324	3	Physical Chemistry II/CHEM 334
3	Structural Biochemistry/CHEM 366	1	Physical Chemistry II Lab/CHEM 335
3	Physical Chemistry I/CHEM 331	3	Modern Analytical Chemistry/ CHEM 336
1	Physical Chemistry I Lab/CHEM 332	2	Modern Analytical Chemistry Lab/ CHEM 337
3	Philosophy II Series/LPHI*	1	Chemical Literature/CHEM 356
3	Theology II Series/LTHE*	3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237
		1	Leadership Seminar
17		17	

SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3-4	Biology Electives**	3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383	1	Undergrad Research/CHEM 380-383
7	Chemistry Electives	4	Chemistry Electives
3	Fine Arts Series/LFIN*	3	Public Speaking/SPCH 111
3	Microeconomics/BCOR 111 <b>or</b> Macroeconomics/BCOR 112	3	Senior Seminar/LBST 383
17-18		14-15	

\*Please refer to Undergraduate Catalog for course options.

\*\* The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); Histology (BIOL 320/321); **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated LECOM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.

**Total Credits to be Completed at Gannon: 133-135**

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## UNIVERSITY AT BUFFALO 3+4 ACCELERATED PHARMACY

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Gannon University, in affiliation with The State University of New York, University at Buffalo (UB), School of Pharmacy and Pharmaceutical Sciences located in Buffalo, New York, offers a program for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Pharmacy (Pharm.D.) degree from UB. The 3+4 accelerated program grants highly motivated and academically strong students an opportunity to matriculate to UB after completing only three years of undergraduate study at Gannon University. Successful completion of the first year of pharmacy school at UB will allow the students in the 3+4 accelerated program to earn a Bachelor of Science degree in health science from Gannon University. Qualified students enrolled in this program will be conditionally guaranteed an interview with UB School of Pharmacy and Pharmaceutical Sciences, providing these students with an advantage over students from other institutions at the time of application. Participation in the program does not restrict students' ability to apply to other pharmacy schools.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.4 or higher on a 4.0 scale
- Class rank in the top 25% of your high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, as well as desire to become a pharmacist

### UB School of Pharmacy and Pharmaceutical Sciences Entry Requirements

After three years of undergraduate study, the participant is conditionally guaranteed an interview and possible admission to UB School of Pharmacy and Pharmaceutical Sciences if the following requirements are satisfied.

- Cumulative overall GPA of 3.5 or higher
- Cumulative GPA of 3.3 or higher in prerequisite science and mathematics courses
- Evidence of achieving and maintaining these standards at the end of each undergraduate year
- Grade of C (2.0) or greater in all courses required by UB, which must be successfully completed by the end of the summer semester prior to fall admission
- Application to UB through PharmCAS, no later than October 1st of junior year
- Competitive PCAT score, typically at least 300\*
- Letter of recommendation from the Gannon University Pre-Health Applicant Review Committee as a part of the 3 required PharmCAS letters of recommendation
- University at Buffalo Pharm.D. Supplemental Application and Application Fee due March 1st
- Demonstration of communication skills, leadership ability, community service, health care-related or research experience, and motivation for pursuing a career in pharmacy
- Satisfactory admissions interview with UB
- Criminal Background Check (CBC) and a Drug Screen
- Any additional requirements as outlined through the affiliation agreement between Gannon University and The State University of New York, University at Buffalo, School of Pharmacy and Pharmaceutical Sciences; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

\*The Pharmacy College Admissions Test (PCAT) must be taken no later than October of the junior year. A maximum of two (2) test administrations are allowed by the University at Buffalo.

A candidate in good standing will have the option of spending the fourth year of the program at Gannon University to complete a baccalaureate degree rather than at the University at Buffalo in the first year of the Pharm.D. program. Choosing this option will necessarily extend the length of the program to eight years. During the fourth year at Gannon University, a participant must maintain the same academic standards as specified for the first three years in order to remain in good standing.

## Curriculum

### UNIVERSITY AT BUFFALO 3+4 ACCELERATED PHARMACY

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Calculus 2/MATH 141
3	College Composition/LENG 111	3	Critical Analysis & Comp/LENG 112
3	Sacred Scriptures/LTHE 121	3	History Without Borders/LHST 111
17		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry I/CHEM 221	3	Organic Chemistry II/CHEM 224
1	Organic Chemistry I Lab/CHEM 222	1	Organic Chemistry II Lab/CHEM 225
3	Microeconomics/BCOR 111 <b>or</b> Macroeconomics/BCOR 112	3	College Physics 1/PHYS 105
		1	College Physics 1 Lab/PHYS 106



3	Public Speaking/SPCH 111	3	Applied Statistics/MATH 213 <b>or</b>
3	Introduction to Philosophy/LPHI 131		Psych Stats/PSYC 211
3	Introduction to Psych/PSYC 111 <b>or</b>	3	Theology II Series/LTHE*
	Basic Sociology/SOCI 110	3	Philosophy II Series/LPHI*
16		17	
<b>JUNIOR</b>			
<i>First Semester</i>		<i>Second Semester</i>	
3	Human Anatomy & Physiology I/ BIOL 115†	3	Human Anatomy & Physiology II/ BIOL 117†
1	Human Anatomy & Physiology I Lab/ BIOL 116†	1	Human Anatomy & Physiology II Lab/BIOL 118†
3	Microbiology/BIOL 331	3	Genetics/BIOL 345
1	Microbiology Lab/BIOL 332	3	Fine Arts Series/LFIN*
3	Structural Biochemistry/CHEM 366	3	Literature Series/LENG*
3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237	3	Senior Seminar/LBST 383 (Medical Ethics)
1	Leadership Seminar		
15		16	

\*Please refer to the Undergraduate Catalog for course options.

† Students may take the Animal Physiology (BIOL 368/369) and Human Gross Anatomy (BIOL 365/366) sequence in place of BIOL 115-118.

**Total Credits to be Completed at Gannon: 98**

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## UNIVERSITY OF CHARLESTON 2+4 ACCELERATED PHARMACY, UNIVERSITY OF CHARLESTON 3+4 ACCELERATED PHARMACY

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Gannon University, in affiliation with the University of Charleston (UC) School of Pharmacy located in Charleston, West Virginia, offers two accelerated programs for qualified students to earn a Doctor of Pharmacy (Pharm.D.) degree from the UC School of Pharmacy after two or three years of undergraduate study at Gannon University. Students enrolled in these programs are conditionally guaranteed an acceptance to the UC School of Pharmacy. The 2+4 accelerated program is available to exceptional students who have the maturity and intellectual capability to enter a professional school after completing only two years of undergraduate study. Students in the 2+4 accelerated program will not earn a Gannon University undergraduate degree. The 3+4 accelerated program is typically utilized by highly motivated students who wish to enter pharmacy school before receiving an undergraduate degree. Successful completion of the first year of pharmacy school at UC School of Pharmacy will allow the students in 3+4 accelerated program to earn a Bachelor of Science degree in health science from Gannon University.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.0 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1170 (new SAT)/1100 (old SAT) or ACT composite score of 24
- Two letters of recommendation

- Evidence of scholarly and extracurricular activities
- Evidence of academic and personal potential, and a desire to become a pharmacist

**UC School of Pharmacy Entry Requirements**

After two or three years of undergraduate study, the participant is conditionally guaranteed admission to the UC School of Pharmacy if the following requirements are satisfied.

- Successful completion of the accelerated program curriculum at Gannon University
- Cumulative GPA of 3.25 or higher in the coursework outlined in the program curriculum, with no grade lower than a C
- Cumulative GPA of 3.25 or higher in math and sciences courses, with no grade lower than a C
- Two letters of recommendation; one letter must be from the Pre-Health Applicant Review Committee and the other from a licensed pharmacist
- Demonstrated experience in community/campus activism
- Completed application for admission to the UC School of Pharmacy
- PCAT score in the 65th percentile or higher with an appropriate score on the writing sample
- Satisfactory interview with the UC School of Pharmacy faculty
- Successful criminal background check
- Any additional requirements as outlined through the affiliation agreement between Gannon University and the University of Charleston School of Pharmacy; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

Each academic year UC School of Pharmacy will admit up to five (5) students from each of Gannon University’s pharmacy affiliation programs. Additional students may be considered on an individual basis and at the discretion of the UC School of Pharmacy.

*Students receiving grades of D or F in any of the required courses will lose their conditionally guaranteed seat in the affiliation program.*

**Curriculum**

**UNIVERSITY OF CHARLESTON 2+4 ACCELERATED PHARMACY**

FRESHMAN	
<i>First Semester</i>	<i>Second Semester</i>
3 Molecular and Cellular Biology/ BIOL 122	3 Animal Form and Function/ BIOL 124
1 Molecular and Cell. Biology Lab/ BIOL 123	1 Animal Form and Function Lab/ BIOL 125
3 General Chemistry I/CHEM 111	3 General Chemistry II/CHEM 114
1 General Chemistry I Lab/CHEM 112	1 General Chemistry II Lab/CHEM 115
3 College Algebra/MATH 111	3 Calculus 1/MATH 140
3 College Composition/LENG 111	3 Critical Analysis & Comp/LENG 112
3 Sacred Scriptures/LTHE	3 History Without Borders/LHST 111
17	17
<i>Third Semester</i>	
3 College Physics 1/PHYS 105	
1 College Physics 1 Lab/PHYS 106	
3 Microeconomics/BCOR 111 <b>or</b> Macroeconomics/BCOR 112	
3 Introduction to Psychology/PSYC 111 <b>or</b> Basic Sociology/SOCI 110	
10	

## SOPHOMORE

*First Semester*

3	Human Anatomy & Physiology I/ BIOL 115
1	Human Anatomy & Physiology I Lab/ BIOL 116
3	Microbiology/BIOL 331
1	Microbiology Lab/BIOL 332
3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Public Speaking/SPCH 111

15

*Second Semester*

3	Human Anatomy & Physiology II/ BIOL 117
1	Human Anatomy & Physiology II Lab/BIOL 118
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Applied Statistics/MATH 213
3	Intro to Philosophy/LPHI 131
3	Senior Seminar/LBST 383 (Medical Ethics)

17

**Total Credits to be Completed at Gannon: 76****UNIVERSITY OF CHARLESTON 3+4 ACCELERATED PHARMACY**

## FRESHMAN

*First Semester*

3	Molecular and Cellular Biology/ BIOL 122
1	Molecular and Cell. Biology Lab/ BIOL 123
3	General Chemistry I/CHEM 111
1	General Chemistry I Lab/CHEM 112
3	College Algebra/MATH 111
3	College Composition/LENG 111
3	Sacred Scriptures/LTHE 121

17

*Second Semester*

3	Animal Form and Function/ BIOL 124
1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry II/CHEM 114
1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140
3	Critical Analysis & Comp/LENG 112
3	History Without Borders/LHST 111

17

## SOPHOMORE

*First Semester*

3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Introduction to Psych/PSYC 111 <b>or</b> Basic Sociology/SOCI 110
3	Microeconomics/BCOR 111 <b>or</b> Macroeconomics/BCOR 112
3	Public Speaking/SPCH 111
3	Introduction to Philosophy/LPHI 131

16

*Second Semester*

3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	College Physics 1/PHYS 105
1	College Physics 1 Lab/PHYS 106
3	PC Applications/CIS 170-174
3	Theology II Series/LTHE*
3	Philosophy II Series/LPHI*

17

## JUNIOR

*First Semester*

3	Human Anatomy & Physiology I/ BIOL 115
1	Human Anatomy & Physiology I Lab/ BIOL 116
3	Microbiology/BIOL 331
1	Microbiology Lab/BIOL 332
3	Foreign Language
3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237
3	Literature Series/LENG*

17

*Second Semester*

3	Human Anatomy & Physiology II/ BIOL 117
1	Human Anatomy & Physiology II Lab/BIOL 118
3	Immunology/BIOL 338
3	Applied Statistics/MATH 213
3	Fine Arts Series/LFIN*
3	Senior Seminar/LBST 383 (Medical Ethics)

16

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*\*Please refer to the Undergraduate Catalog for course options.*

**Total Credits to be Completed at Gannon: 100**

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## **KENT STATE UNIVERSITY 3+4 ACCELERATED PODIATRIC MEDICINE**

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Gannon University, in affiliation with Kent State University College of Podiatric Medicine (KSUCPM) located in Independence, Ohio, offers a program for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Podiatric Medicine (D.P.M.) degree from KSUCPM. The 3+4 accelerated program grants highly motivated and academically strong students the opportunity to matriculate to KSUCPM after completing only three years of undergraduate study at Gannon University. Students enrolled in the program are conditionally guaranteed acceptance to KSUCPM. Participation in the program alleviates much of the cost of applying to podiatry schools, while providing a strong background in scientific and biomedical courses at Gannon University. Successful completion of the first year of podiatry school at KSUCPM will allow students in the 3+4 accelerated program to earn a Bachelor of Science degree in health science from Gannon University.

### **GU Undergraduate Entry Requirements**

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.0 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become a podiatrist

### **KSUCPM Entry Requirements**

After three years of undergraduate study, the participant is conditionally guaranteed admission to KSUCPM if the following requirements are satisfied.

- Completion of the curriculum as outlined in Gannon University's Undergraduate Catalog
- Cumulative overall GPA of 3.4 or higher maintained during the first three years of undergraduate study at Gannon
- Cumulative science GPA of 3.2 or higher maintained during the first three years of undergraduate study at Gannon
- MCAT score of 496 or higher preferred
- Commitment to the podiatric profession and its advancement, and demonstrated moral and professional character
- Application for admission to KSUCPM
- Any additional requirements as outlined through the affiliation agreement between Gannon University and Kent State University College of Podiatric Medicine; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

## Curriculum

## KENT STATE UNIVERSITY 3+4 ACCELERATED PODIATRIC MEDICINE

FRESHMAN	
<i>First Semester</i>	<i>Second Semester</i>
3 Molecular and Cellular Biology/ BIOL 122	3 Animal Form and Function/ BIOL 124
1 Molecular and Cell. Biology Lab/ BIOL 123	1 Animal Form and Function Lab/ BIOL 125
3 General Chemistry I/CHEM 111	3 General Chemistry II/CHEM 114
1 General Chemistry I Lab/CHEM 112	1 General Chemistry II Lab/CHEM 115
3 Trigonometry/MATH 112 <b>or</b> Calculus 1/MATH 140	3 Critical Analysis & Comp/LENG 112
3 College Composition/LENG 111	3 Sacred Scriptures/LTHE 121
2 First-Year Seminar	3 History Without Borders/LHST 111
16	17
SOPHOMORE	
<i>First Semester</i>	<i>Second Semester</i>
3 Animal Physiology/BIOL 368	3-4 Biology Electives**
1 Animal Physiology Lab/BIOL 369	3 Organic Chemistry II/CHEM 224
3 Organic Chemistry I/CHEM 221	1 Organic Chemistry II Lab/CHEM 225
1 Organic Chemistry I Lab/CHEM 222	3 College Physics 2/PHYS 108
3 College Physics 1/PHYS 105	1 College Physics 2 Lab/PHYS 109
1 College Physics 1 Lab/PHYS 106	3 Theology II Series/LTHE*
3 Introduction to Philosophy/LPHI 131	3 Philosophy II Series/LPHI*
3 Public Speaking/SPCH 111	
18	17-18
JUNIOR	
<i>First Semester***</i>	<i>Second Semester</i>
3 Structural Biochemistry/CHEM 366	3 Genetics/BIOL 345
3 Applied Statistics/MATH 213	3-4 Biology Electives**
3 Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237	3 Fine Arts Series/LFIN*
3 Introduction to Psychology/PSYC 111	3 Literature Series/LENG*
1 Leadership Seminar	3 Senior Seminar/LBST 383
13	15-16

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); **Histology** (BIOL 320/321); **Microbiology** (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy** (BIOL 365/366); Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

**Total Credits to be Completed at Gannon: 96-98**

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# TEMPLE UNIVERSITY 3+4 ACCELERATED PODIATRIC MEDICINE

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Gannon University, in affiliation with Temple University School of Podiatric Medicine (TUSPM), located in Philadelphia, Pennsylvania, offers a program for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Podiatric Medicine (D.P.M.) degree from TUSPM. The 3+4 accelerated program grants highly motivated and academically strong students the opportunity to matriculate to TUSPM after completing only three years of undergraduate study at Gannon University. Students enrolled in the program are conditionally guaranteed acceptance to TUSPM. Participation in the program alleviates much of the cost of applying to podiatry schools, while providing a strong background in scientific and biomedical courses at Gannon University. Successful completion of the first year of podiatry school at TUSPM will allow students in the 3+4 accelerated program to earn a Bachelor of Science degree in health science from Gannon University.

