Directory

ADDRESS—University, 600 Forbes Avenue, Pittsburgh, Pa 15219
Telephone Call specific Centrex (Direct Dial) number (see following), for other offices, call 434-6000

ADMISSION—Director of Admissions, Administration Building, Second Floor
Telephone (412) 434-6200/6221/6222

ADVISORS
College of Liberal Arts and Sciences, College Hall, Room 215
Telephone (412) 434-6394
School of Business and Administration, Rockwell Hall, Room 403
Telephone (412) 434-6277/6378
School of Education, Cavanin Hall, Room 214
Telephone (412) 434-6118/6119
School of Music, Room 315
Telephone (412) 434-6083
School of Nursing, College Hall, Room 629
Telephone (412) 434-6548
School of Pharmacy, Mellon Hall of Science, Room 421
Telephone (412) 434-6385

ROTC, University Hall, Room 47
Telephone (412) 434-6614

CAREER PLANNING AND PLACEMENT, Duquesne Union, Room 309
Telephone (412) 434-6644/6645/6646

CASHIER—Payment of Tuition and Fees, Business Affairs Office
Telephone (412) 434-6585/6586/6587

DEAN OF STUDENTS, Duquesne Union, Sixth Floor
Telephone (412) 434-6657/6658

FINANCIAL AID—Loan, Scholarship, Fellowship Applications, Mendell Hall, Room 102
Telephone (412) 434-6607/6608/6609

FOREIGN STUDENT ADVISOR, Duquesne Union, Room 603
Telephone (412) 434-6669

HEALTH SERVICE, Duquesne Towers, Second Floor
Telephone (412) 434-7822/7823

IDENTIFICATION CARDS—Office Services, Rockwell Hall, Lower Level
Telephone (412) 434-6191

INFORMATION CENTER—For University Events, Duquesne Union, Third Floor
Telephone (412) 434-6632/6633

PSYCHOLOGICAL COUNSELING, Center for Testing and Research
Telephone (412) 434-6561/6562/6563

REGISTRAR—Transcripts and Records, Rockwell Hall, Concourse
Telephone (412) 434-6212/6213/6215

RESIDENCE LIFE—Housing, Duquesne Towers, Room 111
Telephone (412) 434-6655/6656

TESTING BUREAU, Administration Building, Second Floor
Telephone (412) 434-6204/6208

DUQUESNE UNIVERSITY
PITTSBURGH, PENNSYLVANIA 15219

Undergraduate Catalog
1976-1977

College of Liberal Arts and Sciences
School of Business and Administration
School of Education
School of Music
School of Nursing
School of Pharmacy
Reserve Officer Training Corps
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The information contained in this catalog is accurate to the date of publication
The University reserves the right to change any provision or requirement
designated herein, including tuition and fees and room and board, and to effect the
withdrawal of any student whose conduct at any time is not satisfactory to the
University.
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<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>BACHELOR'S DEGREE</th>
<th>MASTER'S DEGREE</th>
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<td>Journalism</td>
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<td>Mathematics</td>
<td>Theology</td>
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<tr>
<td>Graduate School of Liberal Arts and Sciences</td>
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<td>Philosophy</td>
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<td></td>
<td>Biochemistry</td>
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<td></td>
<td>Chemistry</td>
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<td>Environmental Science</td>
<td>History</td>
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<td>Food Science</td>
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<td>Physics</td>
<td>Zoology</td>
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<td>Management Information Systems</td>
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<td>Economics</td>
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<td>School Administration and Supervision (Elementary)</td>
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<td>Elementary Education</td>
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<td>Counseling (Secondary)</td>
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<td>Reading and Language</td>
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<td>Music</td>
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<td>Pharmacy Administration and Technology</td>
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### 1975-1976

#### FALL SEMESTER — 1975*

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<th>Day</th>
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<tr>
<td>Sep 1</td>
<td>Monday</td>
<td>Holiday Labor Day</td>
</tr>
<tr>
<td>Sep 2-4</td>
<td>Tuesday through Thursday</td>
<td>Final Registration</td>
</tr>
<tr>
<td>Sep 4</td>
<td>Thursday</td>
<td>Fall Semester Begins</td>
</tr>
<tr>
<td>Sep 13</td>
<td>Saturday</td>
<td>Latest Date for Change of Schedule</td>
</tr>
<tr>
<td>Oct 25</td>
<td>Saturday</td>
<td>Latest Date to Apply for December 1975 Graduation</td>
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<tr>
<td>Oct 29</td>
<td>Wednesday</td>
<td>Due Date for Reporting Mid-term Grades</td>
</tr>
<tr>
<td>Oct 29</td>
<td>Wednesday</td>
<td>Latest Date to Withdraw with W Grade</td>
</tr>
<tr>
<td>Nov 1</td>
<td>Wednesday</td>
<td>Undergraduate 1 Grade Conversion Date</td>
</tr>
<tr>
<td>Nov 24-29</td>
<td>Monday through Saturday</td>
<td>Pre-registration for Spring 1976</td>
</tr>
<tr>
<td>Dec 6</td>
<td>Saturday</td>
<td>Graduation Due Date</td>
</tr>
<tr>
<td>Dec 8</td>
<td>Monday</td>
<td>Holiday Feast of the Immaculate Conception</td>
</tr>
<tr>
<td>Dec 16</td>
<td>Tuesday</td>
<td>Reading Day Latest Date for First Semester Freshmen to Withdraw with W Grade</td>
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<tr>
<td>Dec 17-23</td>
<td>Wednesday through Tuesday</td>
<td>Final Examinations</td>
</tr>
<tr>
<td>Dec 23</td>
<td>Tuesday</td>
<td>Semester Ends</td>
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#### SPRING SEMESTER — 1976*

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<td>Jan 12-14</td>
<td>Monday through Wednesday</td>
<td>Final Registration</td>
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<tr>
<td>Jan 15</td>
<td>Wednesday</td>
<td>Spring Semester Begins</td>
</tr>
<tr>
<td>Jan 24</td>
<td>Thursday</td>
<td>Latest Date for Change of Schedule</td>
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*Class periods for Saturday classes will be lengthened to compensate for only 14 Saturday class days.
<table>
<thead>
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<th>Date</th>
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<tbody>
<tr>
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<td>Latest Date to Apply for May 1976 Graduation</td>
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<td>Due Date for Reporting Mid-term Grades</td>
</tr>
<tr>
<td>March 6</td>
<td>Latest Date to Withdraw with W Grade</td>
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<tr>
<td>March 6</td>
<td>Undergraduate I Grade Conversion Date</td>
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<tr>
<td>March 8-9</td>
<td>Reading Days</td>
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<tr>
<td>March 31-April 10</td>
<td>Pre-registration for Fall 1976</td>
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<tr>
<td>April 15-17</td>
<td>Easter Vacation</td>
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<td>April 28-May 4</td>
<td>Final Examinations</td>
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<td>May 4</td>
<td>Semester Ends</td>
</tr>
<tr>
<td>May 7</td>
<td>Honors Day Exercises</td>
</tr>
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<td>May 8</td>
<td>Baccalaureate Service</td>
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<td>May 8</td>
<td>Commencement</td>
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<td>1976-1977</td>
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<td>FALL SEMESTER—1976</td>
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<td>August 26-28</td>
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<td>August 30</td>
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<td>September 4</td>
<td>Latest Date to Register and for Change of Schedule</td>
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<tr>
<td>September 6</td>
<td>Holiday Labor Day</td>
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<td>October 22</td>
<td>Due Date for Reporting Mid-term Grades</td>
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<tr>
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<td>Latest Date to Withdraw with W Grade</td>
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<tr>
<td>October 22</td>
<td>Undergraduate I Grade Conversion Date for 1976 Fall Semester Courses</td>
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<tr>
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</tr>
<tr>
<td>November 1</td>
<td>Holiday All Saints Day</td>
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<tr>
<td>November 22</td>
<td>Pre-registration Begins for Spring 1977</td>
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<td>November 25-27</td>
<td>Thursday through</td>
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<tr>
<td>November 7</td>
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<tr>
<td>December 7</td>
<td>Reading Day</td>
</tr>
<tr>
<td>December 8</td>
<td>Holiday Feast of the Immaculate Conception</td>
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<tr>
<td>December 14-18</td>
<td>Tuesday through</td>
</tr>
<tr>
<td>December 18</td>
<td>Final Examinations</td>
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<td>Semester Ends</td>
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<tr>
<td>January 8-12</td>
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<td>Spring Semester Begins</td>
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<td>January 19</td>
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<td>February 5</td>
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<tr>
<td>March 7</td>
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<td>Undergraduate I Grade Conversion Date for 1976 Fall Semester Courses</td>
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<td>April 4</td>
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<td>April 7-13</td>
<td>(Dates April 4, 5, 6, 14, 15, 16, 18, 19, 20)</td>
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<td>April 28-May 4</td>
<td>Easter Vacation</td>
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<td>Final Examinations</td>
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<td>May 6</td>
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<tbody>
<tr>
<td>October 30</td>
<td>Holiday All Saints Day</td>
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<td>November 1</td>
<td>Pre-registration Begins for Spring 1977</td>
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<tr>
<td>November 22</td>
<td>(Dates November 22, 23, 24, 29, 30, December 1, 2, 3, 4, 6)</td>
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</table>
The University

HISTORY
Duquesne University opened its doors as Pittsburgh Catholic College of the Holy Ghost in 1878 with an enrollment of 40 students and a faculty of seven. By 1911, a university charter had been obtained and it was then decided to adopt the name Duquesne University. Dictated by enrollment growth and modern educational demands, planned physical expansion of the University began in 1950. The campus size has more than tripled from its early 12.5 acre area to its present 38.4 acres. With room to grow, Duquesne undertook a program of new construction, rehabilitation, and renovation which has transformed it into an educational facility ranking with the finest in the East.

Today it is an urban university with an enrollment of more than 8,000 students in its eight schools. From the original school, which is now the present College of Liberal Arts and Sciences, have evolved the Graduate School (1911) and the School of Law (1911), Business and Administration (1913), Pharmacy (1925), Music (1926), Education (1929), and Nursing (1937). The University offers 40 baccalaureate, two professional, 45 masters and five doctoral degree programs.

Duquesne has increased in size and stature over the years, and it is proud of its growth and latest physical facilities. It is aware, however, of the necessity of keeping these material assets in the proper perspective, for they are never more important than the spiritual, academic, and cultural education of the students who become part of the Duquesne family.

PHILOSOPHY AND OBJECTIVES
Duquesne University is a Catholic institution, but it is open to students of all religions and creeds. It is a community composed of people having common aims and is committed to the ideal of graduating men and women whose minds seek intellectual freedom and the pursuit of truth. The University seeks to develop students who have the ability to judge independently, to live with honest doubt, to interrelate facts and disciplines, to balance memory, reason, and imagination. In essence, the Duquesne student is to be a person whose mind is strong and healthy, a person fully aware of humanity and sensitively responsive to humanity's strengths and weaknesses.

The educational objectives of the University are to develop a sound philosophy of life through an understanding of spiritual, physical, intellectual, moral, social, and
aesthetic aims and values. It strives to develop scholarship and continued professional growth, a well-balanced personality, and an attitude of constant evaluation of oneself as an individual and as a member of the community.

Duquesne offers a wide variety of programs, courses, and curricula from which individuals may select freely in accordance with their desires and capabilities. In emphasizing the relationship of education to the social, cultural, and economic aspects of life, it seeks to produce graduates who, upon entering their chosen careers, will be effectively prepared to discharge their obligations to God, to their community, and to themselves as intellectual and moral beings.

THE UNIVERSITY SETTING

Duquesne's hilltop campus is a short five-minute walk from the business shopping, and entertainment districts of downtown Pittsburgh. This new, dynamic "Renaissance City" is still one of the largest steel-producing cities of the world—but today it is so much more. Pittsburgh is a center for the fine arts, as well as the home of major-league baseball, football, hockey, and tennis teams.

Students from Duquesne and the eight other colleges and universities in the area attend performances of the world renowned Pittsburgh Symphony Orchestra, the Pittsburgh Opera, and the Pittsburgh Ballet Company in elegant Heinz Hall. In the summer the American Wind Symphony offers concerts on Pittsburgh's riversides. Other seasonal events enjoyed by everyone are the International Folk Festival and the Three Rivers Arts Festival. The theatregoer has a choice of entertainment which includes legitimate, commercial and summer theater.

For fun and relaxation, Duquesne students can visit the Highland Park Zoo, the Conservatory-Avari, Buhl Planetarium, Carnegie Museum, and Phipps Conservatory. Directly across the river from campus is Mount Washington, which is approached by roadway and two inclines, and offers a breathtaking view of the city and its surroundings.

Pittsburgh also has year-round sporting events. The Pittsburgh Pirates and the Steelers provide major-league baseball and football excitement in the new Three Rivers Stadium. Duquesne's nationally known basketball team, the "Dukes," plays in the Civic Arena—famous for its immense movable dome.

In the area of participatory sports, golf, riding, fishing, and skiing are all available within a half-hour drive of the city.