### GU Undergraduate Entry Requirements

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.0 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become a podiatrist

### TUSPM Entry Requirements

After three years of undergraduate study, the participant is conditionally guaranteed admission TUSPM if the following requirements are satisfied.

- Completion of at least 90 semester hours of prerequisite undergraduate coursework
- Cumulative overall GPA of 3.1 or higher
- Cumulative science GPA of 3.0 or higher
- MCAT score at the 40th percentile or higher
- Recommendation by the Pre-Health Applicant Review Committee or Director of Pre-Health Programs as having met the established requirements and standards for consideration for admission
- Satisfactory admissions interview with TUSPM Admissions Committee
- Any additional requirements as outlined through the affiliation agreement between Gannon University and TUSPM; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

### Curriculum

#### TEMPLE UNIVERSITY 3+4 ACCELERATED PODIATRIC MEDICINE

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115

3	Trigonometry/MATH 112 <b>or</b>	3	Critical Analysis & Comp/LENG 112
	Calculus 1/MATH 140	3	Sacred Scriptures/LTHE 121
3	College Composition/LENG 111	3	History Without Borders/LHST 111
2	First-Year Seminar		
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Animal Physiology/BIOL 368	3-4	Biology Electives**
1	Animal Physiology Lab/BIOL 369	3	Organic Chemistry II/CHEM 224
3	Organic Chemistry I/CHEM 221	1	Organic Chemistry II Lab/CHEM 225
1	Organic Chemistry I Lab/CHEM 222	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Theology II Series/LTHE*
3	Introduction to Philosophy/LPHI 131	3	Philosophy II Series/LPHI*
3	Public Speaking/SPCH 111		
18		17-18	
JUNIOR			
<i>First Semester***</i>		<i>Second Semester</i>	
3	Structural Biochemistry/CHEM 366	3	Genetics/BIOL 345
3	Applied Statistics/MATH 213	3-4	Biology Electives**
3	Theology III Series/LTHE 227 <b>or</b>	3	Fine Arts Series/LFIN*
	Philosophy III Series/LPHI 237	3	Literature Series/LENG*
3	Introduction to Psychology/PSYC 111	3	Senior Seminar/LBST 383
1	Leadership Seminar		
13		15-16	

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); **Vertebrate Embryology** (BIOL 307/308); **Histology** (BIOL 320/321); Microbiology (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); Human Gross Anatomy (BIOL 365/366); Cellular Biochemistry (BIOL 373/374); Cell Biology (BIOL 375/376); and **Introduction to Pathology** (BIOL 490); please consult with your advisor.

\*\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

Total Credits to be Completed at Gannon: 96-98

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## ROSS UNIVERSITY 3+4 ACCELERATED VETERINARY MEDICINE, ROSS UNIVERSITY 4+4 VETERINARY MEDICINE

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Gannon University, in affiliation with Ross University School of Veterinary Medicine (RUSVM) located on the island of St. Kitts in the Caribbean, offers two programs for qualified students to earn a bachelor's degree from Gannon University and a Doctor of Veterinary Medicine (D.V.M.) degree from Ross University. The 3+4 accelerated program grants highly motivated and academically strong students an opportunity to matriculate to RUSVM after completing only three years of undergraduate study at Gannon University. Successful completion of the first year of veterinary school at RUSVM will allow students in the 3+4 accelerated program to earn a Bachelor of Science degree in health science from Gannon University. The majority of students complete the traditional 4+4 program, which allows

students to complete a four-year bachelor’s degree prior to attending RUSVM. Students enrolled in these programs are conditionally guaranteed an acceptance to RUSVM.

**GU Undergraduate Entry Requirements**

- Completion of four years of science courses at the high school level (biology and chemistry courses are required, while physics is highly recommended)
- Completion of four years of math courses at the high school level
- Cumulative high school GPA of 3.4 or higher on a 4.0 scale
- Class rank in the top 25% of high school class
- Minimum SAT score of 1220 (new SAT)/1150 (old SAT) or ACT composite score of 25
- Evidence of academic and personal potential, and a desire to become a veterinarian

**RUSVM Entry Requirements**

After three or four years of undergraduate study, the participant is conditionally guaranteed an acceptance to RUSVM if the following requirements are satisfied.

- Cumulative overall GPA of 3.2 or higher
- Minimum of a 3.00 in all courses designated by RUSVM as prerequisites for admission
- No F, D, or C- grade in any course designated by RUSVM as prerequisite for admission
- Score in the 25th percentile or better in each category of the Graduate Record Examination
- Other minimum admissions requirements required of all RUSVM students
- Satisfactory admissions interview with RUSVM
- Any additional requirements as outlined through the affiliation agreement between Gannon University and RUSVM; students accepted to the program will have access to all requirements specified in the agreement through the Director of the Pre-Health Advising Program at Gannon University

Each academic year, RUSM will admit up to five (5) students total from Gannon University’s veterinary medicine affiliation programs. Additional students may be considered on an individual basis and at the discretion of RUSVM.

**Curriculum**

**ROSS UNIVERSITY 3+4 ACCELERATED VETERINARY MEDICINE**

FRESHMAN			
<i>First Semester</i>		<i>Second Semester</i>	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Trigonometry MATH 112 <b>or</b> Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121
2	First-Year Seminar	3	History Without Borders/LHST 111
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Animal Physiology/BIOL 368	3-4	Biology Electives**
1	Animal Physiology Lab/BIOL 369	3	Organic Chemistry II/CHEM 224



3	Organic Chemistry I/CHEM 221	1	Organic Chemistry II Lab/CHEM 225
1	Organic Chemistry I Lab/CHEM 222	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Philosophy II Series/LPHI*
3	Introduction to Philosophy/LPHI 131	3	Theology II Series/LTHE*
3	Public Speaking/SPCH 111		
18		17-18	

## JUNIOR

*First Semester\*\*\**

3	Structural Biochemistry/CHEM 366	
3	Applied Statistics/MATH 213	3-4
3	Theology III Series/LTHE 227 <b>or</b>	3
	Philosophy III Series/LPHI 237	3
3	Introduction to Psychology/PSYC 111	3
1	Leadership Seminar	
13		15-16

*Second Semester*

3	Genetics/BIOL 345
	Biology Electives**
3	Fine Arts Series/LFIN*
3	Literature Series/LENG*
3	Senior Seminar/LBST 383

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); Histology (BIOL 320/321); **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

\*\*\*Students are encouraged to take 3-4 additional credits of Biology Electives this semester.

**Total Credits to be Completed at Gannon: 96-98**

## ROSS UNIVERSITY 4+4 VETERINARY MEDICINE

## Biology Curriculum†

## FRESHMAN

*First Semester*

3	Molecular and Cellular Biology/ BIOL 122	
1	Molecular and Cell. Biology Lab/ BIOL 123	
3	General Chemistry I/CHEM 111	
1	General Chemistry I Lab/CHEM 112	
3	Trigonometry/MATH 112 <b>or</b>	
	Calculus 1/MATH 140	
3	College Composition/LENG 111	
2	First Year-Seminar	
16		17

*Second Semester*

3	Animal Form and Function/ BIOL 124
1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry II/CHEM 114
1	General Chemistry II Lab/CHEM 115
3	Critical Analysis & Comp/LENG 112
3	Sacred Scriptures/LTHE 121
3	History Without Borders/LHST 111

## SOPHOMORE

*First Semester*

3	Ecosystem Biology and Evolution/ BIOL 126	
1	Ecosystem Biology and Evol. Lab/ BIOL 127	
3	Organic Chemistry I/CHEM 221	

*Second Semester*

4	Biology Electives**
3	Organic Chemistry II/CHEM 224
1	Organic Chemistry II Lab/CHEM 225
3	Philosophy II Series/LPHI*
3	Theology II Series/LTHE*

1	Organic Chemistry I Lab/CHEM 222	3	Literature Series/LENG*
3	Applied Statistics/MATH 213		
3	Introduction to Philosophy/LPHI 131		
3	Public Speaking/SPCH 111		
17		17	
JUNIOR			
First Semester		Second Semester	
3	Animal Physiology/BIOL 368	3	Genetics/BIOL 345
1	Animal Physiology Lab/BIOL 369	4	Biology Electives**
3	Structural Biochemistry/CHEM 366	3	College Physics 2/PHYS 108
3	College Physics 1/PHYS 105	1	College Physics 2 Lab/PHYS 109
1	College Physics 1 Lab/PHYS 106	3	Fine Arts Series/LFIN*
3	Introduction to Psychology/PSYC 111	3	General Electives
14		17	
SENIOR			
First Semester		Second Semester	
2	Biology Topics/BIOL 490-495 <b>or</b>	6-8	Biology Electives**
	Directed Research/BIOL 487 <b>or</b>	3	Senior Seminar/LBST 383
	Biology Research I/BIOL 488	6	General Electives
6-8	Biology Electives**		
3	Theology III Series/LTHE 227 <b>or</b>		
	Philosophy III Series/LPHI 237		
1	Leadership Seminar		
3	General Electives		
15-17		15-17	

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Vertebrate Embryology (BIOL 307/308); Histology (BIOL 320/321); **Microbiology** (BIOL 331/332); Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy** (BIOL 365/366); Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated RUISVM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.

**Total Credits to be Completed at Gannon: 128-132**

**ROSS UNIVERSITY 4+4 VETERINARY MEDICINE**

**Chemistry Curriculum†**

FRESHMAN			
First Semester		Second Semester	
3	Molecular and Cellular Biology/ BIOL 122	3	Animal Form and Function/ BIOL 124
1	Molecular and Cell. Biology Lab/ BIOL 123	1	Animal Form and Function Lab/ BIOL 125
3	General Chemistry I/CHEM 111	3	General Chemistry II/CHEM 114
1	General Chemistry I Lab/CHEM 112	1	General Chemistry II Lab/CHEM 115
3	Calculus 1/MATH 140	3	Critical Analysis & Comp/LENG 112
3	College Composition/LENG 111	3	Sacred Scriptures/LTHE 121

2	First-Year Seminar	3	Calculus 2/MATH 141
16		17	
SOPHOMORE			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry I/CHEM 221	3	Animal Physiology/BIOL 368
1	Organic Chemistry I Lab/CHEM 222	1	Animal Physiology Lab/BIOL 369
3	Applied Statistics/MATH 213	3	Organic Chemistry II/CHEM 224
3	Fundamentals of Physics 1/PHYS 210	1	Organic Chemistry II Lab/CHEM 225
1	Fund of Physics 1 Lab/PHYS 211	3	Fund of Physics 2/PHYS 212
3	Introduction to Philosophy/LPHI 131	1	Fund of Physics 2 Lab/PHYS 213
3	History Without Borders/LHST 111	3	Introduction to Psych/PSYC 111
		3	Literature Series/LENG*
17		18	
JUNIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Organic Chemistry III/CHEM 323	3	Genetics/BIOL 345
1	Organic Chemistry III Lab/CHEM 324	3	Physical Chemistry II/CHEM 334
3	Structural Biochemistry/CHEM 366	1	Physical Chemistry II Lab/CHEM 335
3	Physical Chemistry I/CHEM 331	3	Modern Analytical Chemistry / CHEM 336
1	Physical Chemistry I Lab/CHEM 332	2	Modern Analytical Chemistry Lab / CHEM 337
3	Philosophy II Series/LPHI*	1	Chemical Literature/CHEM 356
3	Theology II Series/LTHE*	3	Theology III Series/LTHE 227 <b>or</b> Philosophy III Series/LPHI 237
		1	Leadership Seminar
17		17	
SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3-4	Biology Electives**	3-4	Biology Electives**
1	Undergrad Research/CHEM 380-383	1	Undergrad Research/CHEM 380-383
7	Chemistry Electives*	4	Chemistry Electives*
3	Fine Arts Series/LFIN*	3	Public Speaking/SPCH 111
		3	Senior Seminar/LBST 383
14-15		14-15	

\*Please refer to the Undergraduate Catalog for course options.

\*\*The following upper-level science coursework is recommended (those highly recommended are shown in **bold**): Ecosystem Biology and Evolution (BIOL 126/127); Vertebrate Embryology (BIOL 307/308); Histology (BIOL 320/321); **Microbiology (BIOL 331/332)**; Immunology (BIOL 338/339); Virology (BIOL 334); Parasitology (BIOL 354/355); Endocrinology (BIOL 363); **Human Gross Anatomy (BIOL 365/366)**; Cellular Biochemistry (BIOL 373/374) and Cell Biology (BIOL 375/376); please consult with your advisor.

†The student may pursue another approved program that allows the student to acquire all prerequisite coursework prior to anticipated RUSVM matriculation; please consult with the Pre-Health Advising Program Director to prepare an academic schedule.

**Total Credits to be Completed at Gannon: 130-132**

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# PRE-HEALTH QUALIFICATION

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Gannon University offers a preparatory program for graduates with a B.A or B.S. in which students can return to school to complete the required coursework needed to enter health professional schools (i.e. chiropractic medicine, dental medicine, medicine, optometry, pharmacy, podiatric medicine, and veterinary medicine).

## GU Entry Requirements

- Baccalaureate degree from an accredited university or college
- Cumulative GPA of 3.0 or higher on a 4.0 scale in undergraduate biology, chemistry, physics, and mathematics courses
- Evidence of academic and personal potential, and a desire to enter one of the health professions mentioned above

This program may be completed with a part-time or full-time status and can be completed in two years. Students may transfer up to 12 credits toward the program, but must complete at least 23 credits at Gannon University to complete the program. Science courses must be taken in sequence (see prerequisites for each course). This preparatory program is intended for individuals who lack all or most of the prerequisite coursework needed to apply to professional school. It is not intended for those seeking to improve their scores in undergraduate prerequisite coursework or seeking to take additional upper-level coursework in the sciences.

At the time of application to professional school, eligible students who have obtained a GPA of 3.0 or higher in the program coursework will receive a committee letter of recommendation from the Director of the Pre-Health Advising Program at Gannon University.

Further information and career counseling are available from the Director.

## Curriculum

CHEMISTRY		BIOLOGY	
3	General Chemistry I/CHEM 111	3	Molecular and Cellular Biology /
1	General Chemistry Lab I/CHEM 112		BIOL 122
3	General Chemistry II/CHEM 114	1	Molecular and Cell. Biology Lab/
1	General Chemistry II Lab/CHEM 115		BIOL 123
3	Organic Chemistry I/CHEM 221	3	Animal Form and Function/BIOL 124
1	Organic Chemistry I Lab/CHEM 222	1	Animal Form and Function Lab/
3	Organic Chemistry II/CHEM 224		BIOL 125
1	Organic Chemistry II Lab/CHEM 225	—	
3	Structural Biochemistry/CHEM 366†	8	
—			
16			
ADDITIONAL**		PHYSICS*	
3	PSYC 111 Intro to Psychology or	3	College Physics 1/PHYS 105
	SOCI 110 Basic Sociology	1	College Physics 1 Lab/PHYS 106
—		3	College Physics 2/PHYS 108
3		1	College Physics 2 Lab/PHYS 109
—		8	

\*PHYS 210, 211, 212, or 213 may be taken instead.

\*\*Students preparing to take the MCAT are also encouraged to take Basic Sociology (SOCI 110) this semester.

†Required for pre-medical students only.

Please note: Some courses are only offered during specific semesters throughout the academic year. Please check the course descriptions for details.

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## PUBLIC HEALTH

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### Aims and Objectives:

The Bachelor of Science degree with a major in Public Health is designed for students seeking a health-related major that is more broadly-based than the focused, existing majors within the University. The major combines a foundation in health-related courses, sciences, humanities, and social sciences with a breadth of courses within one or more departments in the University. In addition to the major requirements, which represent the health and science focus of the college, students will select a concentration track that will build on students' personal and career goals and interests. There are three concentration tracks:

- 1) science,
- 2) health care with management, and
- 3) health education/communication.

This major is ideal for students who may envision working in a variety of settings within the health services arena during their professional careers. A major in Public Health will open doors to entry-level positions in a wide variety of health-related agencies, medical centers, long-term care facilities, assisted living facilities, private and public health organizations, as well as local, state, and federal health departments. In addition, the program is appropriate for students interested in graduate study in a variety of health-related fields, such as graduate programs in health sciences/public health.

The Bachelor of Science degree in Public Health: science option is designed for students who desire a broad, strong foundation in the core sciences that also incorporates health-related courses. Students in this track may use elective credits to complete requirements for pre-health professional programs or to prepare to enter graduate programs in health sciences/ public health that require a strong science focus. Students should show an interest in science and how developments therein can help address some of the world's most complex health issues.

The Bachelor of Science degree in Public Health: health care with management option is designed for students who want to focus their efforts on the business/management side of health care. This track is desirable for students who want to move into staff and administrative positions within the health care industry or to continue with graduate education within business or management.

The Bachelor of Science degree in Public Health: health education/communication option prepares students to pursue careers as health educators. Health educators are professionals who design, conduct, and evaluate activities that help improve the health of all people. These activities can take place in a variety of settings: schools, communities, health care facilities, businesses and colleges. Graduates may also pursue graduate education in health education/communication.

### Admission Requirements:

The minimum requirements to be considered for acceptance into the Bachelor of Science, Public Health major include:

1. Overall GPA of 3.0 or better (high school or college if transfer student)
2. SAT scores of 950 or more (or comparable ACT)
3. Four years/courses of science and math at the high school level

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## COURSE DESCRIPTIONS

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### **PUBH 300 Public Health**

This course introduces the study of community and society health as a whole. It explores factors that maintain good health and factors that can be influenced to promote health and prevent disease. The population health approach is discussed throughout the course as well as factors such as individual medical care, community wide health projects, laws, and other influences.

Prerequisite: at least junior status within the Public Health major

*3 credits, Fall*

### **PUBH 310 Epidemiology for Public Health**

This course will examine basic concepts of epidemiology as the study of patterns, causes and effect of health and disease in populations, and its influence on public health policy. Students will be introduced to the history, basic concepts, and methods of epidemiology as related to public health. The social, behavioral and cultural factors that influence public health will be explored.

Prerequisite: PUBH 300

*3 credits, Spring*

### **PUBH 400 Global Health**

This course will introduce students to the key concepts and issues related to global health. The impact of globalization on the patterns of disease and effective control methods will be emphasized. The effect of social, economic and cultural factors on global health issues will be introduced.

Prerequisite: PUBH 300

*3 credits, Fall*

## **Public Health**

### **Science Track**

#### **FRESHMAN**

##### **Semester I (15)**

- \_\_\_\_\_ LENG 111 College Composition (3)
- \_\_\_\_\_ First Year Seminar (2)
- \_\_\_\_\_ CIS 170 Series or CIS 150 (3)
- \_\_\_\_\_ MATH 111 College Algebra (3)
- \_\_\_\_\_ BIOL122/123 Mol/Cellular Bio (4)

##### **Semester II (16)**

- \_\_\_\_\_ LENG 112 Critical Analysis & Composition (3)
- \_\_\_\_\_ LTHE 121 Sacred Scriptures (3)
- \_\_\_\_\_ PSYC 111 Intro. to Psychology (3)
- \_\_\_\_\_ MATH 112 Trigonometry (3)
- \_\_\_\_\_ BIOL124/125 Animal form/Function (4)

#### **SOPHOMORE**

##### **Semester III (17)**

- \_\_\_\_\_ LPHI 131 Intro. to Philosophy (3)
- \_\_\_\_\_ SOCI 110 Basic Sociology (3)
- \_\_\_\_\_ PHYS 105/106 Gen Physics 1 (4)
- \_\_\_\_\_ CHEM111/112 Gen Chem I (4)
- \_\_\_\_\_ LTHE Theology II Series (3)

##### **Semester IV (18)**

- \_\_\_\_\_ LPHI Philosophy II Series (3)
- \_\_\_\_\_ SPCH 111 Public Speaking (3)
- \_\_\_\_\_ PHYS 108/109 Gen Physics 2 (4)
- \_\_\_\_\_ BIOL126/127 Ecosystem Biology and Evolution (4)
- \_\_\_\_\_ CHEM114/115 Gen Chem II (4)

#### **JUNIOR**

##### **Semester V (17)**

- \_\_\_\_\_ CHEM 221/222 Organic Chem I (4)
- \_\_\_\_\_ PUBH 300 Public Health (3)
- \_\_\_\_\_ LHST 111 History without Borders (3)
- \_\_\_\_\_ PSYC 222 Psychology of Human Development (3)
- \_\_\_\_\_ Science Elective (4)

##### **Semester VI (18)**

- \_\_\_\_\_ PSYC 211 Psychological Statistics (3)
- \_\_\_\_\_ CHEM 224/225 Organic Chem II (4)
- \_\_\_\_\_ LTHE 227 or LPHI 237 Theo/Phil III Series (3)
- \_\_\_\_\_ Leadership Seminar (1)
- \_\_\_\_\_ Science Elective (4)
- \_\_\_\_\_ PUBH 310 Epidemiology for Public Health (3)

**SENIOR**

<b>Semester VII</b>	<b>(15)</b>	<b>Semester VIII</b>	<b>(12)</b>
_____ General Elective	(3)	_____ LBST 383 Senior Seminar	(3)
_____ Science Elective	(3)	_____ CHEM 366 Structural Biochem	(3)
_____ PUBH 400 Global Health	(3)	_____ Research/Internship* or Science	
_____ LFIN Fine Arts Series	(3)	_____ Elective	(6)
_____ LENG Literature Series	(3)		

\* may be any department as approved by the advisor; students that do not take internship will have to fill with science elective to meet credit requirement

Science Elective may be any BIOL; MATH; or CHEM (200-level or above)

**Public Health****Management Track****FRESHMAN**

<b>Semester I</b>	<b>(18)</b>	<b>Semester II</b>	<b>(16)</b>
_____ LENG 111 College Composition	(3)	_____ LENG 112 Crit Anal & Comp	(3)
_____ First Year Seminar	(2)	_____ LTHE 121 Sacred Scriptures	(3)
_____ CIS 150	(3)	_____ BCOR 111 Prin of Microeconomics	(3)
_____ PSYC 111 Intro. to Psychology	(3)	_____ BCOR 105 Fond of Bus Enterprise	(3)
_____ BIOL 122/123 Mol/Cellular Bio	(4)	_____ BIOL 124/125 Animal form/	
_____ SOCI 110 Basic Sociology	(3)	_____ Function and lab	(4)

**SOPHOMORE**

<b>Semester III</b>	<b>(16)</b>	<b>Semester IV</b>	<b>(16)</b>
_____ PSYC 211 Psyc Stats	(3)	_____ BCOR 240 Mktg in Global Envir	(3)
_____ PSYC 222 Psy. of Human Develop	(3)	_____ MATH 115 Calculus for Business	(3)
_____ BCOR 112 Princ. of Macroeconomics	(3)	_____ LTHE Theology II Series*	(3)
_____ CHEM 111/112 Gen Chem I	(4)	_____ BCOR 250 Mgmt Theory and Prac.	(3)
_____ LPHI 131 Intro. to Philosophy	(3)	_____ CHEM 114/115 Gen Chem II and	
		_____ lab	(4)

**JUNIOR**

<b>Semester V</b>	<b>(18)</b>	<b>Semester VI</b>	<b>(16)</b>
_____ LPHI Philosophy II Series	(3)	_____ LFIN Fine Arts Series	(3)
_____ PUBH 300 Public Health	(3)	_____ SPCH 111 Public Speaking	(3)
_____ BIOL 126 Ecosystem Biology and		_____ PUBH 310 Epidemiology for Public	
_____ Evolution	(3)	_____ Health	(3)
_____ General Elective	(3)	_____ General Elective	(3)
_____ MGMT 330 Project Management	(3)	_____ LTHE 227 or LPHI 237 Theo/Phil III	
_____ ACCT 101 Intro to Accounting*	(3)	_____ Series	(3)
		_____ Leadership Seminar	(1)

**SENIOR**

<b>Semester VII</b>	<b>(15)</b>	<b>Semester VIII</b>	<b>(13)</b>
_____ MGMT350 Quality Management	(3)	_____ LBST 383 Senior Seminar	(3)
_____ General Elective	(3)	_____ Management/Business Elective	(3)
_____ Management/Business Elective	(3)	_____ LHST 111 History without Borders	(3)
_____ LENG Literature Series	(3)	_____ Research/Internship	(3)
_____ PUBH 400 Global Health	(3)	_____ General Elective	(4)

\*ACCT101 is needed for a business minor

## Public Health

### Health Educator/Communication Track

#### FRESHMAN

Semester I	(15)	Semester II	(16)
____ LENG 111 College Composition	(3)	____ LENG 112 Critical Analysis & Composition(3)	
____ First Year Seminar	(2)	____ LTHE 121 Sacred Scriptures	(3)
____ CIS 170 Series or CIS 150	(3)	____ PSYC 111 Intro. to Psychology	(3)
____ SPCH 111 Public Speaking	(3)	____ LPHI 131 Intro. to Philosophy	(3)
____ BIOL 122/123 Mol/Cellular Bio	(4)	____ BIOL 124/125 Animal form/Function	(4)

#### SOPHOMORE

Semester III	(16)	Semester IV	(16)
____ SCWK 315 Biomedical Aspects of Aging	(3)	____ LPHI Philosophy II Series	(3)
____ PSYC 222 Psy. of Human Develop	(3)	____ LHST 111 History without Borders	(3)
____ LENG Literature Series	(3)	____ LTHE Theology II Series*	(3)
____ CHEM 111/112 Gen Chem I	(4)	____ BCOR 231 Bus and Prof Comm or ENGL 212	(3)
____ SOCI 110 Basic Sociology	(3)	____ CHEM 114/115 Gen Chem II	(4)

#### JUNIOR

Semester V	(18)	Semester VI	(17)
____ LFIN Fine Arts Series	(3)	____ BIOL 191 Comm Hlth Coaches	(2)
____ PUBH 300 Public Health	(3)	____ PSYCH 234 Health Psychology	(3)
____ Communication Elective	(3)	____ PUBH 310 Epidemiology for Public Health	(3)
____ SCWK 230 Human Diversity	(3)	____ BIOL126 Ecosystem Biology and Evolution	(3)
____ PSYC 211 Psych Stats	(3)	____ Communication Elective	(3)
____ General Elective	(3)	____ General Elective	(3)

#### SENIOR

Semester VII	(16)	Semester VIII	(15)
____ LTHE 227 or LPHI 237 Theo/Phil III Series	(3)	____ LBST 383 Senior Seminar	(3)
____ Leadership Seminar	(1)	____ Communication Elective	(3)
____ Communication Elective	(3)	____ Communication Elective	(3)
____ SCWK 221 Human Behavior & the Social Environment 1	(3)	____ SCWK 222 Human Behavior and the Social Environment 2	(3)
____ PUBH 418 Internship	(3)	____ General Elective	(3)
____ PUBH 400 Global Health	(3)		

Communication Electives: students should plan electives with prerequisites in mind.

SPCH 225 Philosophy of Communication

SPCH 235 Interpersonal Communication

SPCH 313 Intercultural Communication

SPCH 314 Persuasion

PSYC 225 Social Psychology

PSYC 306 Psychology of Communication

PSYC 305 Learning and Cognition

EDCR 101 Psychology of Teaching and Learning

EDCR 102 Instructional Technology



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## RADIOLOGIC SCIENCES

### ASSOCIATE DEGREE

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SUZANNE STURDIVANT, M.Ed., RT(R), (CT), (M), *Program Director*

FACULTY: Ronald G. Cuzzola, Cynthia Liotta.

Practitioners in radiologic sciences are highly skilled professionals qualified by education to provide radiographic images of the human body to aid in the diagnosis of disease or injury. This requires development of cognitive abilities, technological skill, effective communication and interpersonal qualities that will assist the individual in this process.

The Radiologic Sciences Program, fully accredited by the Joint Review Committee on Education in Radiologic Technology, is 24 months in length. The first year is primarily didactic, with emphasis on required academic courses and introductory courses in radiologic sciences, including a clinical rotation. The professional component, which is 15 months in length, combines extensive clinical rotations with professional coursework. Clinical competency is verified through faculty assessment of student's skill level in actual performance of radiologic examinations. Students enrolled in the program must maintain a grade point average of 2.5. All Radiologic Sciences courses and required Anatomy and Physiology courses must be completed with a C or better to continue to the next sequenced professional course.

The Associate Degree fulfills all the eligibility requirements for the national certification exam administered by the American Registry of Radiologic Technologists. Upon certification, graduates may find employment in hospitals, outpatient imaging centers and physician offices. With additional education and training, the following career paths can be pursued: computed tomography (CT), magnetic resonance imaging (MRI), mammography, cardiovascular imaging, interventional imaging, management, and education.

Prospective students should be aware that in order to successfully complete this program they will be required to perform certain physical functions in course work and/or clinical education. The following standards describe the physical abilities necessary to complete the program.

#### **Physical Standards:**

1. Lift, assist and maneuver patients in wheelchairs, on stretchers and imaging tables (weight can vary from 20 lbs. to greater than 100 lbs.)
2. Manipulate, lift, move and push heavy equipment (Must be able to extend arms overhead and forward).
3. To insure patient safety, hear faint sounds from a distance of 15 feet, as control panels & exposure switches are located in rooms or paneled areas separate from the xray table on which patients are placed.
4. Hear verbal directions/requests from physicians, patients, etc; faint audible signals such as low sounding buzzers and bells to determine and recognize malfunctioning equipment.
5. See requisitions/computer screens for medical information pertaining to radiographic exams, proper equipment manipulation, proper positioning and image evaluation of exams.
6. Manual dexterity, good motor skills, eye-hand coordination skills & sensory function to perform skills such as taking a pulse, assisting with sterile procedures, manipulating equipment, etc.
7. Cognitive ability to perceive and deal appropriately with environment threats and stress and continue to function safely and effectively during periods of high stress.
8. Exhibit social skills necessary to interact effectively with patients, families, supervisors, co-workers and physicians of the same or different cultures.

9. Intellectual and emotional skills to exercise discretion in handling confidential medical information.
10. Prioritize multiple tasks.
11. Maintain personal hygiene.
12. Must be of sufficient health to meet the criteria of clinical affiliates.