ACADEMIC YEAR AND SUMMER SESSIONS

The regular year is divided into a Fall and a Spring Semester of 15 weeks each. In addition, selected courses are offered in summer sessions that vary in length from three to eight weeks.

PHYSICAL FACILITIES

The Administration Building "Old Main," houses the administrative offices of the University, the Office of Admissions, Testing Bureau, Institute of African Affairs, Institute of Man, and the campus Radio Station WDUQ. Adjoining this building is the University Chapel which offers Mass daily.
ROCKWELL HALL is the home of the Schools of Business and Administration and the School of Law. Its Business Simulation Laboratory contains 12 conference rooms which are equipped with television cameras and microphones that make possible observation and recording of the activity in the individual conference rooms. The Law School's extensive library is open 24 hours a day.

ST ANNE HALL, a women's residence with a capacity of 324 students, is air-conditioned, has its own laundry, as well as a number of lounges, television rooms, a recreation room, and a snack room. Single and double rooms are available.

ST MARTIN HALL, a 14-story residence, provides modern housing for 560 men. Laundry facilities and a reading-TV lounge are found on each floor. A central recreation area is on the second floor.

TRINITY HALL serves as the residence for the Holy Ghost Fathers.

UNIVERSITY HALL is currently headquarters for the Air Force and Army ROTC Departments. It also houses the Women's Recreation and Athletics Office, gymnasium, and simnastics room.

ACCREDITATION AND AFFILIATION

UNIVERSITY
Accreditation
State Board of Education of the Pennsylvania Department of Education
Middle States Association of Colleges and Secondary Schools

Membership
American Association of Collegiate Registrars and Admissions Officers
American Association of Urban Universities
American Council on Education
Association of American Colleges
Association of College Admissions Counselors
Catholic Educational Association of Pennsylvania
Commission for Independent Colleges and Universities
National Association of Student Personnel Administrators
National Catholic Educational Association
National Commission on Accrediting
Pittsburgh Council on Higher Education

SCHOOL OF BUSINESS AND ADMINISTRATION
Accreditation
American Assembly of Collegiate Schools of Business

Membership
Association for University Business and Economic Research
Middle Atlantic Association of Colleges of Business

SCHOOL OF EDUCATION
Accreditation
National Council for Accreditation of Teacher Education
Approved Program Approach of the Pennsylvania Department of Education

COLLEGE OF LIBERAL ARTS AND SCIENCES
Accreditation
American Chemical Society

SCHOOL OF MUSIC
Accreditation
National Association of Schools of Music
National Council for Accreditation of Teacher Education

Membership
Association of American Choruses
Friends of the Music Library
National Association of Schools of Music
National Catholic Music Educators Association

SCHOOL OF NURSING
Accreditation
National League for Nursing
Pennsylvania State Board of Nurse Examiners

Membership
Council of Baccalaureate and Higher Degree Programs
National League for Nursing

SCHOOL OF PHARMACY
Accreditation
Pennsylvania State Board of Pharmacy
American Council of Pharmaceutical Education

Membership
American Association of Colleges of Pharmacy
Admission

OFFICE
The Office of Admissions is located on the second floor of the Administration Building.

Telephone (412) 434-6220, 434-6221, 434-6222.
Office hours Monday through Friday from 8:30 AM to 4:30 PM and on Saturday from 9:00 AM to 12:00 Noon.

POLICIES
It is the policy of Duquesne University to admit applicants who are best qualified to profit from opportunities which the University offers for intellectual, spiritual, and social growth. In general, admission is based upon past academic performance, scholastic ability, and personal characteristics. Information about religious preference, racial characteristics, and ethnic origin is not taken into consideration by the Committee on Admissions.

ENTRANCE REQUIREMENTS
1. A candidate must have been graduated from an approved secondary school in the upper three-fifths of the class, and must have demonstrated exemplary personal conduct in that institution. Applicants who have not completed four years of high school must submit a High School Equivalent Diploma issued by the Pennsylvania Department of Education.

2. High school curriculum must include 16 units distributed as follows: four units in English, eight units in any combination from the areas of social studies, language, mathematics, and science, and four elective units for which the secondary school offers credit toward graduation. In specific instances, and at the discretion of the Committee on Admissions, the genuine equivalent of these requirements may be accepted in lieu of the precise requirements specified. (Note: Candidates planning to enroll in Pharmacy, Pre-Dental, or Pre-Medical programs, Medical Technology, Radiological Health, or as science or mathematics majors should have completed a minimum of seven units in mathematics and sciences.)

3. Scores in accordance with the standards adhered to by the University must be presented for the required College Entrance Examination Board Scholastic Aptitude Test (SAT) or The American College Testing Program (ACT). (Note: For admission to the School of Music, an audition is required.)

ROLLING ADMISSION
According to the Rolling Admission Plan, as soon as an applicant's credentials are received, they are evaluated and notification of the decision of the Committee is sent to the applicant. Duquesne University subscribes to this plan. Generally, a student will be notified upon receipt of senior SAT or ACT scores and the first marking period grades for the senior year.

APPLICATION PROCEDURES

NEW FRESHMEN
Application should be addressed to the Director of Admissions, Duquesne University, Pittsburgh, Pennsylvania 15219. It may be submitted at any time during the candidate's senior year up to July 1, with admittance to Duquesne University to be initiated in November of the candidate's senior year.

The application procedure is as follows:
1. Obtain, complete, and file the Application for Admission with the Office of Admissions.
2. Include the $20 non-refundable application fee with the application form. No application will be processed for consideration by the Committee on Admissions unless accompanied by the required fee.
3. Request the secondary school principal or guidance counselor to submit a transcript of the candidate's academic record.
4. Complete the required SAT or ACT examination during the spring of junior year or fall of senior year. It is the personal responsibility of each candidate to have test scores forwarded to the University.
5. An interview is highly recommended for prospective freshmen.
6. If accepted, submit non-refundable tuition deposit by May 1 of senior year.

It is the responsibility of the applicant to arrange to have all supporting credentials on file with the Office of Admissions and Financial Aid Office prior to the deadline dates.

EARLY ADMISSION
Although the University believes that most students profit from four years in the secondary school, the Early Admission Plan is open to outstanding students. This is a plan whereby unusually able and mature candidates who have completed less than four years of a secondary school program may apply for consideration to begin college after their junior year. The high school diploma is awarded following successful completion of their freshman year in college.

FOREIGN STUDENTS
Foreign students are expected to meet the requirements for admission from secondary schools or from other colleges and universities as outlined below. In every instance, Duquesne must receive complete and official transcripts of all degrees.
diplomas, marks sheets, and examination records six months prior to the student's expected date of entrance. Records should be in original or notarized photostatic copies, accompanied by certified English translations.

1. Academic: The student must rank in the upper half of his secondary school graduating class and must present satisfactory scores from the SAT (Scholastic Aptitude Test).

2. English Proficiency: Students coming directly from foreign countries are required to take the TOEFL (Test of English as a Foreign Language)* in their country before a decision may be made on their admission to the University. Proficiency in English must be demonstrated in listening and reading comprehension and writing ability. Students who reside in this country at the time of application may be requested to take the TOEFL at the discretion of the Admissions Office.

3. Financial Statement: They must present documented evidence that they have in their possession adequate funds for study at Duquesne. The University does not have a program of undergraduate scholarship assistance for foreign students.


Upon completion of all academic and non-academic requirements, the Foreign Student Advisor will issue the necessary documents for obtaining a student visa to the United States. To complete on-campus registration, foreign students who are admitted should plan to arrive one week before the term begins.

POST-GRADUATE STUDENTS

A Post-graduate student must submit a Post-graduate application if the Bachelor's degree was received from an institution other than Duquesne. If the bachelor's degree was received from Duquesne an application for re-admission must be submitted. In both instances, proof of degree is required either by an official transcript or a certificate of graduation.

READMISSION

Any student who withdraws from the University must apply for readmission through the Office of Admissions regardless of the time interval involved since withdrawal. A student who is dismissed for academic reasons must appeal to the Committee on Student Standing of the school to which application for admission or readmission is being made.

TRANSFER STUDENTS

It is the responsibility of persons who apply as transfer students, temporary transfer students, post-graduate students, foreign students, readmission students, and

*A For information about testing in any country, the Educational Testing Service, Princeton, New Jersey 08540, should be contacted.

ADMISSION

Veterans to arrange to have all supporting credentials on file with the Office of Admissions and the Financial Aid Office before deadline dates.

A student who wishes to transfer from another college or university must have the complete transcripts of high school and college records forwarded to the Office of Admissions and must submit an application for admission. When accepted, the student must supply to the dean of his school a description of the courses which appear on the transcript. The student should contact the Admissions Office of his school for placement and curriculum planning following a reasonable period for evaluation of transcript. A veteran should take his discharge papers to the appropriate officer in the R O T C for credit evaluation.

The College of Liberal Arts and Sciences and Schools of Education and Pharmacy award 60 semester hours of credit to accepted transfer applicants who have an Associate Degree in Arts from a regionally accredited two-year institution.

Students transferring from a nationally accredited institution must present academic records which show an overall average of a C (2.0 on a 4.0 quality point system)

Persons seeking admission to the University as transfer students from a state-approved college which does not have regional accreditation must have attained a cumulative average of 3.0 based on a 4.0 quality point system. In addition, such prospective students must take the College Entrance Examination Board tests and attain the appropriate scores.

An interview is required of all transfer students.

TEMPORARY TRANSFER STUDENTS

No Temporary Transfer Student will be granted admission without formal application and a completed Temporary Transfer form from authorized personnel. Exceptions can be made if an official transcript is received in lieu of a Temporary Transfer form. In this case acceptance is provisional.

No Temporary Transfer shall be permitted to register for more than two semesters without making arrangements to become a permanent transfer.

An interview is required of Temporary Transfer applicants before attendance for their third semester.

VETERANS

All veterans with a high school diploma or its equivalent, who have not been dismissed from a college after serving active duty, would be eligible to enroll in Duquesne for one semester. Veterans who have no previous college work and have never taken the CEEB SAT must submit such scores before completing the first semester of attendance at the University. They must maintain a C average (2.0) or above in the first semester to continue in good academic standing at the University.

ADVANCED PLACEMENT

Students who have followed the College Entrance Examination Board college level program in secondary schools and have performed satisfactorily in the advanced placement examinations are eligible for advanced placement.

Duquesne University
grants credit, as well as placement, for achievement that merits such consideration. Subjects included in the program are English composition, history, history of art, languages, Latin, mathematics A B, mathematics B C, physics, chemistry, biology.

Credit will be given on a minimum advanced placement score determined yearly by the College of Liberal Arts and Sciences. For current information about the minimal score acceptable for each subject and the credits granted, consult with the University’s Director of Testing or the Office of Academic Advisement, College of Liberal Arts and Sciences.

Applicants who hope to receive advanced placement credits must request that scores be sent to the University.

COLLEGE LEVEL EXAMINATION PROGRAM
The specific examinations for which the College of Liberal Arts and Sciences will award credit, with acceptable scores, are:

1. *General Examinations* - Humanities, social sciences
2. *Subject Examinations* - American government, American history, analysis and interpretation of literature, biology college algebra college algebra-trigonometry, educational psychology, English composition, general chemistry, general psychology, geography introductory calculus, introductory sociology, microbiology, micro-economics, macro-economics, statistics, western civilization

The University continues to evaluate CLEP subject scores and performance at Duquesne. For current information about minimal acceptable scores and for credits granted, consult the Director of Testing, Testing Bureau, Duquesne University.

Information about the time and place that examinations are given may be obtained from the University Testing Bureau or the College Level Examination Program, Box 977, Princeton, New Jersey 08540

CREDIT HOUR BANK
The Credit Hour Bank is designed for high school students and adults who would like to sample college courses prior to official enrollment. Credits completed in the Credit Hour Bank are held in escrow until the applicant applies and fulfills all regular admission requirements. Upon regular admittance, all credits are then evaluated toward a degree program.

To apply to the Credit Hour Bank Program, write Credit Hour Bank across the top of an application, submit the $20 non-refundable application fee, and attach a letter indicating full comprehension and acceptance of the conditions of the Credit Hour Bank Program.

Generally, all first year courses in the College of Liberal Arts and Sciences are open to Credit Hour Bank students.

Expenses

FEES AND TUITION

The University reserves the right to modify these charges if exigencies require such action. All charges are for one semester only, for yearly total, double amounts where applicable.

<table>
<thead>
<tr>
<th>Fee</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Application Fee (non-refundable)</td>
<td>$20.00</td>
</tr>
<tr>
<td>Matriculation Deposit (non-refundable)</td>
<td>$100.00</td>
</tr>
<tr>
<td>Residence Hall Pre-Payment</td>
<td>$100.00</td>
</tr>
<tr>
<td>Residence Hall Damage Deposit</td>
<td>$50.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tuition and Fee Charges</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Tuition for each semester</td>
<td>$76.00</td>
</tr>
<tr>
<td>Graduate Tuition for each semester</td>
<td>$81.00</td>
</tr>
<tr>
<td>University Fee 12 or more credits</td>
<td>$125.00</td>
</tr>
<tr>
<td>9 to 11 credits</td>
<td>$88.00</td>
</tr>
<tr>
<td>5 to 8 credits</td>
<td>$62.00</td>
</tr>
<tr>
<td>0 to 4 credits</td>
<td>$33.00</td>
</tr>
<tr>
<td>Undergraduate Music Student Fee when</td>
<td>$100.00</td>
</tr>
<tr>
<td>carrying 12 or more credits</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Business and Administration</td>
<td></td>
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<tr>
<td>Student Fee</td>
<td></td>
</tr>
<tr>
<td>12 or more credits</td>
<td>$5.00</td>
</tr>
<tr>
<td>less than 12 credits</td>
<td>$3.00</td>
</tr>
<tr>
<td>Undergraduate Pharmacy Student Activities</td>
<td>$25.00</td>
</tr>
<tr>
<td>(Third, Fourth, and Fifth Year Students)</td>
<td></td>
</tr>
<tr>
<td>Late Registration</td>
<td>$10.00</td>
</tr>
<tr>
<td>Removal of 1 Grade Fee</td>
<td>$5.00</td>
</tr>
<tr>
<td>Change of Schedule Fee</td>
<td>$5.00</td>
</tr>
<tr>
<td>Credit by Examination for processing</td>
<td>$10.00</td>
</tr>
<tr>
<td>each form</td>
<td></td>
</tr>
</tbody>
</table>

LABORATORY FEES

All figures are for one semester only, for yearly total, double amounts where applicable.

*Charged on each semester registration
Anatomy and Physiology 209, 210  $ 20.00
Chemistry Laboratory  $ 20.00
Biology Laboratory  $ 20.00
Physics Laboratory  $ 10.00
(One $5.00 breakage card a semester will cover all laboratory courses in Anatomy, Chemistry, Biology and Physics)

Psychology 356, 366  $ 7.00
Journalism 267, 268, 367, 368, 375, 405, 409, 413  $ 5.00
Journalism 378  $ 10.00
Language Laboratory 201, 202  $ 5.00
Language Laboratory 101, 102, 301, 302  $ 10.00
ROTC Leadership Laboratory  $ 5.00
School of Pharmacy Laboratories (each)  $ 30.00

**SUMMER AND SPECIAL SESSION TUITION AND FEE CHARGES**

Undergraduate Tuition  for each semester hour credit  $ 76.00
Graduate Tuition  for each semester hour credit  $ 81.00
University Fee  for 1 to 4 credits  $ 33.00
University Fee  for 5 to 8 credits  $ 62.00
University Fee  for 9 to 11 credits  $ 88.00
University Fee  for 12 or more credits  $ 125.00

**GRADUATION FEES**

Bachelor Degree  $ 30.00
Master Degree  $ 40.00
Doctor of Pharmacy Degree  $ 40.00
Juris Doctor Degree  $ 40.00
Doctor of Philosophy Degree  $ 55.00
Thesis Binding Fee—Doctoral Dissertation  $ 40.00
Thesis Binding Fee Master Thesis  $ 25.00

**TUITION REFUNDS—REGULAR SESSION AND SUMMER SESSIONS**

After the last day for change of schedule, as announced in the Academic Calendar, no tuition shall be refunded for any course the student may discontinue except when a complete withdrawal from the University is authorized. Refunds for a complete withdrawal are made in accordance with the following schedule

<table>
<thead>
<tr>
<th>Time of Withdrawal</th>
<th>Refund</th>
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<tbody>
<tr>
<td>First Week</td>
<td>80%</td>
</tr>
<tr>
<td>Second Week</td>
<td>80%</td>
</tr>
<tr>
<td>Third Week</td>
<td>40%</td>
</tr>
<tr>
<td>Fourth Week</td>
<td>20%</td>
</tr>
<tr>
<td>After the Fourth Week</td>
<td>0%</td>
</tr>
</tbody>
</table>

(This schedule applies to tuition only—fees are not refunded)

**SUMMER SESSION**

First Week of Class  Refund  60%
Second Week  20%
After Second Week  0%
(This schedule applies to tuition only—fees are not refunded)

**ROOM AND BOARD**

The request for on-campus residence is made on the same form used for application for admission to the University. After the student has completed the admission procedure and has paid the matriculation deposit, the residency request is referred automatically to the Director of Residence Life. The request is processed and necessary residency forms are forwarded to the student.

The University requires that a prepayment of $100, which is applicable to the following semester’s room and board account, accompany all applications for room reservations or renewals.

In addition, a $50 damage deposit must accompany each initial housing contract. This deposit is retained by the University throughout the period of residency. If no damage deductions are incurred and the room key and ID card returned, the full amount of the deposit is refunded at the final termination of residency.

Reservations are made on a semester basis—August to December, January to May. Rooms may be occupied no earlier than noon of the day preceding the beginning of the orientation or registration periods.

All students occupying rooms in the University residence halls are required to take their meals at the Resident Dining Hall. Charges are for 20 meals a week, with meals served commencing with the evening meal of the day before the first day of classes.

All resident students must present evidence of health and accident insurance coverage, such coverage is available through the University.

The University reserves the right to modify these charges if exigencies require such action.

**Regular Session—Room and Board (20 meals a week)**

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<tbody>
<tr>
<td>Single</td>
<td>$907.50</td>
</tr>
<tr>
<td>Double</td>
<td>$702.50</td>
</tr>
</tbody>
</table>

**Summer Sessions—Room and Board**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Eight Weeks</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>$388.00</td>
</tr>
<tr>
<td>Double</td>
<td>$344.00</td>
</tr>
<tr>
<td>Six Weeks</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>$291.00</td>
</tr>
<tr>
<td>Double</td>
<td>$258.00</td>
</tr>
</tbody>
</table>

*Those desiring residency for the Summer Sessions should make reservations with the Director of Residence Life no later than May 31. A deposit of $20 must accompany each application. After occupancy, the deposit is applied toward the room and board expenses. This deposit is not refunded if the room is not occupied.*
Workshops (a week)

- Single: $48.50
- Double: $43.00

**ROOM AND BOARD REFUND**

No refund of room charges will be made where withdrawal occurs after the opening of class.

In the event of withdrawal, board will be refunded at the rate of 75% of the balance left on the student's meal plan up until mid-semester. After the mid-semester point, no refund will be made.

**PAYMENTS AND OTHER CREDITS**

**DEFERRED PAYMENT**

All charges for tuition, fees, room, and board, less financial assistance authorized by the Financial Aid Office, are payable at registration.

**STUDENT FINANCING PROGRAM**

The University provides a deferred plan for the payment of tuition and fees. To qualify for the plan, all charges for previous semesters must be paid in full. The program provides financing up to 50% of the total current semester charges, less financial aid and other prepayments, to be repaid in two equal installments with interest on the unpaid balance of 15% a year.

A late charge of $10 a month plus interest at the rate of 15% annually will be assessed for any amount which is not paid when due.

**BANK CREDIT CARDS**

Bank Americard and Master Charge are accepted for payment of tuition, fees, room, and board.

**CASHING CHECKS**

A student may cash a check up to a maximum of $50 at the Cashier's Office between 9:00 AM and 4:00 PM, Monday through Friday, except during registration, with a validated ID Card.

**BAD CHECKS**

It is the policy of the University to charge bad checks to the student who cashes them regardless of the maker. A $3.00 service charge will be assessed on checks that are returned from a bank for lack of funds. In addition, monthly bills will reflect a $10 penalty plus 15% a year on the balance due.

**SCHOLARSHIPS**

A student may have a scholarship to credit towards his or her tuition and fees. This scholarship will only be honored by the cashier when it is presented on a Scholarship Voucher prepared by the Scholarship and Financial Assistance Office.

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**Financial Aid**

Duquesne University subscribes to the philosophy that “no student should be denied the education of his choice for lack of sufficient financial resources.” The Office of Student Financial Aid has been established to help students locate the financial support they require. While the expense of education reflects inflationary trends of the general economy, the sources, programs, and funds available to help meet these expenses are substantially increasing. Students and parents should not be overwhelmed by the variety and apparent complexities of modern student financial aid. Rather, a patient and thorough examination of aid opportunities should be undertaken to locate the most advantageous forms of assistance available to the individual student.

**PRINCIPLES OF AID**

**HISTORY**

Financial Aid originates in the generosity of both individuals and institutions toward promising but needy scholars. Today, while this tradition continues, there is in addition the major influence of government, both state and federal, which provides mass programs of student financial aid available in one form or another to virtually every college student. The trend of government programs is increasing availability of assistance to a broader range of students. Today, over 75 percent of full-time students at the University are aid recipients.

**FINANCIAL NEED**

The major criterion of most aid programs is the student's need for funds. Parents and the student are expected to pay the expenses of education. However, to the extent they cannot reasonably be expected to meet this expense, there is a demonstrated financial need or eligibility for aid. Methods of determining need differ among aid sources, but all have the common objective of identifying the difference between educational costs and the individual family's ability to contribute to these costs. The costs considered include tuition, fees, room and board or an allowance for maintenance at home, travel or commuting expenses, books, and necessary personal expenditures. Need analysis presumes the family's ability to contribute to these costs will approximate that of families of similar size and financial strength, with consideration given for individual circumstances. Where need is a factor, it is extremely important all financial information reported by the family...
be complete, accurate, and updated for any major changes. Such information is considered and treated confidentially by aid administrators.

AWARD CONDITIONS
All financial aid awards are subject to terms and conditions set forth in applications and award notifications. It is important the student carefully read all information provided by aid sources and promptly notify them of changes pertinent to their applications or awards.

STUDENT SELF-HELP
As the beneficiary of higher education, the student is expected to accept at least partial financial responsibility for the cost. This principle is reflected in both the determination of need and the types of aid available. In determining need, consideration is given for at least a minimum contribution to cost from the student's summer earnings, savings, and benefits such as social security. Two types of self-help programs of aid are available: loans and work. Student loans provide rates, terms, and conditions far superior to those offered by commercial lenders, and offer the student the opportunity to help himself by accepting future repayment responsibility. Student employment programs provide the opportunity to meet educational costs through earnings.

GIFT ASSISTANCE
Non-repayable scholarships or grants are available in accordance with one or a combination of the following criteria: 1) Financial Need, 2) Superior Academic Potential or Achievement, 3) Economic Opportunity, which aims to provide economic parity for the student with very limited family resources, and whose need is therefore exceptional, and 4) Service Recognition, which reflects proficiency in a specialized field such as music, or services such as those provided by certain officers of student government, or for future service such as an officer in the Armed Forces.

MEETING STUDENT NEED
The Financial Aid Office attempts to provide aid equal to need for all student applicants. Frequently, this requires an "aid package" consisting of funds from multiple aid sources and programs. Those programs which are under the direct control of the Aid Office are not usually sufficient to meet full need or provide an aid package of the most beneficial composition. It is advisable and expected that students who apply for assistance to the University will also apply to federal, state, and other available sources.

PROGRAM FUNDING
All programs of financial aid are subject to limitations of available funds. Therefore, in addition to the eligibility requirements of a particular program, assistance depends upon the level of funding in the program. First consideration always goes to applicants who apply within deadline dates and who provide complete and accurate information. All programs are subject to change, elimination, or replacement. Changes in government programs are routine, since these require periodic legislative review.

CURRENT INFORMATION
Because programs of aid and conditions of eligibility do change from time to time, the student should attempt to keep abreast of new developments. The high school guidance office, the University Financial Aid Office, and the office of education in the student's home state are excellent sources of information. Annual publications of the College Scholarship Service or the American College Testing Service (available at counseling and aid offices) provide current information on programs and eligibility requirements. Students should avoid the error of disqualifying themselves for specific forms of aid because of hearsay or dated information. A decision not to apply to a particular aid source should be made only upon the advice of an aid officer.

SOURCES OF AID
Source One Office of Financial Aid

APPLICATION PROCEDURE
1. Applicants must be currently enrolled in the University or be in the process of applying for admission.
2. Obtain the formal application for financial assistance from the Office of Student Financial Aid, Duquesne University, Pittsburgh, Pennsylvania, 15219. Complete this application form and submit it to the Financial Aid Office prior to the following deadline dates: Incoming Freshmen and transfers as early as possible in senior year but not later than March 1, renewal and upperclass applicants no later than May 1 for the following academic year, or December 1 for Spring consideration. Late applicants will be considered only to the extent available funds and time permit.
3. Obtain from the high school guidance office or the Financial Aid Office a Parent's Confidential Statement. Complete and submit it according to instructions to the College Scholarship Service. Statements take four to eight weeks to process and therefore should be submitted as early as possible.
4. Reply to this application, if filed by deadline dates, should be anticipated as follows: Freshmen and new transfers 60 days after PCS filing date, between mid-February and late March (providing student has been accepted for admission). Upperclassmen and graduate students replies should be anticipated in June or July.
5. Applications must be renewed annually.