## **COURSE DESCRIPTIONS:**

**All RADS courses must be taken in the order listed in the curriculum. Clinical education includes clinical sites outside of Erie. Students are responsible for transportation to and from clinical sites.**

### **RADS 101: Introduction to Radiologic Sciences**

This course provides an introduction to medical terminology, which will weave throughout the course to provide the student with the basic principles needed to learn medical vocabulary. Topics covered include the history of medical imaging, pharmacology, basic positions, projections and body movement as related to health care and particular to radiology. Content will also include communication, cultural diversity, and the pediatric, geriatric and terminal patients. The course also introduces professional organizations, ASRT/ARRT, and their code of ethics. There is also a service learning component relating to communication and cultural diversity. *3 credits, Fall*

### **RADS 117: Clinical Radiography 1**

This course will introduce the student to a simulated clinical setting through application of patient care skills and manipulation of standard radiologic equipment. Students will also be introduced to the basic theory and manipulation of the control panel including mA, mAs, back-up mAs, kVp, focal spot, manual technique and automatic exposure control (AEC). Students will learn and apply simple techniques and basic principles in patient care that will include body mechanics, patient transfer techniques, vital signs, oxygen administration, infection control and standard precautions, medical and sterile procedures, isolation techniques, assisting with tubes and catheters, skin and cast care and medical emergencies and how they are specifically related to the Radiology department. This course also provides an introduction to medical terminology, which will weave throughout the course to provide the student with the basic principles needed to learn medical terminology. *1 credit, Fall*

### **RADS 118: Radiographic Exposure and Processing**

This course provides the student with the knowledge base involving the acquisition of radiographic images as well as the essential qualities of a radiographic image. The problem-solving methods used by the radiographer that may affect radiographic quality are also studied. Prerequisites: RADS 101, 117, 120, 204, 205, BIOL 108, 109, 110, 111 *3 credits, Fall*

### **RADS 119: Radiographic Exposure and Processing Lab**

An analysis of radiographic image quality will be studied through lab activities, image evaluation and critical thinking methodologies. Demonstrating the effect of various exposure principles and techniques are incorporated into the analytical process. Prerequisites: RADS 101, 117, 120, 204, 205, BIOL 108, 109, 110, 111 *1 credit, Fall*

### **RADS 120: Clinical Radiography 2**

Sequential to RADS 117 Clinical Radiography 1. Focus on radiation safety, the legal aspects of healthcare including HIPAA and informed consent, and the accurate documentation of clinical histories which will be covered prior to assigned clinical rotations. During clinical rotations students should observe, assess and perform under direct observation, the practices of manipulating radiographic equipment, patient communication, infection control, body mechanics, transfer techniques, radiation safety, clinical histories and patient confidentiality. Prerequisites: RADS 101, 117 *1 credit, Spring*

**RADS 204: Radiographic Positioning & Procedures 1**

This course will require the student to implement previously learned positioning terminology and techniques used in radiography from RADS 101 and RADS 117, for utilization of proper positioning to ensure high quality images. The course will focus on correlated anatomy, positioning and image critique of the upper and lower extremities, abdomen and chest; as well as an introduction to the digestive and urinary systems.

Prerequisites: RADS 101, 117, BIOL 108, 109

*3 credits, Spring*

**RADS 205: Radiographic Positioning & Procedures Lab 1**

This is a "hands on" course for radiographic positioning of the upper and lower extremities, abdomen and chest. Image evaluation and anatomical correlation are integrated into proper positioning procedures and image critique.

Prerequisites: RADS 101, 117, BIOL 108, 109

*1 credit, Spring*

**RADS 206: Clinical Radiography 3**

This course is sequential to RADS 120 and is designed to develop performance skills necessary for competency exams through directly supervised clinical experience. The student will start to integrate the principles and theories learned in the classroom into the clinical setting. This will include aspects of the methodology of a radiographic procedure including but not limited to the RIS/HIS system, patient care, control panel set-up (manual/AEC), room set-up, patient transfer, radiation protection, patient positioning, image evaluation, and patient discharge. Required competencies must be completed by the end of summer.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*4 credits, Summer*

**RADS 214: Radiographic Positioning and Procedures 2**

Continuation of radiographic studies including urinary system, digestive system, proximal humerus and shoulder girdle, pelvis, hip and femur and vertebral column.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*3 credits, Summer*

**RADS 215: Radiographic Positioning Lab 2**

This is a "hands on" course for the radiographic positioning of the body parts and systems covered in RADS 214. Image evaluation and laboratory exposures on the phantom are performed to correlate the anatomy studied. Simulated competencies and proficiencies are also completed. The student will continue to set appropriate control panel techniques (manual/AEC) for specific procedures and projections. The student will make control panel adjustments based on their findings (exposure criteria) from specific image critiques.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*1 credit, Summer*

**RADS 216: Clinical Radiography 4**

This course is sequential to RADS 206. It consists of directly or indirectly supervised clinical experience as appropriate to the student's level of competency. Students prepare for competency in more complex examinations as well as work independently in areas of completed competency. The student will continue to integrate the principles and theories learned in the classroom into the clinical setting. This will include aspects of the methodology of a radiographic procedure including but not limited to the RIS/HIS system, patient care, control panel set-up (manual/AEC), room set-up, patient transfer, radiation protection, image evaluation, correctly applying the theories and principles of digital imaging, and patient discharge. Required competencies must be completed by the end of the semester.

Prerequisite: All previous RADS courses; BIOL 108, 109, 110, 111

*4 credits, Fall*

**RADS 218: Advanced Exposure**

This course will focus on digital image acquisition and display to include components, principles and operation of digital imaging systems. Principles of quality assurance and maintenance of digital imaging systems will be presented.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*2 credits, Spring*

**RADS 219: Imaging and Equipment**

This course covers atomic structure, electricity, xray equipment and circuitry, and image intensification.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*2 credits, Summer*

**RADS 224: Radiographic Positioning and Procedures 3**

This course offers an indepth study of the bony thorax, biliary system, skull, facial bones, and sinuses. Also included are the arthrography, reproductive system, specialty exams, and an introduction to the cardiovascular system, central nervous system, and sectional anatomy.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*3 credits, Spring*

**RADS 225: Radiographic Positioning and Procedures Lab 3**

This is a "hands on" course for radiographic positioning of the skull, facial bones, sinuses, bony thorax and biliary system. Radiographic exposures on the phantom are correlated with image evaluation and radiographic anatomy. A component strictly related to the identification of anatomy of the cardiovascular system and central nervous system anatomy using MRI and CT images is also included.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*1 credit, Spring*

**RADS 226: Clinical Radiography 5**

This course is sequential to RADS 216. It consists of direct or indirect supervised clinical experience as appropriate to the student's level of competency. Students prepare for competency in more complex examinations as well as work independently in areas of completed competencies. The student will continue to work toward a higher level of proficiency for all areas of methodology of a radiographic procedure including but not limited to the RIS/HIS system, patient care, control panel set-up, room set-up, patient transfer, radiation protection, image evaluation, correctly applying the theories and principles of digital imaging, and patient discharge. Required competencies must be completed by the end of the semester.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*3 credits, Spring*

**RADS 252: Radiation Biology**

This course is divided into two parts. The first part deals with the types of ionizing radiation and their effects at the atomic, molecular and cellular levels. Genetic and somatic effects as related to acute and chronic doses of radiation are also discussed. The second part concentrates on medical diagnostic radiation – sources, exposure, dose limits, detection & measurement, design of equipment and rooms for maximum protection and reduction of dose.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*2 credits, Spring*

**RADS 271: Introduction to Radiographic Pathology**

A study of the common pathologies seen radiographically. This course integrates the student's previous clinical experience and classwork with specific pathophysiology within the body systems. It is designed to offer the learner basic foundations of disease or injury, including clinical, pathological, and radiographic manifestations.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*1 credit, Spring*

**RADS 285: Professional Seminar**

This course will assist the student in the development of an additional knowledge base to broaden the student's understanding of total patient care. Venipuncture and basic electrocardiography will be covered.

Prerequisite: All previous RADS courses; BIOL 108, 109, 110, 111

*1 credit, Summer*

**RADS 286: Clinical Radiography 6**

This course is sequential to RADS 226. It consists of indirectly supervised clinical experience in all areas of completed competency. Students focus on developing efficiency and proficiency in their clinical skills. Electives to CT, MRI, sonography, cardiac and interventional procedures, nuclear imaging or radiation therapy may be arranged. Terminal competency must be completed by the end of summer.

Prerequisites: All previous RADS courses; BIOL 108, 109, 110, 111

*4 credits, Summer*

**RADS 441: Introduction to Radiology**

This course is designed to introduce the Physician Assistant student to radiologic imaging procedures. The focus of the class will include technical, anatomical and pathologic considerations. 3 credits, Fall

**RADS 495: Special Topics**

Special topics courses are developed by faculty around a specific area of interest. Objectives may be defined by faculty or mutually identified by students and faculty. 1-3 credits, Fall or Spring

**Associate Degree Curriculum**

(Numerals in front of courses indicate credits)

FALL I		SPRING I	
4	Anatomy & Physiology I with Lab/ BIOL 108, 109	4	Anatomy & Physiology II with Lab/ BIOL 110, 111
3	College Composition/LENG 111	3	Sacred Scripture/LTHE 121
3	Intro Radiologic Science/RADS 101	3	Introduction to Philosophy/LPHI 131
1	Clinical Radiography 1/RADS 117	4	Rad Posit/Proc 1 with Lab/ RADS 204, 205
2	PC Applications/CIS 170-173 <u>or</u> CIS 150	3	Intro to Psychology I/PSYC 111
2	First-Year Seminar	1	Clinical Radiography 2/RADS 120
1	Introduction to Speech/SPCH 101		
<u>17</u>		<u>18</u>	
*SUMMER I		*FALL II	
4	Rad Posit/Proc 2 with Lab/ RADS 214, 215	4	Rad Exposure with Lab/ RADS 118, 119
2	Imaging and Equipment/RADS 219	4	Clinical Radiography 4/RADS 216
4	Clinical Radiography 3/RADS 206		
<u>10</u>		<u>8</u>	
**SPRING II		**SUMMER II	
4	Rad Posit/Proc 3 with Lab/ RADS 224, 225	1	Special Topics/RADS 285
2	Advanced Exposure/RADS 218	4	Clinical Radiography/RADS 286
2	Radiation Biology/RADS 252		
1	Intro to Rad Pathology/RADS 271		
3	Clinical Radiography 5/RADS 226		
<u>12</u>		<u>5</u>	

Total Credits: 70

This curriculum indicates that students will be required to attend summer sessions as part of the Radiologic Sciences Program.

*\*Students are advised that the courses taken in the Summer I and Fall II semesters will be combined for the purposes of billing and grading. Students will receive their bill for the Summer I and Fall II semester at the regular Fall billing time. Grades will be sent out at the completion of each of the four semesters. Students are advised that the Summer I and Spring II grade reports will contain "\*" grades for the Fall II and Summer II semesters.*

*\*\*Students are advised that the courses taken in the Spring II and Summer II semesters will be combined for the purposes of billing and grading. Students will receive their bill for the Spring II and Summer II semesters at the regular Spring billing time. Grades will be sent out at the completion of each of the four semesters. Students are advised that the Summer I and Spring II grade reports will contain "\*" grades for the Spring II semesters.*

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## RESPIRATORY CARE

### ASSOCIATE/BACCALAUREATE

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MICHELLE MOORE, M.Ed., RRT-NPS, *Program Director*

FACULTY: *Assistant Professors:* Michelle Moore, Robert D. Tarkowski

You can live without food for a few weeks. You can live without water for a few days. But, if you are deprived of air, you will die within minutes. In terms of survival, breathing is your most immediate need.

Respiratory care practitioners are specialists who evaluate, treat, and care for patients with breathing disorders. Practitioners work under the direction of a physician and assist in the diagnosis, treatment, and management of patients with respiratory disorders.

The need for respiratory care practitioners is expected to grow faster than the national average for all job growth. The respiratory care profession has a bright future with a great deal of job security and opportunity for advancement. Once you enter the profession, you may want to specialize in an area such as neonatal care, cardiopulmonary diagnostics, helicopter transport, patient education, management, or homecare.

The Respiratory Care Program offers both an Associate and Bachelor degree in Science. Both degrees qualify the student to become a Registered Respiratory Therapist. The two-year degree provides the student with an excellent foundation in Respiratory Care. The four-year degree is designed for those individuals who wish to be leaders in the field. The Bachelor degree curriculum includes additional education in the adult critical care environment and offers specialization in an area of the student choice.

Students enrolled in the program must maintain a grade point average of 2.5 in the sciences and overall in the pre-professional courses. Only those students having the 2.5 grade point average or higher in the pre-professional courses will advance to the professional phase of the program. All courses denoted by the RSPC symbol must be passed with a "C" grade or better to progress in the program. Admission prerequisites may be obtained by contacting the Admission's office.

The program is accredited by the Commission on Accreditation for Respiratory Care (CoARC).

[www.coarc.com](http://www.coarc.com)

1248 Harwood Road  
Bedford, TX 76021-4244  
814-283-2835

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### COURSE DESCRIPTIONS:

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All RSPC courses must be taken in the order listed in the curriculum. Clinical practicums may include clinical sites outside of Erie. Clinical practicums include some evening rotations.

#### **RSPC 201: Introduction to Respiratory Care**

This introductory course will inform the student about the history of medicine and the profession of respiratory care. Additional topics will include communication in health care, medical terminology and an introduction to computers. Students will be given a basic foundation for respiratory care with topics in flow mechanics, and physical properties of gases. *3 credits, Spring*

#### **RSPC 301: Clinical Practicum I**

The student will perform respiratory care procedures on patients within the clinical setting. There will be an emphasis on operating and maintaining oxygen delivery devices.

Prerequisites: RSPC 308, 309

*2 credits, Fall*

**RSPC 302: Clinical Practicum II**

The student will provide respiratory care to patients in the adult intensive care unit setting. There will be an emphasis during this course on mechanical ventilation, and cardiopulmonary diagnostics.

Prerequisites: RSPC 321, 322

*4 credits, Spring*

**RSPC 303: Clinical Practicum III**

This clinical course involves a neonatal intensive care unit setting, pulmonary rehabilitation, and observation in the operating room. Rotations will also include continued skills in intensive and general respiratory care.

Prerequisites: RSPC 350, 385

*5 credits, Summer*

**RSPC 308: Respiratory Care Procedures:**

This course includes the study of medical gases from their storage to the devices used to administer them to the patient. The different therapeutic modalities used in respiratory care will be presented. The modalities include: Humidity Therapy, hyperinflation therapy, aerosol/pharmacologic therapy, intermittent positive pressure, chest percussion, bronchial drainage, and airway care.

Prerequisite: RSPC 201

Corequisite: RSPC 309

*4 credits, Summer*

**RSPC 309: Respiratory Care Procedures Lab**

This laboratory will allow the student to practice and experience topics covered in RSPC 308 and prior to actual clinical practice.

Corequisite: RSPC 308

*1 credit, Summer*

**RSPC 314: Cardiopulmonary Pathophysiology**

This integrated course will instruct the student in patient diagnostics and assessments. The course will also include an introduction to general pathophysiology with an emphasis on pathophysiology affecting the cardiopulmonary system.

Prerequisite: RSPC 317

*4 credits, Fall*

**RSPC 317: Cardiopulmonary and Renal Anatomy/Physiology**

This course is an advanced study of the pulmonary, cardiac and renal systems. An emphasis is placed on physiology of these systems.

*4 credits, Summer*

**RSPC 319: Pharmacology for the Respiratory Care Practitioner**

A study to introduce the student to the science of pharmacology, its terminology and administration. Emphasis will be on those agents primarily having an effect on the cardiopulmonary system. Also, antibiotics, steroids and other pharmacologic agents will be discussed.

*2 credits, Fall*

**RSPC 321: Mechanical Ventilation and Critical Care**

A study of mechanical ventilators, their operation and application in patient care will be presented. The course also includes applied critical care including monitoring techniques.

Prerequisites: RSPC 308, 309

Corequisites: RSPC 317, 322

*4 credits, Fall*

**RSPC 322: Mechanical Ventilation and Critical Care Lab**

Laboratory practice for topics covered in RSPC 321.

*1 credit, Fall*

**RSPC 350: Neonatal/Pediatric Respiratory Care**

This course will emphasize the diagnosis and care of the neonatal and pediatrics patients in the intensive care setting. Mechanical ventilation of the neonate will be stressed.

Prerequisite: RSPC 301, 321, 322

*3 credits, Spring*

**RSPC 385: Homecare/Cardiopulmonary Rehabilitation**

This course will include presentations and discussions of objectives, methods and expectations

of homecare and cardio/pulmonary rehabilitation. Current issues in pulmonary rehabilitation will be discussed. The course will present various community agencies that provide and assist with chronic health problems. Included will be issues in patient/family education.

Prerequisite: departmental consent

*2 credits, Spring*

#### **RSPC 390: Pulmonary Function Testing**

This course explores the use of various tests used to measure lung function with an emphasis on lung volume tests and spirometry evaluation. Some time will be spent in the laboratory and at the bedside utilizing equipment to measure lung mechanics.