PROGRAMS OF AID
University Scholars Awards. The University awards approximately 15 scholarships annually to exceptional high school scholars. These awards are not based on a demonstrated need and may be renewed each year provided the student maintains a high level of academic achievement. Renewal amounts may vary relative to the degree of achievement.
Competitive Scholarships These awards are given to students of outstanding ability and achievement who also demonstrate financial need. They are renewable yearly based on continued academic achievement, and continued demonstrated need. Continued academic achievement is normally reflected by a cumulative Quality Point Average of 3.0 or above. Renewal amounts may vary relative to the degree of achievement and level of need.

National Direct Student Loans National Direct Loans are available to both full-time and half-time students who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the U.S. Office of Education. Loan repayment does not begin until nine months after the borrower terminates at least half-time study, and is scheduled over a ten year period at a three percent interest rate. Additional deferment of repayment is extended to those serving in the Armed Forces, Peace Corps, and VISTA. Borrowers who serve as teachers of handicapped children or in schools designated as having high enrollment of low-income students are extended cancellation privileges in lieu of cash repayment. Specific terms may be obtained by requesting a blank Promissory Note from the Aid Office.

Nurses Training Act Loans Nurses Training Act Loans are available to both full-time and half-time nursing students who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the Public Health Service. Loan repayment does not begin until nine months after the borrower terminates at least half-time study in nursing, and is scheduled over a ten-year period at a three percent interest rate. Cancellation of loan amounts, to a maximum of 85 percent, is available for professional nursing service in public or non-profit institutions.

Health Professions Loans Health Profession Student Loans are available to full-time undergraduate students of Pharmacy who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the Public Health Service. Loan repayment does not begin until one year after the student ceases to pursue a full-time course of study in pharmacy. Additional deferment of repayment is available for periods of active duty in a uniformed service of the U.S., and for periods of advanced professional training. Specific terms may be obtained by requesting a blank Promissory Note from the Aid Office.

Supplemental Educational Opportunity Grants Federal grant assistance is available to full or half-time students with exceptional financial need. Recipients are selected in accordance with guidelines published by the U.S. Office of Education.

Nursing Scholarships Scholarship assistance is available to full or half-time undergraduate nursing students with exceptional financial need. Recipients are selected in accordance with guidelines published by the Public Health Service.

Health Profession Scholarships Scholarship assistance is available to full-time undergraduate students with exceptional financial need who are enrolled in the Bachelor of Science in Pharmacy curriculum. Recipients are selected in accordance with guidelines published by the Public Health Service.

Work-Study Programs Two programs of employment are available to financial aid applicants. The first is the College Work-Study Program, which is financed principally by Federal appropriations and awarded as aid in accordance with guidelines published by the U.S. Office of Education. Both on-campus and off-campus jobs are available. The second program is referred to as the General Program which is 100 percent funded by the University and entails on-campus jobs only. In addition to considerations of financial aid, placement in a part-time position depends upon the student's qualifications for performing successfully in the job. Student employment is limited to a maximum of fifteen working hours a week when classes are in session.

Source Two Basic Educational Opportunity Grants
Grant assistance directly from the federal government is available through this program. The concept is to guarantee every full-time undergraduate college student minimum financial support of one-half college costs to a maximum of $1,400. Such support would come first from the student and his parents, the difference to consist of a Basic Grant. Applications may be obtained from high school guidance offices, college aid offices, or branches of the U.S. Post Office.

Source Three State Grant Assistance
General: Depending upon the student's legal state of residence, direct grant assistance from the state may be available for study at Duquesne University. Non-Pennsylvanians should contact their high school guidance counselor or state department of education to determine if grants are available, and to determine application procedures.

Pennsylvania State Grants: At current levels, grants ranging from $200 to $1,200 a year are available to full-time undergraduate students, based on considerations of financial need. Applications are normally available in November prior to the academic year in which aid is required. They may be obtained from high school guidance offices or the Pennsylvania Higher Education Assistance Agency (PHEAA) in Harrisburg. Deadline is normally May 1 for freshmen and upperclassmen. In recent years more than 90 percent of all applicants to this program from the University received assistance.

Source Four Guaranty Student Loans
This program provides long-term, low-interest student loans available through the cooperative efforts of Federal and state governments and participating private lending institutions. Depending upon the policy of particular states
and lenders, loans to a maximum of $1500 or $2500 a year are available for undergraduate study. Loan repayment does not begin until nine months after the borrower terminates his course of study and may be scheduled for a period up to ten years, at a seven percent interest rate. Applications and information are available from participating lenders, which include banks, savings and loan associations, credit unions, and similar financial institutions. A 60-day processing period should be anticipated. Guaranty Loans are generally considered an alternate or supplemental source of assistance to all other forms of aid. Students applying for other forms of assistance should apply for a Guaranty Loan only after replies have been received from alternate sources to which they have applied, or with the advice of an aid officer.

Source Five  Other Scholarships and Loans

In addition to mass programs of aid previously described, financial assistance may be obtained from a wide variety of sources. Since these tend to be exclusive, it is not possible to provide specific information. In general the student seeking potential sources of aid may inquire of 1) high school guidance officers, 2) library publications such as Financial Aids for Undergraduate Students, published by College Opportunities Unlimited, Inc. 3) parents' employers or labor unions, 4) fraternal, social, religious, or professional organizations, 5) major organizations utilizing the skills of the field for which the student is preparing, and 6) specific departments within the University (listing follows)

AID FROM DEPARTMENTS AND SCHOOLS

COLLEGE OF LIBERAL ARTS AND SCIENCES

Carroll Scholarship in Creative Writing  Established in memory of Monsignor Walter T. Carroll and in tribute to Bishops Coleman F. and Howard J. Carroll, the purpose of this scholarship is to provide some deserving student, who has already expressed talent in writing, with sufficient financial aid. The exact sum to be determined by the committee, in his Senior year he may devote the time necessary to develop these talents. The award is administered by the Carroll Scholarship Committee of the English Department. Interested students should contact the committee before January 15.

Pittsburgh Communications Foundation Loans  The Foundation has established a $3000 loan fund for deserving junior and senior full-time students in the Department of Journalism. Students will be required to repay the loan within two years after graduation at three percent a year. Such loans will be granted on the recommendation of the Chairman of the Journalism Department assisted by the Journalism faculty. Loan inquiries and applications should be made to the Chairman of the Department of Journalism.

The Eleanor Polis Capone Memorial Award  The award honors, in perpetuity, the memory of Eleanor P. Capone. The scholarship consists of the total annual income from a restricted growth endowment fund and is awarded to an undergraduate student enrolled at the University, who will be selected on the basis of merit in the field of creative writing with need a secondary consideration. Interested students should contact the Chairman, Honors and Awards Committee, English Department, prior to January 15.

The Rev. Joseph A. Lauritis, C.S.Sp., Journalism Scholarship  This is an annual scholarship in tribute to the Rev. Joseph A. Lauritis, C.S.Sp., founder of the Department of Journalism and the University's radio station, WDUQ-FM. The award is administered by the Lauritis Scholarship Committee of Journalism faculty, alumni, and friends.

FINANCIAL AID

SCHOOL OF BUSINESS AND ADMINISTRATION

Gulf Oil Corporation Honors Scholarships  This program provides grants of up to $1500 a year to outstanding undergraduate students in the field which may eventually qualify them for employment in the business world and, more particularly, in petroleum and related industries. Normally, one scholarship is provided for each class, freshman through senior.

Law Enforcement Assistance Programs (LEEP)  Programs of grants and loans for students of criminal justice are administered by the Law Enforcement Assistance Administration. Preference is given the student who is currently a law enforcement officer pursuing a degree in law enforcement.

SCHOOL OF EDUCATION

Helen S. Platt Memorial Scholarship  The Children's Aid Society of Jewish Women of Pittsburgh, Pennsylvania will award a financial scholarship for a student majoring in Special Education. Normally, one scholarship is awarded each year. Interested students should contact the Chairman, Honors and Awards Committee, prior to January 15.

Lawrence Roche Memorial Scholarship  The award will be made to a student who, as a junior in the School of Education, has in the judgment of the Awards Committee, demonstrated those qualities of scholarship, character, and professionalism which merit special recognition. The award is a minimum quality point average of 3.0 at the time of application. The student must be officially registered as a senior in the School of Education at the time of receiving the award. The award is a minimum quality point average of 3.0 at the time of application. The student must be officially registered as a senior in the School of Education at the time of receiving the award. Applications must be submitted to the Dean's office no later than March 1.

SCHOOL OF MUSIC

Women's Advisory Board Scholarships  This fund provides scholarships in varying amounts each year to vocal performers. These scholarships are available to entering freshmen and upperclassmen.

George Barrere Memorial Scholarship  The Pittsburgh Flute Club offers a
scholarship in flute in memory of George Barrere, founder of the first flute club in the United States. This $300 scholarship is awarded to a freshman or a sophomore flute major.

Polish Arts League Scholarship: This award is made annually by the Polish Arts League of Pittsburgh to an outstanding performer in the School of Music. Preference will be given to a student of Polish ancestry. Other students will not be excluded from consideration.

Music School Scholarships: These awards are made possible by donations from individuals and organizations in appreciation of performances by School of Music students.

University Solo Wind Scholarships: These scholarships in varying amounts are awarded only to potential “First chair” performers.

University String Scholarships: These scholarships tuition and applied music fees have been established by the University to promote the study of string instruments.

Pittsburgh Flute Club Award: This award is given to an outstanding woodwind student.

University Piano Scholarships: These scholarships are awarded to students showing outstanding talent in piano.

Ezio Pinza Memorial Scholarship: This award is presented to an outstanding vocal student, male or female, between the ages of 17 and 25 who has not completed an undergraduate degree.

SCHOOL OF NURSING

Army and Navy Nurse Corps Student Programs: Students may apply in the sophomore year for appointments in the Army Student Nurse Program or the Navy Nurse Candidate Program. Appointees receive tuition, fees, and salary for the last two years of the baccalaureate program, and in return serve on active duty in the Navy Corps for three years. Students who receive appointments for only the senior year, serve for two years in the Corps. More information is available from local recruiting offices and from the School of Nursing.

Professional Nurse Traineeship Program: The United States Public Health Service provides a limited number of traineeships for qualified registered nurse students. There are two types:
1. Special Purpose Traineeships: For selected registered nurse students who can complete the requirements for the baccalaureate degree within one year and who are preparing for positions in public health nursing.
2. Professional Nurse Traineeships: For selected registered nurse students who can complete the requirements for the baccalaureate degree within one year, who have been recently employed as nursing administrator, supervisor (including head nurse), or teacher, and who can qualify for admission to graduate study.

National Mental Health Training Program: The National Institute of Mental Health provides a limited number of traineeships for qualified students who have an interest in enrolling in a graduate program in psychiatric-mental health nursing upon completion of the baccalaureate program. This traineeship is available in the final two years of baccalaureate study.

Repayment of Educational Indebtedness: Upon completion of professional training, nurses may enter an agreement with the Secretary of Health Education and Welfare to practice the profession of nursing in an area determined to have a shortage of nurses. Minimum agreement is for two years, with a third year optional. In return for such service, the federal government will repay 60 percent of all bona fide educational indebtedness. For three year service, 85 percent of indebtedness will be repaid.

Other Programs: Two additional programs, Nurses Training Act Loans and Nursing Scholarships, are described under the Scholarship and Loans—General section, page 18.

SCHOOL OF PHARMACY

American Foundation for Pharmaceutical Education: The Foundation annually allocates funds to accredited colleges of pharmacy. The college must provide a sum equal to that requested from the Foundation. Recipients, designated as Scholars of the American Foundation for Pharmaceutical Education, are selected from fourth and fifth year students.

Pennsylvania Rexall Club Scholarships: Scholarship funds are awarded annually to a limited number of Pharmacy students. These scholarships may be continued from year to year provided the recipient ranks in the upper 25 percent of his class during the preceding academic year.

Women of Galen: The Women’s Auxiliary of the Galen Pharmaceutical Society of Pittsburgh annually provides scholarship funds to be awarded to deserving pharmacy students in their last years of attendance in the School of Pharmacy.

American Pharmaceutical Association Women’s Auxiliary Loan Fund: This loan fund was established to support worthy women students in accredited colleges of pharmacy during the last two years of their attendance prior to graduation.

Beaver County Pharmaceutical Association Loan Fund: This revolving loan fund provides financial assistance to students in the School of Pharmacy who are residents of Beaver County, Pennsylvania. Applications are to be made to the Dean of the School of Pharmacy.
Samuel W Curtis Loan Fund  This fund is intended to provide financial assistance for students in the School of Pharmacy.

Joel P Laughlin Scholarship  In the honor of Joel P Laughlin, a fraternity brother whose life was terminated early in his professional program, the Graduate Chapter of Phi Delta Chi annually awards three $200 scholarships to one fraternity brother in each of the three professional years. The recipients must have demonstrated academic achievement and active participation in the functions of the Fraternity.

Mari McPartland Beck Scholarship Award  Scholarship funds are available from earnings on a fund begun by a bequest to the School of Pharmacy in 1970.

John W Dargavel Foundation  Established by the National Association of Retail Druggists in honor of its executive secretary, John W Dargavel, this foundation provides a $200 scholarship to a qualified student in the School of Pharmacy as well as loans to students of pharmacy in their last three years for payment of tuition, fees, and books.

Galen Pharmaceutical Society Loan Fund  This revolving fund was established in 1963 for the purpose of providing financial assistance to worthy students of Pharmacy during times of urgent financial distress.

Fred Schiller Loan Fund  This loan fund was founded by Mr Fred Schiller, Pittsburgh pharmacist, in memory of the late Emanuel Spector, for worthy and qualified students in the School of Pharmacy. This revolving fund makes available tuition loans of varying amounts depending on the applicant's need and general ability.

John Clothier Sims Memorial Fund  This revolving fund, established in 1954, was made possible through the generosity of the friends of the late Mr Sims, executive of Sun Drug Company, Pittsburgh. Partial tuition loans are made available to students under the conditions that apply to the Fred Schiller Loan Fund.

Pittsburgh Graduate Chapter of Kappa Psi Pharmaceutical Fraternity  Maintains a revolving loan fund for members of the undergraduate chapters. Details are available from the School of Pharmacy.

Tau Alumni Chapter of Lambda Kappa Sigma  This professional pharmacy fraternity for women has established financial awards for members in their last three years of the pharmacy program. Awards are based on financial need and participation in the organization.

Repayment of Educational Indebtedness  Upon completion of professional training, pharmacists may enter an agreement with the Secretary of Health Education and Welfare to practice the profession of pharmacy in an area determined to have a shortage of pharmacists. Minimum agreement is for two years, with a third year optional. In return for such services, the federal government will repay 60 percent of all bona fide educational indebtedness. For three year service, 85 percent of indebtedness will be repaid.

Other Programs  Two additional programs, Health Professions Loans and Health Professions Scholarships, are described under the Scholarship and Loans-General section, pages 18 and 19.

RESERVE OFFICER TRAINING (ROTC) SCHOLARSHIPS

Army and Air Force ROTC offer a number of scholarships for cadets enrolled in both the four-year and two-year programs. These scholarships provide for tuition fees, required textbooks, and $100 a month subsistence allowance. Interested high school students who feel they can meet the competitive standards for the scholarships may apply by writing to Army ROTC, Duquesne University, Pittsburgh, Pa 15219. The application and processing period begins in June of the year in which the student completes his junior year of high school.

For cadets already enrolled at Duquesne University, scholarships are available during the sophomore, junior, and senior years. In order to continue to be eligible to receive financial assistance, each scholarship recipient must maintain the academic and personal standards on which original eligibility was based.

*Interested high school seniors must apply prior to December 31 of their senior year.
REGISTRATION

registration for classes has been accomplished in compliance with all academic requirements and procedures.

3 Arrangements have been made to the satisfaction of the University for payment in full of all financial charges, including tuition, fees, and housing charges, all of which are due and payable in full before the beginning of classes.

LATE REGISTRATION

With approval of the appropriate dean and upon payment of the penalty fee, late registration may be permitted for a serious reason, however, no student may be registered and begin attending classes later than the Latest Date for Change of Schedule as announced in the University Academic Calendar.

CROSS-REGISTRATION

Cross-college and -university registration provide opportunities for enriched educational programs, approved by a student's advisor or Dean, for undergraduates at any of the following institutions:

- Allegheny County Community College
- Carlow College
- Carnegie-Mellon University
- Chatham College
- La Roche College
- Pittsburgh Theological Seminary
- Point Park College
- Robert Morris College
- University of Pittsburgh

The opportunity for cross-registration will be available to each full-time student enrolled in any program leading to a bachelor's degree. Full credit and grade will be transferred.

Each college or university shall accept registration in freshman through senior level courses listed by them as open to cross-registration, selected from courses regularly accredited toward baccalaureate programs. First priority in registration shall go to the students of the host college.

The approval of the dean or advisor and registrar from each college or university must be obtained prior to registration. The student's advisor or dean is responsible for assuring eligibility for the course in which the student intends to enroll. Each qualified student may enroll in no more than one course off campus in any one term or semester under this program.

These policies on cross-registration are not effective at this time for enrollments in summer sessions, including the spring term at the University of Pittsburgh.

PROCEDURE FOR CROSS-REGISTRATION

The student should check the listings of offered cross-registration courses. Eligibility to enroll in a course is determined after consultation with the academic advisor. If the student is eligible to enroll, and approval is granted, forms will be initiated which must be signed by the student's advisor. The student then proceeds to the Registrar who must also grant his approval by signing the form and then forwarding it to the host university or college.
DROPPING AND ADDING COURSES

Students are permitted to obtain adjustments of their class schedules during pre-registration, at final registration, and during the first week of class, unless waived by the appropriate Dean; a charge of $5.00 is made for each change form processed. No reduction is made in charges for reduced class schedules obtained after the first week of class (see Academic Calendar for latest date for change of schedule). All changes must be approved by the academic advisor and recorded with the Registrar.

EVENING STUDY

Selected courses, offered evenings each semester, are available to part-time and full-time students, these afford employed persons opportunity to begin study for a degree in certain areas. No bachelor's degree may be completed through evening courses. Persons who wish to begin study toward a degree as part-time students must meet the same requirements and follow the same procedures for admission as those who apply on a regular full-time basis, however, a medical examination is not necessary.

SUMMER SESSION

Any Duquesne University undergraduate student who was granted continuance at the close of the preceding Spring Semester is authorized to register in the Summer Session. Students who were dismissed by their school at the close of the preceding Spring Semester for academic reasons may register for summer classes by permission of the Committee on Student Standing of their school. All students must have their course selections approved by their academic advisor.

Graduate and other former students, including any who withdrew from the University, must obtain readmission before they may register for summer classes.

TEMPORARY TRANSFER STUDENTS—SUMMER

A student of another college or university who wishes to enroll for the summer session, and who intends, thereafter, to return to the original institution and is eligible to continue there, may be admitted to the Summer Sessions as a Temporary Transfer Student.

A tear-out admissions application and registration form for summer study by a temporary transfer student, provided in the announcement of summer offerings, may be obtained from the Office of Admissions at mid-March.

TRANSCRIPTS

Each student receives a summary transcript of his or her complete academic record at the close of each academic year. Students should carefully examine their record for accuracy and immediately report errors to the Registrar.

To obtain additional copies of their academic records students must write to the Registrar for transcripts for themselves or for other institutions and agencies. All official transcripts issued by the Office of the Registrar bear the signature of the Registrar and the embossed seal of the Office of the Registrar. Whenever an official transcript is released directly to the student it will also bear the stamped designation, Issued to Student. No transcript will be issued unless all financial obligations owed by the student to the University have been fulfilled. A fee of $1.00 is charged for the issuance of each transcript.

CONFIDENTIALITY OF STUDENT RECORDS

The University regards the student's personal information and academic record as a matter of confidence between the student and the University. The contents of either may be revealed only in accordance with the Family Educational Rights and Privacy Act of 1974 (Public Law 93-380, Section 438, as amended).
Scholastic Policies

ACADEMIC ADVISOR

Every student attending the University is assigned or selects an academic advisor. It is the student's responsibility to ascertain who his academic advisor is. Students may obtain the name of the advisor at the office of the school in which they are enrolled.

The student should consult with the academic advisor about the program and any questions of an academic nature. No student may register without the academic advisor's approval and signature.

CANCELLATION OF COURSES

The University makes every reasonable effort to offer courses as announced. It reserves the right, however, to make changes or cancel courses in the academic schedule because of insufficient enrollment or for other equally valid reasons.

CLASS ATTENDANCE

Regular class attendance is normally essential for maximum educational advantage and is strongly encouraged. The responsibility for all course material rests wholly with the student. Class attendance shall not be used as the sole basis for altering a grade in a course.

It is the prerogative of each school to establish policy for attendance at tests and examinations, deadlines for reports, and specific school or course requirements. It is the instructor's responsibility to make the school's policy known at the first class session as it pertains to the course.

Details about class attendance in schools that have specific policies will be found in the latter sections of this catalog.

CLASSIFICATION OF STUDENTS

Freshmen less than 30 credits completed
Sophomore 30 to 59 credits completed
Junior 60 to 89 credits completed
Senior 90 or more credits completed

1. Full-time Students: A student with an academic schedule of at least 12 credits is considered a full-time student. With this status, a student is entitled to the benefits of various activities. A student may not change status during the semester without the permission of the academic advisor and the dean of the student's school.

2. Part-time Students: Anyone who carries under 12 credits is regarded as a part-time student.

COURSE EXAMINATIONS

Unit examinations are given on the dates announced at the beginning of each semester by the instructor. Grades for these are obtained from the instructor.

Final examinations are given at the end of each semester and summer session according to the University Academic Calendar. Final grades are to be reported by the instructors to the registrar within 72 hours after the final examination. No student is excused from taking the final examination. The temporary grade I (Incomplete) is given to students who are absent from the scheduled final examination. When due to extenuating circumstances, and with the approval of the instructor and the dean, the absence may be excused. (See following Procedure for Removal of I (Incomplete) Grade.)

CREDIT BY EXAMINATION

Courses in which a student feels he or she has sufficient competence may be "challenged" by taking an examination for credit. If the examination is passed, the credits will count for graduation, but neither grade nor quality points will be assigned. A fee of $10 a credit hour is charged.

GRADING SYSTEM

The officially recognized method of grading course work and rating academic performance of students at the University is as follows:

A — Excellent
B — Good
C — Average
D — Below average, passing
P — Pass (Used in some courses where scaled grading is inappropriate. Indicates satisfactory completion of course work with credits earned but without quality points and is independent of the quality point system.)
S — Satisfactory (Used in pass/fail courses and is independent of the quality point system)
F — Failure (Course must be repeated for credit)
U — Unsatisfactory—Failure (Used in pass/fail courses and is independent of the quality point system, course must be repeated for credit)
I — Incomplete (I is the sole temporary grade for undergraduate students. It indicates incomplete course work which if not completed within the stated time becomes a permanent F grade.)
DUQUESNE UNIVERSITY

conversion date for an I grade coincides with the date established for reporting mid-term grades of the semester following that in which the I grade was awarded. I grades received in the summer shall have the same conversion date as those received in the preceding Spring Semester. Both the I grade and the conversion grade are permanent on the student’s academic record.

X — Absent from Final Examination This grade was superseded in September, 1974 for undergraduate course evaluation by the I grade.

WITHDRAWAL GRADES
These symbols are used on a student’s permanent academic record to indicate termination of attendance in courses under conditions of official withdrawal (See page 36, Withdrawal from a Course and Withdrawal from the University).

W — Official Withdrawal
WP — Official Withdrawal and Passing
WF — Official Withdrawal and Failing

PROCEDURE FOR REMOVAL OF I (INCOMPLETE) GRADE
1. Student presents an explanation of I grade to the instructor of the course who decides whether the student may initiate procedure for removal of the I grade.
2. The dean (or his designee) rules on whether or not the student may complete the procedure for removal of the grade and indicates approval on appropriate form.
3. Student consults with the instructor and arranges time and place for the removal of the I grade.
4. Student takes signed form to the Registrar and pays the appropriate fee ($5.00).
5. The Registrar signs the form.
6. Student takes recepted form to the instructor at the appointed time.
7. The instructor collects the form and turns it in to the office of appropriate dean, indicating the change of grade.
8. The dean (or his designee) sends the Change of Grade form to the Registrar for recording and distribution.

QUALITY POINT SYSTEM
The student’s overall academic grade average (QPA) is obtained by dividing the total quality points earned by the total number of semester hours attempted. These quality point values of grades are used for each credit attempted:

A — four points
B — three points
C — two points
D — one point
F — zero points

GRADE

A — four points
B — three points
C — two points
D — one point
F — zero points

Condition

I — Incomplete
S—Pass
U—Fail

F—zero points
C—two points
D—one point

SCHOLASTIC POLICIES

Courses in which grades P, S, U, I, and W were given are not used in calculating the quality point average.

REPEATING COURSES AND COURSE RETROGRESSION
Ordinarily, with permission of their advisor, students may repeat courses in which grades of F and D were received. All grades are retained on the permanent academic record.

The result of the final attempt in a repeated course is, however, the student’s status in the course with regard to attempted credits, earned credits, and the completion of requirements.

PASS-FAIL ELECTIVES
One course a semester, elected by a junior or senior and approved by the academic advisor as providing an opportunity to expand and enrich the student’s experience, may be taken on a pass/fail (S-U) basis. If passed, the credits will count for graduation but neither grade nor credits will be calculated in the quality point average.

Once a course has been identified as a pass/fail elective, the course must be completed as such and the grade submitted must be an S or a U. No required course may be taken on a pass/fail basis. The decision to elect the pass/fail option must be made during registration or no later than the close of the period provided for making schedule changes.

SEMESTER GRADE REPORTING
Every registered student who is free of outstanding financial obligations to the University is sent a report of course grades to the permanent address on record soon after the close of each semester.