*1 credit*

#### **RSPC 393: Special Topics in Respiratory Care**

This is an elective course. The course is developed by faculty around specific areas of interest. Outcomes may be developed by the faculty or mutually by student and faculty.

Prerequisite: Director permission

*3 credits*

#### **RSPC 404: Clinical Practicum IV**

This clinical will assist the student in synthesizing the skills learned throughout their course of study in the areas of intensive care unit, management, patient education and homecare.

Prerequisite: RSPC 303

*2-6 credits, Spring*

#### **RSPC 414: Advanced Cardiopulmonary Pathophysiology**

This course is a continuation of RSPC 314 with an expansion on chest radiography and hemodynamics.

Prerequisite: RSPC 301, 302, 303, 317

*3 credits, Spring*

#### **RSPC 421: Advanced Cardiopulmonary Assessment**

This course will be a continuation of the RSPC 321 course where advanced skills are taught in the area of Critical Care.

Prerequisite: RSPC 321

*3 credits, Spring*

#### **RSPC 426: Non-Invasive Cardiovascular Assessment**

The physiological basis of the electrocardiograph will be presented. All the major arrhythmias will be emphasized. At the end of the course the student will be able to perform a basic analysis of the twelve lead EKG. A brief overview of echocardiography will also be included.

Prerequisite: RSPC 301, 302, 303, 317

*2 credits, Fall*

#### **Polysomnography Certificate**

The Respiratory Care Program is now offering a certificate in Polysomnography. Students must be admitted to this certificate option. This would include Respiratory Care Bachelor's degree candidates or students holding an Associate of Science degree in Respiratory Care and eligible to take the Certified Respiratory Care practitioner exam (CRT).

#### **RSPC 361: Polysomnography Science I**

This course is designed to provide both didactic and laboratory training for entry-level personnel in the basics of Polysomnographic Technology. Students will become familiar with medical terminology, instrumentation setup and calibration, recording and monitoring techniques, documentation, professional issues, and patient-technologist interactions related to Polysomnographic Technology. Laboratory sessions will provide practical experience in the skills required of an entry-level Polysomnographic Technologist.

Corequisite: RSPC 362

*2 credits, Fall*

#### **RSPC 362: Polysomnography Clinical I**

This course is designed to provide clinical experience and training for entry-level personnel in the basics of Polysomnographic Technology. Students will become familiar with the sleep lab environment, instrumentation setup and calibration, recording and monitoring techniques, documentation, professional issues, and patient-technologist interactions related to Polysomnographic Technology.

Corequisite: RSPC 361

*2 credits, Fall*



**RSPC 363: Polysomnography Science II**

This course is designed to provide both didactic and laboratory training that will cover the skills and knowledge needed to obtain high quality sleep recordings and expands upon the topics covered in Polysomnography Science I. Students will become proficient in the in the technical and clinical aspects of Polysomnography, as well as the methodology used in the sleep laboratory. This course includes patient interaction and describes the capture of bio-electric activity, over-night recording techniques, the interpretation of and data presentation for the compilation of the final report.

Prerequisite: RSPC 361, 362

Corequisite: RSPC 364

2 credits, Spring

**RSPC 364: Polysomnography Clinical II**

This course is designed to provide clinical experience and training for advanced aspects of polysomnographic technology. Students will become familiar with practical aspects of therapeutic interventions, sleep scoring, equipment troubleshooting, and artifact recognition.

Prerequisite: RSPC 361, 362

Corequisite: RSPC 363

2 credits, Spring

**PRE-PROFESSIONAL**

**BACCALAUREATE DEGREE CURRICULUM**

FRESHMAN	
<i>First Semester</i>	
3	College Composition/LENG 111
3	Chem of Life I/CHEM 103
1	Chem of Life I Lab/CHEM 104
3	College Algebra/MATH 111, 112 or 114
3	History Without Borders/LHST 111
1	PC Applications/CIS 170-173
2	First-Year Seminar
16	
<i>Second Semester</i>	
3	Crit Analysis & Comp/LENG 112
3	Chem of Life II/CHEM 106
1	Chem of Life Lab II/CHEM 107
3	Sacred Scripture/LTHE 121
3	Concepts in Physics/PHYS 101
3	Intro Psychology/PSYC 111
16	
SOPHOMORE	
<i>First Semester</i>	
3	Anat & Physio/Biol 108
1	Anat & Physio Lab/Biol 109
2	PC Applications/CIS 170-173
3	Introduction to Philosophy/LPHI 131
3	Theology II Series/LTHE
3	Intro to Micro/Biol 106
1	Intro to Micro Lab/Biol 107
16	
<i>Second Semester</i>	
3	Literature Series I/LENG
3	Anat & Physio/Biol 110
1	Anat & Physio Lab/Biol 111
3	Intro to Resp Care/RSPC 201
3	Philosophy II Series/LPHI
3	Fine Arts Series/LFIN
1	Technical Communication/SPCH 110
17	

**PROFESSIONAL PHASE**

(A QPA of 2.5 in the Sciences and a QPA of 2.5 overall is required to continue.)

<i>Summer Semester</i>	
4	Respiratory Care Procedures/RSPC 308
1	Respiratory Care Procedures Lab/RSPC 309
4	Cardiopul/Renal A & P/RSPC 317
9	
JUNIOR	
<i>First Semester</i>	
2	Clinical I/RSPC 301
<i>Second Semester</i>	
3	Neonatal/Peds/RSPC 350

4	Mech Vent & Crit Care/RSPC 321	2	Homecare/Rehab/RSPC 385
1	Mech Vent & Crit Care Lab/RSPC 322	4	Clinical II/RSPC 302
4	Cardiopul Pathophysiology/RSPC 314	3	Theology or Phil III Series/LTHE or LPHI
2	Pharmacology for Resp Care/RSPC 319	3	Statistics/SOCI 351 or PSYC 211
1	Pulmonary Functions/RSPC 390	1	Leadership Seminar
<hr/>		<hr/>	
14		16	

*Summer Semester*

5	Clinical III/RSPC 303		
SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Senior Seminar/LBST 383	3	Advanced Pulmonary
3	Advanced Cardio Patho/RSPC 414		Assessment/RSPC 421
2	Non-Invasive Cardiovascular Assessment/RSPC 426	6	Clinical Practicum IV/RSPC 404
3	Professional Elective		
3	Research Methods/NURS 308		
<hr/>		<hr/>	
14		9	
37	Didactic Respiratory Credits		
17	Clinical Respiratory Credits		
3	Elective Credits		
MINIMUM TOTAL CREDITS:		131	

**OR**

**Polysomnography Option**

SENIOR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Senior Seminar/LBST 383	3	Advanced Pulmonary Assessment/RSPC 421
3	Advanced Cardio Patho/RSPC 414	2	Clinical Practicum IV/RSPC 404
2	Non-Invasive Cardiovascular Assessment/RSPC 426	2	Poly Science II/RSPC 363
2	Poly Science I/RPSC 361	2	Poly Science Clinical II/RSPC 364
2	Poly Science Clinical I/RSPC 362		
3	Research Methods/NURS 308		
<hr/>		<hr/>	
15		9	
40	Didactic Respiratory Credits		
18	Clinical Respiratory Credits		
MINIMUM TOTAL CREDITS:		132	

**ASSOCIATE DEGREE CURRICULUM**

**PRE-PROFESSIONAL PHASE**

FIRST YEAR			
<i>First Semester</i>		<i>Second Semester</i>	
3	Anat & Physio I/BIOL 108	3	College Composition/LENG 111
1	Anat & Physio I Lab/BIOL 109	2	First-Year Seminar
3	Chem of Life I/CHEM 103	3	Anat & Physio II/BIOL 110
1	Chem of Life Lab I/CHEM 104	1	Anat & Physio Lab II/BIOL 111
3	College Algebra/MATH 111, 112 or 114	3	Concepts in Physics/PHYS 101
3	Microbiology/BIOL 106	3	Intro to Resp Care/RSPC 201

1	Microbiology Lab/BIOL 107	1	Intro to Speech/SPCH 101
15		16	

PROFESSIONAL PHASE

(A QPA of 2.5 in the Sciences and a QPA of 2.5 overall is required to continue.)

Summer Semester			
4	Respiratory Care Procedures/RSPC 308		
1	Respiratory Care Procedures Lab/RSPC 309		
4	Cardiopul/Renal A & P/RSPC 317		
9			
SECOND YEAR			
First Semester		Second Semester	
2	Clinical I/RSPC 301	3	Intro Psychology/PSYC 111
4	Mech Vent & Crit Care/RSPC 321	3	Neonatal/Pediatrics/RSPC 350
1	Mech Vent & Crit Care Lab/RSPC 322	2	Homecare/Rehab/RSPC 385
4	Cardiopul Pathophysiology/RSPC 314	4	Clinical II/RSPC 302
2	Pharmacology for Resp/RSPC 319	3	Intro to Philosophy/LPHI 131
3	Sacred Scripture/LTHE 121		
1	Pulmonary Functions/RSPC 390		
17		15	
Summer Semester			
5	Clinical III/RSPC 303		
28	Didactic Respiratory Care Credits		
11	Clinical Respiratory Care Credits		

SCIENCE

STEVEN J. ROPSKI, Ph.D., Program Director

The Science curriculum is designed for those students who wish to get a broad background in the sciences. Students may choose a concentration from the fields of Biology, Chemistry, Environmental Science, Mathematics, or Physics. The curriculum may also serve the needs of students whose career objectives are not yet definite or for the student whose career objectives are defined but are not completely satisfied by the suggested departmental programs. Students cannot declare science as a major after attaining 100 credits in a previous major without director's permission.

The curriculum in Science allows for the completion of the Liberal Studies Core, 60 credit hours of studies in the sciences and mathematics, and twenty-nine credit hours of electives to devote toward the student's educational goal. The student must however earn a minimum of twenty-four credits in some one field of the sciences or mathematics and have a minimum of 8 credits in Biology, Chemistry, Physics, and six credits in Earth Science/Environmental Science and Math.

Suggested Science Curriculum

(Numerals in front of courses indicate credits)

FRESHMAN			
First Semester		Second Semester	
3	History Without Borders/LHST 111	3	Crit Analysis & Comp/LENG 112
3	College Comp/LENG 111	3	Sacred Scripture/LTHE 121

2	First-Year Seminar	8	Science Sequence
8	Science Sequence	3	Social Science
16		17	
	SOPHOMORE		
	<i>First Semester</i>		<i>Second Semester</i>
3	Introduction to Philosophy/LPHI 131	3	Theology or Phil III Series/ LTHE or LPHI
3	Literature Series/LENG	8	Science Sequence
3	Theology II Series/LTHE	3	Elective
8	Science Sequence	1	Leadership Seminar
17		15	
	JUNIOR		
	<i>First Semester</i>		<i>Second Semester</i>
3	Philosophy II Series/LPHI	3	LS elective
3	Fine Art Series/LFIN	3	Public Speaking/SPCH 111
6-8	Science Sequence	6	Science Sequence
3	Elective	6	Elective
15-17		18	
	SENIOR		
	<i>First Semester</i>		<i>Second Semester</i>
3	Senior Seminar/LBST 383	6-8	Science Sequence
6-8	Science Sequence	9	Elective
6	Elective		
15-17		15-17	

THE NEXT STEP

Baccalaureate Degree Program for Graduates of Two Year Colleges

Science

(Numerals in front of courses indicate credits)

	<i>Pre-Senior Year</i>		<i>Senior Year</i>
24	Science Sequence	27	Science Sequence
3	Introduction to Philosophy/LPHI 131	3	Senior Seminar/LBST 383
3	Sacred Scriptures/LTHE 121	3	Theology or Phil Series III/ LTHE or LPHI
3	Literature Series/LENG		Leadership Seminar
3	Fine Art Series/LFIN	1	
36		34	

Students will be permitted to take other courses in substitution for any course listed above which they have satisfactorily completed prior to admission into the Next Step program. Students are required to complete 7-19 credits in the Liberal Studies Core. Students may transfer courses equivalent to Sacred Scripture, Introduction to Philosophy, the Literature Series and/or the Fine Arts Series. Students must take the Leadership Seminar, the Theology/Philosophy III Series, and the Senior Seminar or approved capstone at Gannon.

The Science sequence must include a total of 60 credits of course work, of which at least 24 credits must be earned in one of the following fields:

Biology, Chemistry, Environmental Science, Mathematics, or Technical area.

Six credits of this total may be earned prior to admission to this program.

A minimum of eight credits must be taken in each of the science or math fields (excluding math and Environmental Science).

The Gannon University – Duquesne School of Law, 3+3 Early Admissions Program has been designed for qualified students to earn an undergraduate and a law degree in six years rather than seven. Under the early admissions program students may receive a *Bachelors Degree in specific majors after three years of undergraduate work and the successful completion of the first year of full time study at the Duquesne School of Law*. The student would then receive their Law Degree after successful completion of the second year at Duquesne School of Law. Qualified students may wish to pursue this option.

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## SPORT AND EXERCISE SCIENCE

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*Department Chair:* JASON P. WILLOW, Ph. D.

*FACULTY:* Associate Professor: Dawna T. Mughal; Assistant Professors: Tania Flink, Suzanne Kitts, Rebecca Mokris, JD Mosinski, Kory Stauffer, Debra Stroiney, Jason P. Willow. *Instructors:* Kathleen Williams, Susan Wehring.

The Sport and Exercise Science Department offers a Bachelor of Science degree through the Morosky College of Health Professions and Sciences. The program is designed to prepare students for employment and/or graduate training in many areas including, but not limited to, athletic training, exercise physiology, physical and occupational therapy, nutrition, health and wellness program administration, medicine and allied health professions, kinesiology, and exercise science. Students can use their skills in a variety of health and fitness positions, including becoming a research assistant, a health/fitness technician, a personal trainer, an athletic trainer or a fitness specialist. Additional employment opportunities may include becoming a strength and conditioning professional, an athletic coach, a physical activity project coordinator, entry level positions in pharmaceutical sales, or positions in corporate fitness. The department also prepares the student for possible certification by national governing bodies such as the American College of Sports Medicine and the National Strength and Conditioning Association, among others.

In general, students in the department take courses in the basic sciences (biology, chemistry and physics) during the first two years of the program, in addition to the humanities and social sciences (to satisfy the University's liberal arts requirements). During the final two years of study, majors take advanced sequences of courses in human anatomy, physiology, kinesiology, nutrition, exercise physiology, psychology of sport and exercise, motor development, learning and performance, and athletic injury care and prevention.

### **Admission into the Undergraduate program:**

Recommended standards for high school students for consideration for acceptance to the undergraduate Sport and Exercise Science Department include:

1. Overall high school GPA of 3.0 or higher.
2. SAT score of 1000 or higher or ACT score of 21 or higher.
3. Completion of college prep biology and chemistry with labs and three years of college prep mathematics.

### **Master of Science in Exercise Science Early Admission**

Highly qualified students may be eligible to earn early admission in the 36 credits Master of Science degree program in Sport and Exercise Science. Students meeting the following academic criteria will be eligible for early admission:

1. Overall high school GPA of 3.2 or higher.
2. SAT score of 1050 or higher (or ACT equivalent)

3. Completion of college prep biology and chemistry with labs and three years of college prep mathematics.

Students who enter the early admission program will be eligible to take graduate level classes during their senior year provided that they continue to meet minimum academic milestones of a 3.0 overall GPA and a 3.0 GPA in prerequisite coursework. For more information about the graduate program, please see our Graduate Catalogue.

#### **Master of Science in Athletic Training, 5-year program**

Students interested in the field of Athletic Training will find our accelerated 3+2 program to be particularly attractive. In this program, interested students are accepted into the Master of Athletic Training program as incoming freshmen and transition seamlessly, into graduate studies at the conclusion of the junior year provided that they achieve defined levels of proficiency in their prerequisite and general coursework.

1. Overall high school GPA of 3.0
2. SAT of 1000 (math and verbal) or ACT equivalent of 21
3. International students should achieve a minimum TOEFL score of 79 to be considered for full-time enrollment.