STUDENT STANDING
Since progress toward a degree is measured by the cumulative quality point average, the scholastic records of students who fail to meet the minimum requirements will be submitted to the individual School's Committee on Student Standing for appropriate action.

Students who fail to meet the minimum requirements in the Fall Semester may be allowed to continue their studies during the Spring Semester, but will be subject to the authority of the Committee. The Committee determines whether students should be allowed to continue their studies.

For students who have attempted 15-30 credits, or more than 30 credits in one year, these standards prevail:

Good Academic Standing 2.0 to 4.0 QPA
Academic Warning 1.75 to 1.99 QPA (May continue normal program for one year)
Probation 1.60 to 1.74 QPA (Probation for one semester. May not continue normal program and is subject to jurisdiction of Committee on Student Standing)

Condition

Suspension for one semester: 1.59 QPA
Suspension for one year: 1.50 to 1.59 QPA
Suspension: 1.00 to 0.00 QPA (Probation for one year. May continue normal program, but shall have the same conversion date as those received in the preceding Spring Semester. Both the I grade and the conversion grade are permanent on the student’s academic record.)
clearance from Student Services in matters within their competence

Dismissal

Less than 1.50 QPA (Readmission may be permitted by recommendation of a School's Committee on Student Standing)

For students who have attempted 31-60 credits or who have attempted up to 61 credits within four semesters, the requirements are

Good Academic Standing

2.0 to 4.0 QPA

Academic Warning

1.85 to 1.99 QPA (May continue normal program for one year)

Probation

1.75 to 1.84 QPA (Probation for one semester May not continue normal program and is subject to jurisdiction of a School's Committee on Student Standing)

Dismissal

Less than 1.75 QPA (Readmission may be permitted by recommendation of a School's Committee on Student Standing)

Students who have attempted 61 credits or more and who have a QPA of between 1.84 and 1.99 may continue on probation for one semester. However, students who have earned more than 90 credits must have a QPA of 2.0 or better or they are subject to dismissal. All students' records shall be evaluated for academic standing at the end of the Spring Semester. A student who accumulates 3 F's in one semester is subject to dismissal. Any appeals on academic standing must be directed to the individual School's Committee on Student Standing.

DEAN'S LIST

To achieve distinction of being named to the Dean's List, a student must have a record for a semester that shows completion of a full-time schedule, a quality point average of at least 3.25, and no grade lower than C. The full-time schedule must include at least 12 credits exclusive of pass-fail credits.

GRADUATE COURSES FOR UNDERGRADUATE CREDIT

Qualified seniors may be permitted to register in certain graduate courses at the 500 level for undergraduate credit on the recommendation of the advisor and with the approval of the dean of the graduate school involved. All 500 courses are described in the graduate school catalogs.

GRADUATION REQUIREMENTS

The candidate for a University degree must be a person of good moral character, paid all indebtedness to the University, filed the Application for the University degree with the Office of the Registrar on or before the latest date to apply for graduation, as announced in the University Academic Calendar, and satisfactorily completed all academic requirements of the school and department in which the applicant is enrolled.

It is the student's responsibility to determine that the courses taken in each semester are sequentially correct and necessary for the degree program.

SCHOLASTIC POLICIES

The student must periodically review in consultation with the appropriate academic advisor progress toward graduation and seek, with the advisor, the resolution of any question about fulfillment of graduation requirements.

Each school and department sets forth in this catalog requirements for graduation which the student is expected to know, as well as the aforementioned general requirements, and the following:

1. The bachelor's degree requires a minimum of 120 semester hours of course credits in all except Medical Technology, Radiological Health, and Pharmacy which require, respectively, 125, 130, and 160 credits.

2. All bachelor's degrees require an overall minimum quality point average of 2.0, which is a C grade average in a 4.0 system. (Students should further determine the need for minimum QPA requirements in their major, science courses, etc.)

3. The last year's work (a minimum of 30 semester hours of credit) must be completed in residence at the University.

4. Not less than three credits (or one course) in theology is required for all undergraduate Catholic students in every program at the University. This is a general requirement, individual schools may require additional course work in this area.

5. Students on academic probation may be candidates for graduation only with permission of the Committee on Student Standing of their school.

The candidate who has satisfied graduation requirements by a Challenge Examination (credit by examination), when taken timely within the last 30 semester hours of study for the degree, will fulfill the residence requirement provided a minimum of 30 semester hours of credit has been earned in course work at the University in the last year's study.

STUDENT HANDBOOK

A Student Handbook that is of interest and importance to students is available to all new enrollees. It contains detailed information about Scholastic Policies and University practices and procedures.

HONORS

Degrees are awarded with special mention cum laude, magna cum laude, or summa cum laude to students who have completed the regular course with unusual distinction and who have completed a minimum of 60 credits in residence. Honors are based on these standards:

Cum Laude—Quality Point Average 3.50 to 3.74

Magna Cum Laude—Quality Point Average 3.75 and above

Summa Cum Laude—Upon recommendation of the faculty and a 3.90, Magna Cum Laude citation may be raised to Summa Cum Laude

UNIT OF CREDIT

The unit of credit is the semester hour, i.e., one credit equals one semester hour. One semester hour of credit is granted for the successful completion of one hour a week.
of lecture or recitation, or at least two hours a week of laboratory work for one semester of 15 weeks

TRANSFER WITHIN THE UNIVERSITY
It would be to the student's advantage to discuss the proposed transfer with the academic advisor of the new school no later than two weeks prior to preregistration. The advisor will then use the form and procedure established as uniform for the University to effect any change.

WITHDRAWAL FROM A COURSE
First semester freshmen may withdraw from courses, with the approval of their advisor, up to the period of final examinations and receive a grade of W by processing the proper form.

Up to the date announced in the university calendar for withdrawal with a W grade, other students may withdraw from a course with the approval of their advisor and academic dean by processing the proper form.

If a student wishes to withdraw from a course during the period between the date announced in the Academic Calendar and the three weeks preceding the close of the semester, the student must seek the approval of the academic advisor and submit a letter of request to the Committee on Student Standing of the student's school. If approval is granted, the grade will be WP or WF as determined by the instructor of the course, and the student will be notified of the Committee's decision. The student then goes to the advisor to initiate the proper forms.

Should a student wish to withdraw from a course during the last three weeks of class, the student must do so through the advisor and a written request to the Student Standing Committee of his or her school. If permission is granted, the grade will be WF (except under extenuating circumstances). The student is notified of the Student Standing Committee's decision. The student then goes to the appropriate advisor to initiate the proper forms.

A student who is not granted approval of the request and withdraws from the course unofficially, will receive the grade of F for the course.

WITHDRAWAL FROM THE UNIVERSITY
If a student finds it necessary to withdraw from all courses before the close of the semester, the student must write a letter stating the reasons for the withdrawal and then must present this letter to the Dean of the student's school. Complete withdrawal forms must be filled out for the Dean of the school, with copies to the appropriate offices. The policy for assigning grades will be the same as for withdrawing from a single course. A student who withdraws from the University and fails to notify the dean's office immediately and adequately will receive an F grade in all courses.

A resident student must notify the Director of Residence Life in advance of the planned withdrawal. No refund of room charges will be made where withdrawal occurs after the opening classes. In the event of withdrawal, board will be refunded at the rate of 75 per cent of the balance remaining on the student's meal plan, up until mid-semester. After the mid-semester point, no refund will be made.

No student is permitted to remain in the residence halls after academic withdrawal from the University has been completed. After final examinations, if a student is unable to return, he or she should notify the dean and advisor of his or her school.

AUDITING A COURSE
Permission to audit a course is given by the student's faculty advisor. No student is permitted to sit in a class without officially registering either for credit or as an auditor. Tuition for auditing a course is the same as for one taken for regular credit.
Student Life

ATHLETICS
The University considers intramural and intercollegiate sports programs to be an integral part of the total educational enterprise

INTERCOLLEGIATE
Duquesne University's basketball team, the "Dukes," has been one of the top teams in the nation over the last 10 years, participating in six post-season tournaments.

In addition to basketball, the University offers intercollegiate sports programs in baseball, bowling, club football, women's basketball, women's volleyball, cross-country, golf, rifle, and tennis. Prospective candidates for any of these teams should contact the Athletic Director's Office for information. Duquesne is a member of the National Collegiate Athletic Association and the Association for Intercollegiate Athletics for Women. Eligibility is governed by the rules of these organizations.

The women's varsity basketball and volleyball teams enter intercollegiate competition with women from other colleges and universities. Those interested in applying should contact the Women's Recreation and Athletics Office in University Hall.

INTRAMURAL
The University supports six intramural sports programs for men: basketball, bowling, football, softball, swimming, and volleyball. The women's intramural program includes basketball, bowling, softball, swimming, and volleyball.

CULTURE AND RECREATION
RED MASQUERS
The Red Masquers serves to provide an extra-curricular outlet for students who wish to participate in the theatre. Its aim is to provide the University and its students with educational and cultural benefits that accrue from a dramatic program. In line with these objectives, the Masquer's program offers a variety of stage entertainment—one-act plays, musicals, comedies, tragedies, etc. Any Duquesne student is eligible for membership.

There are also student directed workshop productions each semester. Those interested in working with the Masquers should watch for notices about tryouts and meetings, or write Red Masquers in the Duquesne Union.

SCHOOL OF MUSIC GROUPS
The School of Music has the direction of the University Chorus, Symphonic Band, Symphony Orchestra, and the Woodwind, Brass, and String Ensembles, which present numerous solo or combined concerts throughout the school year. All groups are open to any qualified student in the University.

TAMBURITZANS
The Duquesne University Tamburitzans, America's Ambassadors of Good Will, have been on campus since 1937. Their purpose is to offer scholarship opportunities and to preserve and perpetuate the rich cultural heritage of the Slavic people. The students come from all parts of the U.S. They present over 90 concerts annually throughout the United States and Canada and have made tours to both Latin America and Europe. The Tamburitzans sing in more than a dozen European languages and perform their folk dances in authentic costumes.

DUQUESNE UNION
The Union is more than a unique building. It is an organization, a program, a service, and a spirit that has spread through Duquesne since it opened in 1967. With a goal of community, all aspects of the Union—facilities, programs, and committees—are open to all segments of the University—students, faculty, administrators, and alumni.

PROGRAMS
Overall direction of the Union's programs and operations is provided by a Governing Council. Student committees cooperatively organize a variety of programs each year in such areas as arts, crafts, concerts, lectures, motion pictures, recreation, and special events. A Program Board, under the guidance of a student president and treasurer, with funds provided by the Council from a portion of the University fee, coordinates and balances programs developed by the various committees. Membership on the committees is open to all Duquesne students.

FRATERNITIES AND SORORITIES
Duquesne University's social fraternities and sororities are composed of college men and women who have banded together to enhance their identities by sponsoring and promoting social, athletic, cultural and academic events through the brotherhood and fraternal spirit generated by the associations. Many have national affiliations.

INTER-FRATERNITY COUNCIL
The Inter-Fraternity Council serves as a clearing house for general fraternity social information and as a forum for airing constructive proposals for the improvement of the fraternity system. Membership in the council is composed of three elected or appointed representatives from each of eleven member groups. The IFC establishes all rules governing inter-fraternity sports and also regulates pledging.
PAN-HELLENIC COUNCIL
Pan-Hellenic is an organization composed of the presidents and elected representatives from each of the active women's social fraternities of Duquesne University. The council was begun in 1925 with a membership of four fraternities. The present council consists of seven women's social fraternities.

CARNIVAL
A highlight of the school social year is the annual Fall Carnival sponsored by IFC and Pan-Hel on campus. Many organizations team up to present musical tent shows and provide fun-filled games and refreshments. The activities are climaxied by the Carnival Ball. The Council also sponsor Greek Night, Greek Week, Greek Sing, and various other events.

PROFESSIONAL SORORITIES AND FRATERNITIES
These professional organizations exist to provide the fertile ground where the informal exchange of ideas pertinent to the student's academic pursuits can find food for growth. They sponsor a number of programs including debates, symposiums, and lectures that are germane to students' interests, fields of study, and prospective professions.

SERVICE SORORITIES AND FRATERNITIES
The purpose of these nationally-affiliated organizations is to provide services to the campus and local communities while developing leadership and brotherhood. They sponsor a variety of social, service, and charitable programs.

ORGANIZATIONS

STUDENT GOVERNMENT ASSOCIATION
"Today's Duquesne Student should learn that an increasingly complex society can no longer paternaly guide his choices nor take responsibility for his errors." Accepting this charge, the students of Duquesne created the Student Government Association to provide a forum for the expression of student views and interests, to maintain academic freedom and responsibility as well as student rights, and to foster intelligent interest and participation in all phases of University life. The legislative branch of the SGA is comprised of representatives elected each spring from the various Schools in the University. The Executive Board of SGA officers is elected by the student body. All major university committees have SGA appointed student representation—most notably the Administrative Council and the Council of Academic Deans. The SGA is responsible for funding student organizations of general appeal and directs the orientation program for new students.

OTHER ORGANIZATIONS
There are more than 100 active student organizations at Duquesne. Some serve the needs of such specific groups as minority students, veterans, residents, and commuters. Others relate directly to major areas of study. Some honor academic achievement. Many are formed to meet religious, service, or social needs and interests. Whatever their purpose, these organizations and their activities comprise a major part of campus life.

RESIDENT LIVING
The objective of Duquesne University is "to contribute to the education of the whole person, so that he may be effective as an individual, as a participating member of his family, as a member of his profession, and as a person responsible to his community, his nation, and to mankind." Sharing in the realization of this objective the purpose of the residence hall program is to provide the environment and conditions within which the student may be guided through his experience and association with others to achieve a mature and well-balanced personality and to become a responsible, contributive citizen, sensitive to the needs and rights of others.

RESIDENCE HALL COUNCIL
The Residence Hall Council is composed of representatives of each House Council. The Council meets bi-monthly to discuss and resolve pertinent problems arising from group living within the residence complex, to aid in the development of responsibility through a sharing in self-government, to promote, in cooperation with the administration, the general welfare of the student body, to enact and enforce regulations within the halls, and to promote interest in campus affairs and to coordinate activities within the residence halls.

In the belief that residence living adds to the educational opportunities of the individual student, the University reserves the right to require all undergraduate students who do not commute from their permanent home of residence to reside in University residence halls. Currently this requirement pertains only to freshman and sophomore students. It is the aim of the Residence Hall Council to serve as a link between the resident students and the administration. Aside from the council activities, representatives of the Residence Hall Council serve on the Council on Student Services and the Food Service Committee to provide student input into the formulation and review of University policies affecting residence life.

The parking situation is critical, largely because of the University's urban setting, therefore, resident students are discouraged from bringing automobiles to the campus unless absolutely necessary. Only a limited number of parking permits is available for resident students.

STUDENT LIFE

PUBLICATIONS

THE DUKE
The Duke is a weekly newspaper published and edited by students. It provides an outlet for campus news, student opinion, editorials, advertising, and entertainment.

DUQUESNE MAGAZINE
The University's literary magazine affords students a channel for creativity in writing, art, and photography.

L'ESPIRIT DU DUC
The L'Esprit du Duc, the University yearbook, highlights the events of the previous year and reminds all seniors of endeavors which promoted unity and integrity on Duquesne's campus.

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BLACK STUDENTS COUNSELING AND LEARNING CENTER
The Counseling and Learning Department for black students is located on the sixth floor of the Union. Because black students on a predominantly white campus have unique problems, the Counseling and Learning Department runs a special kind of program. The staff of this department is prepared to advise and assist black students in any way possible. In addition to being a meeting place for black students, the department provides one to one individual counseling, interpersonal group counseling, assessment, evaluation of student’s progress, and academic tutoring where needed.

CAMPUS MINISTRY
The Campus Ministry, under the direction of the University Chaplain, seeks ways and means to help all of us recognize our relationship and responsibility to each other, to God and to those who support us, surround us, depend on us for learning, leadership, and service.

Among the current activities are informal conversations, film-discussion series, week end programs, days of reflection, a student volunteer service, individual and group counseling, and chapel services. Mass is celebrated daily and Sunday in the University Chapel at regularly scheduled times, and priests are available for the Sacrament of Penance both at posted times and by individual arrangement. The standard chapel schedule and its occasional variations are listed on the bulletin boards outside the chapel and at the desks of the residence halls.

There is a Hillel chapter on campus and hope in including Protestant clergy in the program. The Campus Ministry staff is advised by the University Pastoral council, a representative group of students, staff, faculty, and administrators.

CAREER PLANNING AND PLACEMENT CENTER
The Center assists students and alumni in formulating occupational goals, in investigating vocational opportunities, and in obtaining suitable jobs. Students in the early stages of career planning, as well as those entering the labor market, will find extensive and up-to-date resource materials in the Occupational Library. The staff offers individual counseling and group guidance, and may present special career seminars. Through a Career Advisors and Speakers Service persons may be engaged to participate in special career programs sponsored by student organizations, academic departments, etc.

Among the “placement” services offered by the Center are the campus interview program, which allows seniors the chance to compete for jobs or graduate school opportunities, and a job referral service which augments both the interview program and a candidate’s own job-seeking efforts. A credentials or references service is also offered.

Students interested in on-campus part-time or summer employment should contact the Center, which administers the University’s Student Aide Program. Information is also provided about jobs in the local community and other parts of the country.

LANGUAGE LABORATORY
The advanced electronic laboratories located on campus help the student develop his fluency in the speaking and comprehension of a foreign language.

COMMITTEE ON FOREIGN STUDIES
The Committee on Foreign Studies for the University is designed to assist and guide students who are interested in foreign study as a part of the undergraduate program. Students interested in foreign study should begin application procedures by the start of their sophomore year. Additional information may be obtained from the Department of Modern Languages in College Hall.

COUNSELING CENTER
The Counseling Center of Duquesne University is staffed by the Psychology Department and is available to students for personal counseling. Counseling interviews provide the student with an opportunity for personal growth through the development of his ability to find his own solutions for difficulties of a personal nature. Single conferences or a series of interviews in individual or group counseling can be arranged at the Center’s Office, which is located on the third floor of the Guidance Building. Hours are 9:00 A.M. to 5:00 P.M., Monday through Friday.

HEALTH SERVICE
General health care is provided to all resident students in the University Dispensary, located on the second floor of the Duquesne Towers Residence Hall. Registered nurses provide 24-hour coverage seven days a week during the regular academic year.

The University Physician is available during Clinic hours five days a week for limited diagnostic and treatment services. Where more extensive examination or treatment is required, referral is made to the student’s personal physician or to a hospital emergency room. These additional services, as well as emergency ambulance transportation, will be at the expense of the student involved.

Non-resident students are treated only on an emergency basis, therefore, all students are encouraged to maintain health and accident insurance. A group program is available through the University.

HISTORY FORUM
The History Department annually sponsors the Duquesne University Forum, one of the major historical meetings in the United States. The Forum offers an opportunity for students to become acquainted with historical studies and techniques as well as to be exposed to the views of major thinkers in the field.

JUNIOR YEAR ABROAD
Duquesne University students may take courses abroad as part of their undergraduate program. Interested students are advised by the Committee of Foreign Study, to contact American universities which offer foreign study programs or to contact a foreign university directly. Also, scholarship opportunities of U.S. and foreign governments, including the Fulbright, are made known to students.

LANGUAGE LABORATORY
The advanced electronic laboratories located on campus help the student develop his fluency in the speaking and comprehension of a foreign language.
SYSTEMS CENTER
The Systems Center is a service department operated by the School of Business and Administration. Its main function is to make available to the students and faculty of the University the use of a modern computing system. Through the curriculum offered by the School of Business and Administration, the student is made cognizant of the potential uses for this new and powerful tool. Instruction in basic programming is provided to the students to aid them in fulfilling their class assignments. Individual research projects by the students and faculty are encouraged.

An auxiliary function of the System Center is to provide data-processing services for the administrative offices of the University. Two of the services being provided are automated registration and grade reporting. Students who work in the Systems Center become involved with the problems of setting up and operating the data processing system.

The Systems Center Staff is responsible for programming and operating specialized programs such as the Duquesne University Management Game which is an important part of both the undergraduate and graduate curriculum.

TESTING BUREAU
The Testing Bureau located in the Administration Building, provides free testing and counseling to students who are seeking help with academic and vocational choices. Test results do not provide instant answers, but do provide the student with a better knowledge of his interests and abilities as compared to successful people in a variety of occupations and college majors. An appointment can be made by calling the Testing Bureau between 8:30 A.M. and 4:30 P.M.

Students can also obtain information and applications for national tests such as the Graduate Record Examination, National Teachers Examination, Law School Admissions Test, Medical College Admissions Test, Graduate School Foreign Language Test, the College Level Examination Program Test, and the Miller Analogies Test.

WDUQ RADIO (FM) AND TELEVISION
The University's radio and television stations provide academic support to the Schools and departments through seminars, workshops, laboratory experience, and extracurricular opportunities in communication skills for individuals and groups.

Most positions on WDUQ (FM) are filled by students. The station operates on a 25,000 Watt frequency over a radius of 70 miles.

College of Liberal Arts and Sciences
HISTORY

In 1878 the Fathers of the Congregation of the Holy Ghost and the Immaculate Heart of Mary established a College of Arts and Letters which was incorporated in 1882 as Pittsburgh Catholic College of the Holy Ghost with authority to grant degrees in the arts and sciences. In 1911 the College and University Council of the Commonwealth of Pennsylvania extended the charter to university status and approved the amendment in favor of the corporate title, Duquesne University.

PHILOSOPHY AND OBJECTIVES

The College is committed to the ideal of graduating men and women whose minds have developed to the point of intellectual freedom in the pursuit of truth. To be intellectually free is to have the ability to judge independently, to live with honest doubt, to interrelate facts and disciplines, to balance memory, reason, and imagination, to be intellectually free is to rise above the tyranny of ignorance and bias. In essence, the college graduate is to be a person whose mind is strong and healthy, a person fully aware of humanity and sensitively responsive to humanity's strengths and weaknesses. The College, therefore, aims at graduating students who know that their education has just begun, students who know that they have only the foundation of wisdom and the obligation to grow in it—as individuals, as citizens, and as scholars.

To fulfill the educational objectives of the College, the various departments strive to liberate students' minds so that true apprehension, investigation, and judgment are possible. To do this the departments avoid the narrow professional approach to their disciplines and encourage students to pursue an essential core of major studies while advising a wide selection (largely student determined) of interdisciplinary experiences. The College constantly emphasizes, throughout its four-year program, the relationship of a particular discipline to truth as a whole, its graduate is to be primarily a person who can think and secondarily a person who can take his or her place in a chosen profession.

CURRICULAR REQUIREMENTS

English Composition — Proficiency at the 102 level
Modern or Classical Language — Proficiency at the 202 or 212 level
Natural Sciences (Biology, Chemistry, Earth Sciences, Physics, Mathematics) — Nine Credits. One two-semester sequential course must be completed.

ACADEMIC REQUIREMENTS

Completion of 120 credits
• Minimum cumulative over-all quality point average of 2.0
• Minimum cumulative quality point average in the major of 2.0
Removal of I and F grades in required courses
Completion of sequential courses in proper sequence
Completion of the residence requirement. The last 30 credits must be taken at the University
Submission of application for the degree. No student is considered a degree candidate until he files an application for the degree on a form provided by the Registrar.

PROGRAMS

SEMINARY PROGRAM

English Composition — Proficiency at the 102 level
History — Two semesters (Six credits)
Language — Eight semesters of language At least four semesters must be in a classical language
Literature — Two semesters (Six credits)
Philosophy — 18 credits
Science/Mathematics — Six credits
Social Sciences — Nine credits (Two disciplines must be represented)
Theology — A minimum of three credits
Completion of a major in Classics or Philosophy

PRE-MEDICAL PROGRAM
Students who intend to prepare for a career in medicine, dentistry, veterinary medicine, or related fields may major in the subject area of their choice and should select a major as soon as possible. They must meet degree requirements of the major department, as well as admission requirements of the professional school of their choice. A faculty committee on Pre-Medical Education assists the medically-oriented student.

PRE-LAW PROGRAM
Students who intend to prepare for a career in law may select any subject area for the undergraduate major. They will be expected to meet degree requirements in the major department, as well as admission requirements of the law school of their choice.

PRE-ENGINEERING PROGRAM
The pre-engineering course is a two-year program designed to prepare a student for entrance into a school of engineering. Program consists of Calculus 115, 116, 215, 12 credits, General Analytic Physics 211, 212, 8 credits, Ordinary Differential Equations 216, 4 credits, General Chemistry 121, 122, 9 credits, English Composition 101, 102, 6 credits, balance of credits in electives.

BACHELOR-MASTER'S PROGRAM
A student who has completed all requirements and a total of 90 credits with a 3.5 average may apply for the bachelor/master's program. After acceptance into a graduate program and successful completion of one year of graduate work (18 credits), the student will receive the bachelor's degree.

SECOND BACHELOR'S DEGREE
A student who has received a bachelor's degree from another school may become eligible for a second bachelor's degree by earning an additional 30 semester hours in residence in the College of Liberal Arts and Sciences and by meeting all departmental and College requirements if not already satisfied.

THREE-YEAR BACHELOR'S PROGRAM
For information contact the Office of Admissions or the Dean of the College.

CLEP AND ADVANCED PLACEMENT
See pages 9 and 10.

ACADEMIC REGULATIONS

DEPARTMENT OF BIOLOGICAL SCIENCES
Chairman Howard G. Ehrlich, Ph.D.

Biology is the scientific exploration of life in its many forms and details. To study biology is to pursue an intellectual challenge which provides insight into one's self and enables one to acquire knowledge vital to responsible citizens in societies beset by many serious problems having biological implications.