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### **SPORT AND EXERCISE SCIENCE COURSE DESCRIPTIONS**

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#### **SPRT 101: First Year Seminar in Sport and Exercise Science**

The First Year Seminar is a discussion/experience-based course to orient the new students to Gannon University, to introduce the Liberal Studies Core and LIFECORE, to assist in the transition from high school to university life and to encourage development of academic, personal and spiritual aspects of the student's life. Each seminar is unique, depending upon the instructor and/or program in which it is offered. SPRT 101 First Year Seminar in Sport and Exercise Science affords students the opportunity to explore and experience topics related to health and wellness. Topics include the importance of physical activity, healthy eating, stress and relaxation, social wellness, cultural experiences, and service. Students will also partake in classroom activities and discussion related to research and professionalism.

Lecture: Two hours per week

*2 credits, Spring*

#### **SPRT 109: Introduction to Golf**

This is an introductory course for beginner to intermediate golfers aimed at teaching not only basic swing dynamics but also the fundamental rules, language and etiquette of the game. This course will require an additional fee of \$175 per student which will account for busing, range access, course access and instructional fees at the teaching location.

Lecture/Activity: Five hours per week.

*2 credits, variable*

#### **SPRT 120: Foundations of Sport and Exercise Science**

This course will provide undergraduates with an introduction to the scientific disciplines of kinesiology, biomechanics, exercise physiology, sport psychology, nutrition and others. Course topics may include an introduction to various biomechanical aspects of physical activity and sport, functional human anatomy, and biomechanical principles that underlie performance of various sports and exercise-related activities, as well as a basic knowledge of exercise physiology as it relates to physical activity.

Lecture/Lab: One hour per week.

*1 credit, Fall*

#### **SPRT 130: Nutrition for Sport and Exercise**

This course is designed to introduce the concepts of proper nutrition with specific concentration given to the promotion and maintenance of optimal physical performance both at the elite as well as recreational levels. The course will discuss such topics as the role of

carbohydrates, protein and fat in exercise and sport; vitamin and mineral intake and exercise; the role of fluid intake and electrolytes in physical activity; nutrition and fitness assessment; ergogenic substances in sport and exercise and the myths of the fad diet craze.

Lecture: Three hours per week.

*3 credits, Spring*

### **SPRT 163: Comprehensive Fitness Training**

This is an introductory course for those interested in learning about comprehensive fitness training that includes strength, aerobic and nutritional considerations.

Lecture/Activity: Two hours per week

*2 credits, Both Terms*

### **SPRT 240: Sport Psychology: Theory and Application**

A comprehensive introduction to the psychological factors that relate to sports involvement and performance. Issues include psychological aspects of elite athlete's motivation and performance, intervention and performance enhancement, anxiety and skill performance.

Lecture: Three hours per week.

*3 credits, Fall*

### **SPRT 250: Psychosocial Aspects of Exercise and Physical Activity**

The primary objective of the class is to provide the student with a general overview of the reciprocal relationship between psychological parameters and exercise and health. Course topics include, but will not be limited to, exercise adherence, exercise promotion, the relationship between physical activity and depression, anxiety, positive well being, self-efficacy, cognitive functioning, distress, sleep disorders, mood, self-esteem, stress, and behavioral interventions for health promotion.

Lecture: Three hours per week.

*3 credits, Spring*

### **SPRT 310: Research Methods in Exercise Science**

An introduction to the research process to familiarize the student with basic statistical techniques in Exercise Science research both qualitative and quantitative in nature; to provide extensive writing experiences for students; to prepare students to complete the SPRT450 (Independent Study in Exercise Science) Senior Research Proposal/Project; to provide prerequisite coursework for entrance into graduate programs in school of the student's choosing.

Lecture: Three hours per week.

*3 credits, Fall*

### **SPRT 326: Physical Activity and Women**

This class will address a wide variety of topics unique to women in sport and physical activity. Topics may include the female athlete TRIAD, exercise and eating disorders, exercise and osteoporosis, and others.

Lecture: Three hours per week.

*3 credits, variable*

### **SPRT 340: Group Instruction and Fitness Management**

This course will allow the student to apply their current knowledge of exercise to a practical setting. The class will provide exercise science majors with the theoretical and practical knowledge of teaching a group exercise class. This course will also instruct on how to develop and manage fitness programs and exercise facilities.

Lecture: Three hours per week

*3 credits, Spring*

### **SPRT 360: Kinesiology**

Analysis of sport and human movement using both anatomical and biomechanical approaches. Application of the basic principles and laws of physics as applied to sport and physical activity will be presented. Recommended junior year.

Prerequisites: Take One Group (BIOL108/109 and BIOL110/111 or BIOL122/123 and BIOL124/125)

Lecture: Three hours per week.

*3 credits, Both Terms*

### **SPRT 361: Kinesiology Lab**

This course complements and enhances the Kinesiology lecture course.

Prerequisite: Concurrent enrollment in SPRT360 is recommended.

Lab: Three hours per week.

*1 credit, Both Terms*

**SPRT 390: Physiology of Exercise and Sport**

An examination of the physiological functions of man as they relate to stresses created by various sports and other physical activities. Acute and chronic effects of various training programs are examined for their contribution to the improvement of performance in sport and physical activity.

Prerequisites: Take One Group (BIOL108/109, BIOL110/111 or BIOL122/123, BIOL124/125)

Lecture: Three hours per week.

*3 credits, Both Terms*

**SPRT 391: Physiology of Exercise and Sport Lab**

The application of physiological principles to sport and physical activity, including adaptation responses to exercise. Both immediate and long-term adaptations are studied.

Prerequisite: Concurrent enrollment in SPRT 390 recommended.

Lab: Three hours per week.

*1 credit, Both Terms*

**SPRT 393: Disordered Eating in Athletics**

Students in the course will gain a comprehensive understanding of eating disorders in athletes. The course contains an overview of disordered eating among athletes including the psychopathology and etiology, an examination of the effects of disordered eating on the health and performance of athletes and finally, information regarding the identification, prevention, treatment and management of disordered eating in athletes.

Lecture/Lab: Two hours per week

*2 credits, Fall Odd Years*

**SPRT 395: Issues and Controversies in Sports Nutrition and Human Performance**

This senior level course is designed to review topics in sports nutrition and human performance and to discuss, in detail, current issues that face athletes and those who work with them. Students will also critically review current events related to sports nutrition and will also present scientific research on a variety of topics, such as the use of performance enhancing drugs, the relationship between current diet and fitness fads and sports performance, nutritional issues in weight-loss oriented sports.

Lecture/Lab: Two hours per week

*2 credits, Fall Even Years*

**SPRT 400: Fitness Assessment and Exercise Prescription**

The assessment and promotion of physical fitness including concepts and techniques of fitness testing, principles of weight training, aerobic exercise, nutrition, and stress management as applied to health and fitness settings. Emphasis on methods and protocols for screening, evaluating, and prescribing exercise.

Prerequisites: SPRT390/391

Lecture: Three hours per week.

*3 credits, Fall*

**SPRT 401: Fitness Assessment Lab**

This class will complement and enhance the Fitness Assessment and Exercise Prescription lecture course. The class will focus on the practical application of the assessment and promotion of physical fitness including concepts and techniques of flexibility and body composition assessment, strength and cardiovascular testing, principles of weight training, and aerobic exercise as applied to health and fitness settings.

Corequisite: Concurrent enrollment in SPRT400 required

Lab: Three hours per week.

*1 credit, Fall*

**SPRT 405: Exercise Biochemistry**

This course is designed to provide students with a comprehensive exposure to the effects of exercise on cellular metabolism and cell structure and function. The course begins with a refresher of biochemical concepts that the student was introduced to in previous coursework including metabolism, protein, carbohydrates and lipids, nucleic acids and gene expression. The course will then delve into such topics as neural control of movement and muscular contraction and the integration of exercise metabolism specifically related to the



macronutrients. Finally, students will receive training on how to assess the biochemical processes of people who exercise.

Prerequisites: SPRT130, SPRT390 required

Lecture/Lab: Three hours per week

*3 credits, Spring*

#### **SPRT 414: Motor Development Across the Lifespan**

This class will address a wide variety of topics within the field of motor development.

Specifically, the course will discuss motor development from conception through adulthood.

The class will incorporate dynamic systems theory with the hourglass model of the stages of motor development in explaining the process of human growth and associated skill proficiency development.

Lecture: Three hours per week.

*3 credits, Fall*

#### **SPRT 415: Principles of Motor Learning and Performance**

This course examines the many aspects of learning and executing motor skills. Teaching methodology, learning theories, neurophysiological phenomena, maturational and psychosocial factors are investigated as they relate to movement patterns in sport and physical activity.

Lecture: Three hours per week.

*3 credits, Spring*

#### **SPRT 416: Human Motor Control**

This course will be directed at studying the nature of movement and how that movement is controlled. Sample topics include such issues as the role of the central nervous system in the organization of movement, the role of sensory information and how the body uses this information to select and control movement, the best ways to study movement and the identification and measurement of those with movement disorders.

Lecture: Three hours per week.

*3 credits, Spring*

#### **SPRT 420: Prevention and Care of Athletic Injuries**

General foundations and specific concepts related to injury prevention, evaluation, management, and rehabilitation of athletic injuries are presented. This course is designed to introduce the student to the basic knowledge and skills necessary to recognize, evaluate, and treat athletic injuries of the head and face, spine and torso, and extremities.

Prerequisite: SPRT360/361 required

Lecture/Lab: Four hours per week.

*4 credits, Spring*

#### **SPRT 424: Biomechanics**

The purpose of this course is to apply the knowledge gained in previous courses to human movement contexts. Specifically, the student will apply the principles of physics to sport and exercise settings.

Prerequisite: SPRT360/361 required

Lecture/Lab: Three hours per week.

*3 credits, Fall*

#### **SPRT 425: Clinical Exercise Physiology**

This course will provide classroom and informal laboratory experiences that take full advantage of current knowledge and trends in rehabilitation of populations with cardiac, pulmonary and metabolic disorders through assessment and specific exercise programming. The course will also expose the student to the interpretation of electrocardiograms both at rest and during submaximal and maximal exercise bouts.

Prerequisites: SPRT390/391 required

Lecture: Three hours per week.

*3 credits, Spring*

#### **SPRT 430: Practicum in Sports and Exercise Science**

This course is designed to provide clinical learning experiences that allow the Sport and Exercise Science student to synthesize knowledge and Sport/Exercise Science concepts in a variety of practice settings. Provides majors with clinically-based learning experiences to expand their understanding of sport and exercise science in an area of choice.

Prerequisite: Permission from instructor or program director required.

*3 credits, Both Terms and Summer*

**SPRT 450: Independent Study in Sport and Exercise Science**

The student explores an area of topical or special interest pertinent to the study of Sport and Exercise Science. The experience allows the student to explore, in depth, a subject area through a research project, advanced clinical experience, prophylactic care plan development, or other area as approved by project advisor.

Prerequisite: Permission from instructor or program director required.

*1-3 credits, Both Terms and Summer*

**SPRT 460: Sport Ethics**

The objective of this course is to explore broad issues in the philosophy of sport by examining the ethical presuppositions of competitive athletics and their connections to moral and ethical theory. The discussion of each topic deals with examples from the world of sport and illuminates them in light of philosophical work on such values as fairness, justice, integrity, and respect for rights.

Prerequisite: Senior standing, final semester of academic preparation.

Lecture: Three hours per week

*3 credits, Spring*

**SPRT 470: Advanced Strength Training and Conditioning**

The objective of this course is to provide majors with theoretical and practical knowledge of the physiological, biomechanical, administrative aspects of designing and supervising strength and conditioning programs for various populations, and understanding the legal aspects of starting your own strength training facility.

Prerequisites: SPRT360/361 and SPRT390/391 required.

Lecture: Three hours per week

*3 credits, variable*

**SPRT 471: Principles of Athletic Training**

This course is designed to give graduate-level athletic training students an overview of essential athletic training principles. Students will gain knowledge in the areas of musculoskeletal injuries, environmental risk factors, mechanisms and characteristics of sport trauma, and coordinating the sports medicine team.

Lecture/Lab: 3 hours per week

*3 credits, Summer*

**SPRT 472: Taping and Bracing of Athletic Injuries**

This course is designed to develop taping skills of both upper and lower extremity, fitting of protective equipment, and the application of various bracing and splinting materials within the athletic training profession.

Lecture/Lab: 2 hours per week

*2 credits, Summer*

**SPRT 473: Non-Orthopedic Injury Assessment**

This course prepares the athletic training student to assess and manage non-orthopedic injuries and illnesses that may be encountered while working in the athletic training profession. The course will focus on the etiology, recognition, pathological course, treatment, and prognosis of various general medical conditions including concussion management, heat management and other pathological conditions pertaining to the respiratory, cardiovascular, endocrine, genitourinary, and neurological systems.

Lecture/Lab: 3 hours per week

*3 credits, Summer*

**SPRT 474: Clinical I in Athletic Training**

This course consists of hands-on clinical athletic training experiences under the supervision and guidance of a program-approved healthcare provider in a professional setting. The course meets throughout the semester for formal competency development. This course includes skill development in taping and wrapping techniques, first aid general medical examination and lower extremity assessment evaluations.

Clinical: hours per week variable

*4 credits, Fall*

**SPRT 475: Lower Body Extremity Assessment**

This course addresses evaluation techniques and assessment of musculoskeletal injuries to the

spine, trunk, abdomen, and lower extremities. The student must integrate knowledge of anatomical structures, physiology principles, and evaluative techniques to provide a basis for critical decision-making in an injury management environment. Decision-making will be based on recognition, evaluation, and immediate care of orthopedic injuries caused by physical activity or exercise.

Lecture/Lab: 3 hours per week

*3 credits, Fall*

**SPRT 476: Therapeutic Modalities**

Basic physiological responses of the human body to the application of therapeutic heat, therapeutic cold, therapeutic electricity, iontophoresis, ultrasound and other basic therapeutic modalities used in sport medicine are examined.

Lecture/Lab: 3 hours per week

*3 credits, Fall*

**SPRT 477: Clinical II in Athletic Training**

This course consists of hands-on clinical athletic training experiences under the supervision and guidance of a program-approved healthcare provider in a professional setting. The course meets throughout the semester for formal competency development. This course includes skill development in therapeutic interventions and musculoskeletal assessment and evaluation. The course also includes content for goniometric measurements and muscle function assessments such as manual muscle testing.

Clinical: hours per week variable

*4 credits, Spring*

**SPRT 478: Upper Body Extremity Assessment**

This course addresses evaluation techniques and assessment of musculoskeletal injuries to the head, face, and upper extremities. The student must integrate knowledge of anatomical structures, physiological principles, and evaluative techniques to provide a basis for critical decision-making in an injury management environment. Decision-making will be based on recognition, evaluation, and immediate care of orthopedic injuries caused by physical activity or exercise.

Lecture/Lab: 3 hours per week

*3 credits, Spring*

**SPRT 479: Therapeutic Rehabilitation**

A systematic approach to individual rehabilitative exercise program development as it relates to athletic injury recovery. Basic information of using the various forms of therapeutic exercises, techniques, indications and contraindications of exercise, and exercise progression as related to athletic injury, prevention, reconditioning and return to participation guidelines will be discussed.

Lecture/Lab: 3 hours per week

*3 credits, Spring*

**SPRT 480: Advanced Health and Fitness Assessment and Instruction**

An in-depth analysis of exercise stress testing for cardiacs, symptomatics, and asymptomatics will also be presented. Traditional, as well as more recently developed stress-testing procedures will also be discussed. This class will provide structured experiences in the classroom, laboratory, and gymnasium to improve knowledge and understanding of graded exercise testing, exercise prescription, and physical activities as used in prevention and rehabilitative programs as outlined in the American College of Sports Medicine (ACSM) Guidelines.

Prerequisites: SPRT360/361, SPRT390/391 and SPRT400/401 required.

Lecture: Three hours per week

*3 credits, variable*

**SPRT 490: Special Topics in Sport and Exercise Science**

This course provides the opportunity to present topics of interest that are not regularly offered in the curriculum.

Prerequisites: To Be Determined

Lecture: 3 hours per week

*3 credits, variable*

MAJOR FIELDS OF STUDY

Sport and Exercise Science Curriculum

Students who choose to pursue a Bachelor of Science degree with a major in Sport and Exercise Science may follow one of a number of different tracks highlighted below.

Exercise Science Track

KORY STAUFFER, Ph.D., ATC, HFI; *Program Advisor*

FRESHMAN (30 credits)	
<i>Fall</i>	<i>Spring</i>
3 College Composition/LENG 111	3 Critical Analysis/LENG 112
1 Foundations of Exercise Science/ SPRT 120	3 Theology II/LTHE
3 Public Speaking/SPCH 111	3 History Without Borders/LHST 111
3 Sacred Scriptures/LTHE 121	3 Sport Nutrition/SPRT 130
3 Introduction to Philosophy/LPHI 131	3 Intro to Psychology/PSYC 111
2 1st Year Seminar/SPRT 101	
15	15
SOPHOMORE (33-34 credits)	
<i>Fall</i>	<i>Spring</i>
3 Sport Psychology/SPRT 240	3 Exercise Psychology/SPRT 250
3 Trigonometry/MATH 112	3 Statistics/PSYC/MATH
3 Chemistry of Life/CHEM 103	3 College Physics I/PHYS 105
1 Chemistry of Life Lab/CHEM 104	1 College Physics I Lab/PHYS 106
3 Essentials of Anat. and Phys. I/ BIOL 108	3 Essentials of Anat. and Phys. II/ BIOL 110
1 Essentials of Anat. and Phys. I Lab/ BIOL 109	1 Essentials of Anat. and Phys. II Lab/ BIOL 111
2-3 Electives	3 Philosophy II/LPHI
16-17	17
JUNIOR (33 credits)	
<i>Fall</i>	<i>Spring</i>
3 Research Methods/SPRT 310	6 Electives
3 Kinesiology/SPRT 360	3 Motor Learning and Performance/ SPRT 415
1 Kinesiology Lab/SPRT 361	3 Exercise Physiology/SPRT 390
3 Literature Series/LENG	1 Exercise Physiology Lab/SPRT 391
3 THEO/PHIL III	3 Group Exercise/SPRT 340
1 Leadership Seminar	
3 Motor Development/SPRT 414	
17	16
SENIOR (32 credits)	
<i>Fall</i>	<i>Spring</i>
3 Exercise Testing and Prescription/ SPRT 400	3 Fine Arts/LFIN
1 Exercise Testing Lab/SPRT 401	3 Clinical Exercise Physiology/ SPRT 425
7 Approved Electives	4 Care and Prevention of Athletic Injuries/SPRT 420
3 Independent Study/Practicum/ SPRT 430/450	2 Electives
3 Biomechanics/SPRT 424	3 Senior Seminar/LBST
17	15

**Physical Therapy Track**

TANIA FLINK, Ph.D.; CAROLYN GALLEHER, PT, DHSc; DEBRA STROINEY, Ph.D.; JD MOSINSKI: *Program Advisors*

FRESHMAN (33 Credits)	
<i>Fall</i>	<i>Spring</i>
3 College Composition/LENG 111	3 Critical Analysis/LENG 112
1 Foundations of Exercise Sci/SPRT 120	3 Statistics/PSYC/MATH
3 Public Speaking/SPCH 111	3 History Without Borders/LHST 111
3 Trigonometry/MATH 112	3 Sport Nutrition/SPRT 130
3 Introduction to Philosophy/LPHI 131	3 Intro to Psychology/PSYC 111
2 1st Year Seminar/SPRT 101	3 Sacred Scriptures/LTHE 121
<hr/> 15	<hr/> 18
SOPHOMORE (31 credits)	
<i>Fall</i>	<i>Spring</i>
3 Theology II/LTHE	3 Animal Form and Function/BIOL 124
3 General Chemistry I/CHEM 111	1 Animal Form and Function Lab/ BIOL 125
1 General Chemistry Lab/CHEM 112	3 Philosophy II/LPHI
3 Molecular and Cellular Biology/ BIOL 122	3 General Chemistry II/CHEM 114
1 Molecular and Cellular Biology Lab/ BIOL 123	3 General Chemistry II Lab/CHEM 115
3 College Physics I/PHYS 105	3 College Physics II/PHYS 108
1 College Physics I Lab/PHYS 106	1 College Physics II Lab/PHYS 109
<hr/> 15	<hr/> 16
JUNIOR (32 credits)	
<i>Fall</i>	<i>Spring</i>
3 Research Methods/SPRT 310	3 Motor Learning and Perf/SPRT 415
3 Kinesiology/SPRT 360	3 Psychopathology/PSYC 232
1 Kinesiology Lab/SPRT 361	3 Exercise Physiology/SPRT 390
3 Human Gross Anatomy/BIOL 365	1 Exercise Physiology Lab/SPRT 391
1 Human Gross Anatomy Lab/BIOL 366	3 Animal Physiology/BIOL 368
3 THEO/PHIL III	1 Animal Physiology Lab/BIOL 369
1 Leadership Seminar	1 PT Seminar II/PT 210
<hr/> 15	<hr/> 17
SENIOR (32 credits)	
<i>Fall</i>	<i>Spring</i>
3 Motor Development	3 Literature Series/LENG
3 Exer Testing and Prescrp/SPRT 400	3 Human Motor Control/SPRT 416
1 Exercise Testing Lab/SPRT 401	3 Clinical Exercise Physiology/ SPRT 425
3 Senior Seminar/LBST	4 Care and Prevention of Athletic Injuries/SPRT 420
3 Independent Study/Practicum/ SPRT 430/450	3 Fine Arts/LFIN
3 Biomechanics/SPRT 424	
<hr/> 16	<hr/> 16

**Pre-Medical Track**

JASON P. WILLOW, Ph.D; KARLA MASHBURN, MS: *Program Advisors*

FRESHMAN (33 credits)	
<i>Fall</i>	<i>Spring</i>
4 Molecular & Cellular Biology w Lab/ BIOL 122/123	4 Animal Form and Function w Lab/ BIOL 124/125
4 General Chemistry I w Lab/ CHEM 111/112	4 General Chemistry II w Lab/ CHEM 114/115
3 College Composition/LENG 111	3 Sacred Scriptures/LTHE 121
2 First-Year Seminar	3 Critical Analysis & Comp/LENG 112
3 Public Speaking/SPCH 111	3 Trigonometry/MATH 112
16	17
SOPHOMORE (35 credits)	
<i>Fall</i>	<i>Spring</i>
3 Introduction to Philosophy/LPHI 131	3 Introduction to Psychology/PSYC 111
3 History Without Borders/LHST 111	4 Animal Physiology w Lab/ BIOL 368/369
3 Theology II Series/LTHE	4 Organic Chemistry II w Lab/ CHEM 224/225
4 Organic Chemistry w Lab/ CHEM 221/222	4 College Physics II w/Lab/ PHYS 108/109
4 College Physics I w/Lab/PHYS 105/106	3 College Calculus/MATH 140
17	18
JUNIOR (30 credits)	
<i>Fall</i>	<i>Spring</i>
4 Structural Biochemistry w Lab/ CHEM 366/367	3 Psychological Statistics/PSYC 211
3 Genetics w/Lab/BIOL 345	4 Exercise Physiology w Lab/ SPRT 390/391
3 Philosophy/Theology III Series/LTHE	4 Kinesiology w Lab/SPRT 360/361
4 Human Gross Anatomy w Lab/ BIOL 365/366	3 Philosophy II Series/LPHI
1 Leadership Seminar	
16	14
SENIOR (31 credits)	
<i>Fall</i>	<i>Spring</i>
3 Research Methods/SPRT 310	4 Care and Prevention/SPRT 420
4 Exercise Testing w Lab/SPRT 400/401	3 Literature Series/LENG
3 Motor Development/SPRT 414	3 Clinical Exercise Physiology/SPRT 425
3 Fine Arts/LFIN	3 Motor Learning & Perf/SPRT 415
3 Sport & Exercise Sci Pract/SPRT 430	3 Senior Seminar/LBST 383
16	16

**Pre-Physician Assistant Track**

JASON P. WILLOW, Ph.D.: *Program Advisor*

FRESHMAN (32 Credits)	
<i>Fall</i>	<i>Spring</i>
3 College Composition/LENG 111	3 Critical Analysis/LENG 112
1 Foundations of Exercise Sci/SPRT 120	3 Sacred Scriptures/LTHE 121
3 Public Speaking/SPCH 111	3 History w/o Borders/LHST 111

4	General Chemistry I w/ lab/ CHEM 111/112	3	Sport Nutrition/SPRT130
2	First-Year Seminar	4	General Chemistry II w/ lab/ CHEM 114/115
3	Intro to Phil/LPHI 131		
16		16	
	SOPHOMORE (34 Credits)		
	<i>Fall</i>		<i>Spring</i>
3	Theology II Series/LTHE	4	Animal Form and Function w/ Lab/BIOL 124/125
3	Fine Arts/LFIN	3	Psyc of Human Dev/PSYC 222
3	Introduction to Psychology/PSYC 111	3	Psychopathology/PSYC 232
4	Molecular and Cellular Biology w/Lab/BIOL 122/123	3	Statistics/PSYC 211 or MATH 213
4	Organic Chemistry I w/ Lab/ CHEM 221/222	4	Organic Chemistry II w/Lab/ CHEM 224/225
17		17	
	JUNIOR (30 Credits)		
	<i>Fall</i>		<i>Spring</i>
3	Research Methods/SPRT 310	4	Animal Physiology w/Lab/ BIOL 368/369 or BIOL 117/118
4	Kinesiology w/Lab/SPRT 360/361	4	Exercise Physiology w/Lab/ SPRT 390/391
3	Philosophy/Theology III Series/ LPHI or LTHE	3	Philosophy II Series/LPHI
4	Human Gross Anatomy w/ Lab/ BIOL 365/366 or BIOL 115/116		
4	Genetics w/Lab/BIOL 265/266		
1	Leadership Seminar		
19		11	
	SENIOR (33 Credits)		
	<i>Fall</i>		<i>Spring</i>
4	Exercise Testing and Prescription w/ Lab/SPRT 400/401	4	Microbiology w/Lab/BIOL 331/332
3	Motor Development/SPRT 414	3	Clinical Exercise Phys/SPRT 425
3	Independent Study SPRT 450	3	Human Motor Control/SPRT 416
3	Literature Series/LENG	4	Care and Prevention of Sports Injuries/SPRT 420
3	Senior Seminar/LBST 383	3	Exercise Biochemistry/SPRT 405
16		17	

### Physical Therapy 3+3 Track

JASON P. WILLOW, Ph.D. *Program Advisor*

The Sport and Exercise Science Department offers an early entry program in conjunction with the Physical Therapy DPT Graduate Program here at Gannon. Under the provisions of this program, students will matriculate at Gannon University for a minimum of a hundred and two (102) semester hours leading toward the Bachelor of Science degree with a major in Sport and Exercise Science/Pre Physical Therapy track. A guaranteed position in our 3+3 Doctor of Physical Therapy Program will be reserved for freshmen if the following criteria are met:

- SAT total of 1100 or higher.
- Grade point average of 3.4 or higher on a 4.0 scale.
- Must maintain a grade point average of 3.4 or higher in Gannon undergraduate courses.
- Must maintain a grade point average of 3.4 or higher in the prerequisite courses (with no repeat courses).
- GPA will be reviewed at the end of each academic year.

For a detailed academic schedule of the Sport and Exercise Science/Pre-PT 3+3 option, please refer to the Physical Therapy section in this publication.

*\*NOTE: This program is in the process of curriculum revision. The schedule below may not accurately reflect course progression.*

### 5-Year Master of Athletic Training

REBECCA MOKRIS, D.Ed., LAT, Program Advisor

#### Fresh Fall (15 Credits)

LENG111: College Composition	3
SPCH 111: Public Speaking	3
PSYC111: Introduction to Psychology	3
BIOL108/9: Essent. of Anat. and Phys. I w/lab	4
First Year Seminar	2

#### Soph Fall (17 Credits)

SPRT240: Sport Psychology	3
CHEM103/4: Chemistry of Life 2/ lab	4
PSYC211/MATH213: Statistics	3
LPHI131: Introduction to Philosophy	3
SPRT390/1: Exercise Physiology w/ lab	4

#### Junior Fall (14 Credits)

SPRT400/1: Exer Testing and Prescription w/lab	4
SPRT414 Motor Development	3
LENG: Literature Series	3
THEO/PHIL III Leadership Seminar	3
	1

#### Summer (9 Credits)

GSPRT505 Principles of Athletic Training	3
GSPRT509 Taping and Bracing of Athletic Injuries	2

#### Senior Fall (13 credits)

GSPRT515 Clinical I	4
GSPRT555 Lower Body Extremity Assessment	3
GSPRT535 Therapeutic Modalities	3
LFIN Fine Arts	3

#### Summer (10 credits)

GSPRT510 Advanced Strength and Conditioning	3
GSPRT530 Research Methods and Stat	3

#### Graduate Fall Two (10 Credits)

GSPRT615 Clinical III	4
GSPRT550 Advanced Sport Nutrition	3
GSPRT540 Psychological Foundations of Performance	3

#### Fresh Spring (16 Credits)

LENG112: Critical Analysis	3
LTHE121: Sacred Scriptures	3
LHST111: History Without Borders	3
SPRT130: Sport Nutrition	3
BIOL110/1: Essent of Anat. and Phys. II w/lab	4

#### Soph Spring

(16 Credits)

SPRT250: Exercise Psychology	3
LPHI: Philosophy II	3
MATH112: Trigonometry	3
LTHE: Theology II	3
SPRT360/1: Kinesiology w/ lab	4

#### Junior Spring (16 Credits)

SPRT425 Clinical Exer. Physiology	3
SPRT415 Motor Learning and Perf	3
SPRT424 Biomechanics	3
SPRT416 Human Motor Control	3
SPRT420 Care and Prevention of Injuries	4

GSPRT511 Non-Orthopedic Injury Assessment

3

GSPRT513 Clinical in Athletic Training

1

#### Senior Spring (13 credits)

GSPRT545 Clinical II	4
GSPRT525 Upper Body Extremity Assessment	3
GSPRT565 Therapeutic Rehabilitation	3
LBST383 Senior Seminar	3

GSPRT575 Pharm and Prof. Issues

3

GSPRT613 Clinical in Athletic Training: Preseason II

1

#### Graduate Spring Two (10 Credits)

GSPRT645 Clinical IV	4
GSPRT655 Org. and Administration	3
GSPRT507 Seminar in Athletic Training	3



## Minors in Sport and Exercise Science

*Department Chair:* JASON P. WILLOW, Ph. D.

### Exercise Science Minor

KORY STAUFFER, Ph.D., ATC, HFI: *Minor Advisor*

Program Description: The minor consists of 22 credits of upper level Sport and Exercise Science culminating in an independent study at the end of all coursework. The independent study will be coordinated with the student's academic major in an effort to merge their major program of study with the focus of the Exercise Science minor curriculum. All prerequisites are in effect.

SPRT 360	Kinesiology	(3)
SPRT 361	Kinesiology Lab	(1)
SPRT 390	Exercise Physiology	(3)
SPRT 391	Exercise Physiology Lab	(1)
SPRT 414	Motor Development	(3)
SPRT 415	Motor Learning and Performance	(3)
SPRT 420	Care and Prevention of Sports Injuries	(4)
SPRT 450	Independent Study	(3)

### Sport Behavior Minor

SUZANNE KITTS, Ph.D., *Minor Advisor*

Program Description: The minor consists of 21 credits of behavioral focused Sport and Exercise Science courses culminating in an Independent Study at the end of all coursework. The independent study will be coordinated with the student's academic major in an effort to merge their major program of study with the focus of the Sport Behavior minor curriculum. All prerequisites are in effect.

SPRT 240	Sport Psychology	(3)
SPRT 250	Exercise Psychology	(3)
SPRT 414	Motor Development	(3)
SPRT 415	Motor Learning and Performance	(3)
SPRT 450	Independent Study	(3)
SPRT 460	Sport Ethics	(3)
	Elective	(3)

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## NUTRITION AND HUMAN PERFORMANCE COURSE DESCRIPTIONS

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### DIET 101: Nutrition Today: Contemporary Issues and Insights

This course is designed for students who are not health science majors and focuses on consumer issues related to foods and nutrition. In discussing the role of nutrients in health promotion and disease prevention, it includes critical information which will help consumers sort out nutrition advice; concepts, principles, and strategies which will enable consumers to personalize their food choices; and questions that people often ask; i.e., vegetarianism, diets for athletes, "good" foods and "bad" foods, safety of food supply, and fad diets. *3 credits, Varies*

### DIET 202: Nutrition

A study of the basic principles of human nutrition; the digestion, absorption, metabolism and utilization, functions, interrelationships, food sources, recommended allowances, and deficiency diseases of the nutrients; nutritional needs during various stages of life cycle, and the problems in the improvement of nutrition of different ethnic and cultural groups, and some community programs providing food and nutrition assistance to eligible recipients. An

introduction to clinical nutrition (dietary modifications for certain diseases) is included.

Prerequisites: Take one group: (CHEM 106, BIOL 115) or (CHEM 111, BIOL 368) or (CHEM 105, BIOL 115) or (CHEM 106, BIOL 117) or (CHEM 106, BIOL 365) *3 credits, Spring*

### **DIET 303: Advanced Nutrition**

This course includes an in-depth study of the science of human nutrition. Integrating chemistry, physiology, foods, and nutrition, it examines the digestion, absorption, metabolism, and excretion of the nutrients at the cellular and systemic levels and the application of scientific principles to nutritional needs in health and disease. The course also includes nutrition assessment, introduction to research in nutrition and dietetics, observations in selected clinical laboratories and specialized health care units, and evaluation of special nutritional/dietary products. Group research project begins in this course and is carried through four semesters.

Prerequisites: DIET 202 and CHEM 366 *4 credits, Fall*

### **NHP 250: Nutrition and Health**

This course deals with the basic principles of human nutrition, including the nutrients, food sources and their utilization in the body for growth and health throughout life.

Prerequisite: CHEM103/104, BIOL108/109 or consent of instructor

Lecture: 3 hours per week *3 credits, Fall, Odd years*

### **NHP 300: Nutrition in the Life Cycle**

This course deals with the changing nutritional needs of individuals throughout the lifespan.

Physiological, societal and economic factors and the availability of nutrition services are considered in meeting the nutritional needs of men, women, and children from gestation through adulthood.

Prerequisite: NHP250 or consent of instructor

Lecture: 3 hours per week *3 credits, Fall, Even years*

### **NHP 350: Advanced Sport Nutrition**

This course provides an in-depth study of the nutrients as they relate to sports and fitness and of health-related issues related to human performance. These issues include eating disorders, dietary supplements, and various dietary manipulations.

Prerequisite: NHP250 or consent of instructor

Lecture: 3 hours per week *3 credits, Spring*

### **NHP 400: Nutritional Assessment**

This course emphasizes the systematic process of comprehensive assessment of the individual's nutritional status in health and disease. Anthropometric measurements, laboratory and clinical parameters, family, personal and medical histories, dietary intake, psychosocial factors, and many other factors are examined to draw conclusions for nutritional and other forms of intervention.

Prerequisite: NHP250 or consent of instructor

Lecture: 3 hours per week *3 credits, Spring, Odd years*

### **NHP 410: Nutrition and Disease**

This course studies the pathogenesis of diseases and their dietary or nutritional management.

Diseases that are studied include; Cardiovascular diseases, diabetes, obesity and metabolic syndrome, selected gastrointestinal disorders, and renal disorders.

Prerequisite: NHP250 or consent of instructor

Lecture: 3 hours per week *3 credits, Spring, Even years*

## **Nutrition and Human Performance**

SUZANNE KITTS, Ph.D. *Program Coordinator*

Students who choose to pursue a Bachelor of Science degree with a major in Nutrition and Human Performance can expect to have significant hands on opportunities for both exercise testing and prescription as well as nutritional assessment and dietary programming.

Suggested curriculum schedule is offered below.

FRESHMAN (33 credits)	
<i>Fall</i>	
3	Mol and Cell Biology/BIOL 122
1	Mol and Cell Biology Lab /BIOL 123
3	Public Speaking/SPCH 111
3	College Composition/LENG 111
2	First Year Seminar/SPRT 101
3	General Chemistry I/CHEM 111
1	General Chemistry I Lab/CHEM 112
16	
SOPHOMORE (33 credits)	
<i>Fall</i>	
3	Nutrition & Health /NHP 250 or Nutrition in the Life Cycle/NHP 300
3	Microbiology/BIOL 106
1	Microbiology Lab/BIOL 107
3	Organic Chemistry I/CHEM 221
1	Organic Chemistry I Lab/CHEM 222
3	Introduction to Philosophy/LPHI 131
3	Theology II Series/LTHE
17	
JUNIOR (34 credits)	
<i>Fall</i>	
3	Nutrition & Health/NHP 250 or Nutrition in the Life Cycle/NHP 300
3	Exercise Physiology/SPRT 390
1	Exercise Physiology Lab/SPRT 391
3	Research Methods in Exercise Science/SPRT 310
3	Motor Development/SPRT 414
2	Disordered Eating in Athletics/ SPRT 393 or Issues in Cont. in Sport Nutrition/SPRT 395
3	Literature Series/LENG
18	
SENIOR (31 credits)	
<i>Fall</i>	
2	Disordered Eating in Athletics/ SPRT 393 or Issues & Cont. in Sport Nutrition/SPRT 395
3	Exercise Testing & Prescription/ SPRT 400
1	Exercise Testing & Prescription Lab/ SPRT 401
3	Independent Study/SPRT 450
3	Advanced Sport Nutrition/NHP 350
3	Phil/Theo III Series/LPHI/LTHE
1	Leadership Seminar
16	
<i>Spring</i>	
3	Animal Form & Function/BIOL 124
1	Animal Form & Func Lab/BIOL 125
3	General Chemistry II/CHEM 114
1	General Chem II Lab/CHEM 115
3	Sport Nutrition/SPRT 130
3	Sacred Scriptures/LTHE 121
3	Critical Analysis & Comp/LENG 112
17	
<i>Spring</i>	
3	Fine Arts/LFIN
3	Exercise Psychology/SPRT 250
3	Basic Sociology/SOCI 110
3	Philosophy II Series/LPHI
3	Organic Chemistry II/CHEM 224
1	Organic Chem II Lab/CHEM 225
16	
<i>Spring</i>	
3	Nutritional Assessment/NHP 400 or Nutrition in Disease/NHP 410
3	Statistics/MATH/PSYC
3	History without Borders/LHST 111
3	Kinesiology/SPRT 360
1	Kinesiology Lab/SPRT 361
3	Motor Learning & Performance/ SPRT 415
16	
<i>Spring</i>	
3	Nutrition Assessment/NHP 400 or Nutrition in Disease/NHP 410
3	Clinical Exercise Physiology/ SPRT 425
3	Exercise Biochemistry/SPRT 405
3	Medical Terminology
3	Senior Seminar/LBST 383
15	

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Phillip H. Kelly, D.A. (Interim President) 2010-2011

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**SUBJECT CODES**


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ACCT	Accounting	LHPS	Leadership
ADVC	Advertising Comm	LEGL	Legal Studies
ARABI	Arabic	LENG	LS English
ARCH	Archaeology & Cultural Studies	LFIN	LS Fine Arts
BCOR	Business Core	LHST	Liberal Studies
BIOL	Biology	LIBR	Library
BME	Biomedical Engineering	LPHI	LS Philosophy
CHEM	Chemistry	LTHE	LS Theology
CHIN	Chinese	MATH	Mathematics
CIS	Computer & Info Sci	MDTC	Medical Technology
COMM	Communication Arts	ME	Mech Engineering
CRJS	Criminal Justice	MGMT	Management
DIET	Dietetics	MKTG	Marketing
ECE	Elect Engineering	MLED	Middle Level Education
ECED	Early Childhood Education	MLTD	Multidisciplinary
ECON	Economics	MLTS	Military Science
EDCR	Education Core	MORT	Mortuary Science
EDFL	Field Education	MUSC	Music
EDUC	Education Electives	NHP	Nutrition & Human Performance
ELED	Elementary Education	NURS	Nursing
ENG	Engineering	OCCT	Occupational Therapy
ENGL	English	PHAS	Physician Assistant
ENTR	Entrepreneurship	PHIL	Philosophy
ENV	Environmental Science	PHYS	Physics
FINA	Fine Arts	PLAW	Pre-Law
FINC	Finance	POLI	Political Science
FREN	French	PSYC	Psychology
FRSH	Freshmen Studies	PT	Physical Therapy
GEOG	Geography	PUBH	Public Health
GERO	Gerontology	RADS	Radiologic Sciences
GLOBL	Global Cultures	RISK	Risk Management
GREK	Greek	RSCH	Research Scholars
GRMN	German	RSPC	Respiratory Care
HCMG	Healthcare Management	SCMG	Supply Chain Management
HEBR	Hebrew	SCWK	Social Work
HIST	History	SEECs	Engineering & Computer Science
HLS	Health Science	SMGT	Sport Management & Marketing
HNRS	Honors	SOCI	Sociology
IBUS	International Business	SPAN	Spanish
IE	Industrial Engineering	SPCH	Speech
IMGT	International Management	SPED	Special Education
INTS	International Study	SPRT	Sport & Exercise Science
JCOM	Journalism Communication	THEA	Theatre
LATN	Latin	THEO	Theology
LBST	Liberal Studies	UNDL	Undeclared
LEAD	Leadership	WMST	Women's Studies
LCEB	Leadership		
LHES	Leadership		



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## INDEX

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Academic Advising .....	38	Disability Support Services .....	40
Academic Forgiveness .....	46	Duquesne School of Law 3/3 Early	
Academic Grievance .....	56	Admission .....	311
Academic Honors .....	44	Early Alert Referral System .....	41
Academic Integrity .....	46	Early Childhood Educ .....	212
Academic Probation .....	49	Early Childhood Educ - 2 yr .....	212
Academic Programs .....	6	Economics .....	89
Academic Year .....	51	Education, School of .....	205
Accounting .....	87	Electrical & Computer Engineering .....	119
Accreditation .....	4	engage U Transcript .....	36
Activities Programming Board .....	36	English .....	245
Administration .....	518	Entrepreneurship .....	101
Admissions .....	11	Environmental Science/	
Advanced Placement .....	52	Environmental Engineering .....	135
Advertising Communication .....	179	Faculty (Adjunct) .....	545
Archaeology and Cultural Studies .....	183	Faculty .....	529
Athletic/Intercollegiate .....	27	Fees .....	18
Auditing .....	52	Finance .....	90
Biochemistry .....	343	Financial Aid .....	21
Biology .....	344	Financial Facts .....	18
Biomedical Engineering .....	168	Fine Arts .....	256
Board of Trustees .....	516	Foreign Language and Cultures .....	260
Business Administration,		Fraternities & Sororities .....	36
Dahlkemper School of .....	78	Forensic Science .....	373
Business Administration .....	81	French .....	262
Business Administration - 2 yr. ....	82	Freshwater and Marine Biology .....	358
Campus Center, John E. Waldron .....	38	Full-Time Status .....	54
Campus Map .....	563	General Studies Program .....	39
Campus Ministry .....	29	German .....	264
Career Exploration and Development ..	40	Grades .....	54
Center for Adult Learning .....	16	Graduation .....	43
Center for Social Concerns .....	29	Greek .....	265
Chemical Engineering .....	364	GU Gold Funds .....	21
Chemistry .....	365	Healthcare Management .....	92
Chinese .....	262	Health Center .....	26
Class Attendance .....	52	Hebrew .....	265
Clubs & Organizations .....	36	High School Dual Enrollment .....	15
College of Engineering and Business ..	78	History .....	271
College of Humanities Education		History/Social Studies .....	279
and Social Sciences .....	177	Honors Program .....	62
Communication Arts, Electronic Media ..	186	Humanities, School of .....	177
Communication and the Arts,		Industrial Engineering .....	148
School of .....	186	Information Systems .....	154
Commuter Life .....	25	Interdisciplinary Studies .....	280
Computer & Information Science .....	105	Interdisciplinary Studies - 2 yr .....	282
Computer Science .....	116	International Baccalaureate .....	54
Concert Band .....	25	International Management .....	94
Counseling Services .....	26	International Student Office .....	27
Course Levels .....	53	International Students,	
Criminal Justice .....	192	Admission Requirements .....	14
CWRU Dental .....	437	International Studies .....	283
Dean's List .....	44	Journalism Communication .....	285
Degree Requirements .....	43	Latin .....	266
Deposits .....	12		

Leadership Development and Campus Engagement .....	35	Readmission .....	15
Leadership Program .....	287	REAP .....	32
Learning Abroad .....	65	Recreation, Intramural, & Sports .....	31
Leave Policy .....	55	Refund Policy .....	20
Learning Disabilities Program .....	40	Repeat Courses .....	56
LECOM Dental .....	439	Residence Life .....	33
LECOM Medical .....	442	Respiratory Care .....	494
Legal Studies/Paralegal .....	289	Risk Management & Insurance .....	97
Liberal Studies .....	67	RN-BSN Option .....	399
Library .....	10	RN-MSN Option .....	403
Loans .....	22	Room & Board Costs .....	18
Major Changes/Declaration .....	55	Ross - Accelerated Medical .....	454
Management .....	95	Ross - Accelerated Veterinary .....	479
Marketing .....	102	Salus - Accelerated Optometry .....	462
Mathematics .....	377	SAVE .....	35
MBA - Five Year Program .....	134	Scholarships .....	22
Meal Plans .....	35	Schuster Art Gallery .....	32
Mechanical Engineering .....	157	Schuster Program for the Arts .....	32
Medical Laboratory Science .....	384	Schuster Theatre in Scottino Hall Productions .....	37
Middle Level 4-8 .....	210	Senior Awards .....	44
Military Science .....	294	Science .....	499
Minor Declaration .....	55	School Nurse Certificate .....	405
Mission and Ministry .....	29	Secondary Education & K-12 .....	211
Mission Statement .....	3	Seminary, Saint Mark's .....	63
Morosky College of Health Professions and Sciences .....	343	Service Learning .....	32
Mortuary Science .....	299	Social Work .....	323
New Student Programs .....	30	Sociology .....	329
Next Step Program .....	13	Software Engineering .....	172
Nursing .....	391	Spanish .....	266
Nutrition & Human Performance .....	513	Special Education .....	205
Occupational Therapy .....	407	Sport and Exercise Science .....	501
Options for the Adult Learner .....	16	Sport Management and Marketing .....	104
Pass-Fail Option .....	56	Stem Center .....	41
Payment .....	19	Student Conduct .....	35
PCOM .....	449	Student Government Association .....	36
Philosophy .....	300	Student Success Center .....	38
Physical Therapy .....	413	Student Support Services Program .....	41
Physician Assistant .....	419	Supply Chain Management .....	99
Physics .....	428	Theatre & Communication Arts .....	336
Podiatry .....	476	Theater Design & Technologies .....	333
Political Science .....	304	Theater Performance Media & Stage .....	330
Pre-Chiropractic .....	432	The Gannon Knight .....	37
Pre-Dental .....	432	The Knight Club .....	37
Pre-Law .....	310	Theology .....	337
Pre-Medical .....	432	Transcript .....	59
Pre-Pharmacy .....	433	Transfer Student .....	13
Pre-Podiatry .....	433	Tuition .....	18
Pre-Optometry .....	433	UMHS Medical .....	457
Pre-Veterinary .....	432	Undeclared Major .....	39
Psychology .....	313	Undecided Students .....	59
Public Health .....	485	Veterans Assistance .....	24
Qualification Program .....	484	Withdrawal from the University .....	60
Radiologic Sciences .....	489	Women's Studies Minor .....	341
Radio Station, WERG-FM .....	30	Writing and Research Center .....	42