The undergraduate program is both basic and flexible, aiding in preparing students for professional careers in teaching, medicine, dentistry, veterinary medicine, and advanced study in graduate school. In addition, graduates are qualified as laboratory technicians, and are able to pursue positions in pure and applied research in hospitals, universities, private industry, and civil service.

Numerous and diverse opportunities are available in pharmaceutical laboratories, medical research laboratories, atomic energy research laboratories, chemical laboratories, food processing and control laboratories, meat packing, canning, forestry, wildlife management, fisheries, oceanography, conservation, health services, space biology, dairy and agricultural production, food and drug administration, environmental services, and others.

REQUIREMENTS FOR THE MAJOR
A minimum of 31 semester hours is needed. Majors are required to take Biology 111, 112 and to select other courses so that a balance is achieved with experience in
the biology of inheritance, structure, and function at the molecular, cellular, and organismal levels. The specific program selected is individually formulated for the student through consultation with an advisor.

With the permission of the advisor and Department Chairman and Dean of the Graduate School of Liberal Arts and Sciences, qualified seniors are encouraged to take 500 level biology graduate courses, such as 503, 505, 507, 511, 512, 513, 520, 523, 525, 531, 580, listed in the Graduate School catalog.

Students should consider extradepartmental electives in chemistry and mathematics. Courses 107, 108, 201, and 202 will not be counted toward a major in biology. Extradepartmental requirements: Mathematics 115, Chemistry 121, 122, 205, 206 or 221, 222, Physics 201, 202 or 211, 212.

REQUIREMENTS FOR THE MINOR

A minor consists of 111, 112 and a minimum of 12 credits selected from the department's major courses, numbered 200 or above, individual course prerequisites must be met.

If a student takes 107, 108 and 111, 112, the credits for 107, 108 will not apply to the total number required for the degree.

107, 108 Principles of Biology 3 cr each
Study of the living world of which man is an integral part. It includes considerations of organization, activity, growth, reproduction, inheritance, environmental influences and other interrelationships. This course is designed to provide the non-scientist with the basic biological information and principles necessary to remain an enlightened citizen in our increasingly complex society. Does not carry credit toward a Biology major. 107 is prerequisite to 108. Lecture, three hours.

111, 112 General Biology 4 cr each
Introduction to the scientific study of life at the molecular, cellular and organismal level. It involves consideration of relevant structures, function, development, reproduction, inheritance, evolution and ecology. This course provides the basic information and concepts necessary to understand living systems, their activity, and interrelationships. 111 is prerequisite to 112. Lecture three hours, laboratory three hours. (Offered each year).

201 The Biology of Microbes 4 cr
Examination of microbes as to what they are, how they grow, how they may be controlled, what their relationships to other living things are, why and how some of them cause disease. This course does not carry credit toward a biology major. Lecture, three hours, laboratory, three hours.

202 Biology of Sex 3 cr
A consideration of reproductive mechanisms and sex as universal biological functions with emphasis on human physiology, genetics, behavior, sexuality and their implications for modern society. Does not carry credit toward a Biology major. Lecture, three hours. (Offered each year).

203 Genetics 4 cr
A study of the mechanisms of inheritance and their resulting effects on individuals and populations, including their implications in the life of man. Principles and details, methods and applications are illustrated with specific examples drawn from a wide range of species from microorganisms to man. Prerequisite: 108 or 112. Lecture, three hours, laboratory, two hours.

205 Vertebrate Macrostructure 4 cr
A comparative study of the gross structure of vertebrates and the relationships of that structure to function and evolution. Prerequisite: 112. Lecture, three hours, laboratory, three hours.

206 Vertebrate Microstructure 4 cr
A study of tissue and organ structure and the relationship of that structure to function. Prerequisites: 112 and 205 or permission of the instructor. Lecture, three hours, laboratory, three hours.

212 Animal Development 4 cr
A comparative study of the morphological and physiological aspects of animal development emphasizing current experimental approaches. Prerequisite: 112. Lecture, three hours, laboratory, three hours.

214 Plant Development 4 cr
Examination of the unique features of representative types of plants, as revealed by interrelationships of form, function and morphogenesis. Prerequisite: 112. Lecture, three hours, laboratory, three hours.

301 Invertebrate Biology 4 cr
The morphology, systematics, life histories and ecology of invertebrate animals, with emphasis on diversity of forms. Field trips by arrangement. Prerequisite: 112 or equivalent. Lecture, three hours, laboratory, three hours.

302 Animal Parasitology 4 cr
Principles of parasitism and general biology of animal parasites from protozoans through arthropods. Prerequisites: 112 and 301. Lecture three hours, laboratory, three hours.

311 Cell Physiology 4 cr
A study of cells with regard to means of obtaining energy, including respiration, fermentation, and photosynthesis, work done by the cell, including synthesis, active transport, and cell movement, cell growth and differentiation, relationships of cell structure to these processes. Prerequisites: 111, 112 and organic chemistry. Lecture, three hours, laboratory, three hours.

312 Physiology of Reproduction 4 cr
Includes the anatomy, histology, physiology, biochemistry, and endocrinology of vertebrate reproduction. The main emphasis is on the physiology of puberty, estrous and menstrual cycles, conception, pregnancy, and parturition. The physiological basis of fertility and infertility are also included. Prerequisites: 112 and 205 or 212. Lecture, three hours, laboratory, three hours.

314 Animal Physiology 4 cr
An introduction to the fundamental mechanisms of body function in animals. Prerequisite: 112. Lecture, three hours. Laboratory, three hours.

315 Plant Physiology 4 cr
Varied studies of the growth requirements and regulatory mechanisms of important plant types, with emphasis upon environmental control. Prerequisites: 112 and 214. Lecture, three hours, laboratory, three hours.
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DEPARTMENT OF BIOLOGICAL SCIENCES

Microbiology 4 cr
Classification structure, function, and metabolism of microorganisms. Prerequisites 112 and organic chemistry Lecture, three hours, Laboratory, three hours

Natural History of Infectious Diseases 3 cr
The natural history of infectious diseases is considered from the aspect of host-parasite relationships. The process of infection, the outcome of the relationship and epidemiologic patterns of diseases will be studied. These concepts are explored by understanding the biology of the parasite and the mechanisms of resistance and immunity of the host. Diseases associated with bacteria, viruses, fungi, protozoans, and helminths are covered. Prerequisite 111, 112 Lecture, three hours

Molecular Genetics 4 cr
Molecular basis of genetic control mechanisms in cells and organisms with emphasis on microorganisms. Prerequisites 112 and 311 or 317 Lecture, three hours, Laboratory, three hours

Ecology 3 cr
Critical examination of the principles and procedures underlying ecological thought, stressing the ecosystem concept and its implications for human activity. Prerequisite 112 Lecture, three hours

Ecology Laboratory 1 cr
Laboratory, including possible field work, illustrates selected subject matter of 411. Prerequisites 111, 112 and 411, may be taken concurrently with 411

Regulatory Physiology 4 cr
Treatment of physiological and environmental regulations with emphasis on neuroendocrine integration and adaptation. Prerequisites 112 and 311 or 314 Lecture, three hours, Laboratory, three hours

Evolution 3 cr
History, development, concepts, and evidences of evolution with emphasis on modern studies in evolutionary biology, including an introduction to population genetics. Prerequisites 112 and 203 or 320 Lecture, four hours

Special Topics 1-3 cr
Treatment of topics of current or special interest in biology. Lecture, laboratory, or combinations

Undergraduate Research 2 cr each
Opportunity for selected students to work on research problems under the direction of a faculty member. 421 is not prerequisite to 422. Maximum of four credits. Registration by permission of instructor

DEPARTMENT OF CHEMISTRY

Department of Chemistry

Chairman Andrew J Glaid, III, Ph D

The Chemistry program is designed to provide the student with a fundamental background in chemistry and an understanding of the relationship of chemistry to the other sciences and disciplines. Elective courses and the opportunity to do undergraduate research allow the chemistry major to develop interests in a specialized area of chemistry, such as analytical, inorganic, organic, physical chemistry, and biochemistry.

Because of the fundamental nature of chemistry as a science, numerous opportunities for advanced study, as well as immediate employment, are open to the chemistry major. A large percentage of students elect to continue their study in graduate programs in chemistry and related fields. Chemists and biochemists provide a core of personnel in pure and applied research, technical sales, technical libraries, and management positions in the chemical and related industries, the space industry, the health professions, education, and the environmental sciences.

The major in biochemistry centers around the core of basic chemistry courses while also providing advanced courses in biochemistry and electives in biology.

REQUIREMENTS FOR THE CHEMISTRY MAJOR

Thirty-two semester hours are required. All students must take 121, 122, 221, 222, 321, 322, 323, 324, 421, 422. To meet the American Chemical Society's requirements for Professional Certification, the student must elect two additional courses from the following: 401, 523, 524, 537, 538, 541, 543, 544, 571, 572, Mathematics 216 or 308, Pharmaceutical Sciences 525, 539, one of the courses must be a laboratory course. This laboratory requirement can also be fulfilled with Chemistry 490.

Extradepartmental Requirements Mathematics 115, 116, 215, Physics 201, 202, or 211, 212, Biology 111, 112, and 202 or 212, proficiency in German, Russian, or French

REQUIREMENTS FOR THE BIOCHEMISTRY MAJOR

Thirty-two semester hours are required. All students must take 121, 122, 221, 222, 321, 322, 323, 401, 421, and 524. In addition two biology electives should be selected from Biology 317, 311, and 320. Students planning to enter a graduate chemistry department should take Chemistry 322 and 324. If a student takes 111, 112 and 121, 122, the credits for the 111, 112 will not apply to the total number required for the degree. Courses 102, 103, 205, 206 will not be counted toward a major.

Extradepartmental Requirements Mathematics 115, 116, Physics 201, 202 or 211, 212, Biology 111, 112, proficiency in German, Russian, or French
REQUIREMENTS FOR THE MINORS

A minor in Chemistry consists of 12 credit hours beyond Chemistry 121, 122 A minor in Biochemistry consists of 12 credits, beyond Chemistry 121, 122 Normally Chemistry 205, 206 or 221, 222, along with Chemistry 401, will constitute the Biochemistry minor

102, 103 Chemistry and Society 3 cr
The impact of chemistry on society reaches every phase of life. The course attempts to provide a link between chemical principles and the complexities of our rapidly changing society. In the first semester, the basic concepts of chemistry are developed for the non-science student. Through consideration of a series of environmental topics, the student is challenged to broaden his perspective by applying chemical concepts to an understanding of chemistry and the relationship to our physical environment. The course deals with the significance of developments in chemistry as seen in immediate benefits to man and in the long-term impact on society. The second semester deals with the biochemistry of living systems. Chemical principles are used to explain the normal life processes of photosynthesis, respiration, growth as well as normal conditions such as drug action, poisons, etc. on metabolic reactions. The student is made aware of the biochemical unity that prevails among the many complex and diverse forms of life. The first semester is a prerequisite to the second semester for those who have not had high school chemistry. Lecture, two hours, Laboratory, two hours (Reading assignments and term papers may be substituted for portions of the laboratory)

111, 112 Principles of Chemistry 4 cr each
The course is divided into three segments, physical, organic, and biochemistry. In the section devoted to physical chemistry, the laws of chemical behavior are developed with particular reference to the simple molecules of inanimate nature. The organic section deals primarily with the structural features of organic compounds, the chemistry of functional groups, and the practical applications of organic compounds in the synthesis of polymers, carbohydrates, lipids, proteins, nucleic acids, enzymes, vitamins, etc., to the metabolic processes of living systems. Lecture three hours, Recitation, one hour, Laboratory, two hours

121, 122 General Chemistry 4 cr each
The fundamental principles and concepts of chemistry are presented from the standpoint of atomic and molecular structure with illustrative examples from descriptive chemistry. The basic concepts of thermodynamics, chemical kinetics, and equilibrium are introduced. The laboratory portion of the first semester illustrates physical and chemical properties in a quantitative manner and the laboratory portion of the second semester illustrates the principles of ionic equilibria including qualitative inorganic analysis

121 Lecture, three hours Recitation, one hour, Laboratory, three hours 4 cr
122 Lecture, three hours, Recitation, one hour, Laboratory, seven hours 5 cr

205, 206, 221, 222 Organic Chemistry 4 crs each
The theoretical background is developed from the standpoint of the electronic structure of molecules and the accompanying energy considerations. The preparation and the chemical and physical (including spectral) properties of representative organic compounds are discussed in detail. Prerequisite 121, 122. For 205, 206, Lecture, three hours,
REQUIREMENTS FOR THE MAJOR

A candidate for the Bachelor of Arts degree will be expected to take at least 24 credits in Latin and Greek with a minimum of 18 credits in one language and a minimum of six credits in the other. Classics 311 and 312 (Survey of Sanskrit Literature) may be substituted for the minimum of six credits. Credits applied to the major must be at the 200 level or above. Latin Prose Composition will be required for the major at the discretion of the Chairman. Six credits of ancient history (Classics 325, 326, 337, 338) are required in addition for any major.

With prior departmental consent, students may substitute either Classics 323, 324 for one course in their 18-credit language requirement.

Ancient art and ancient philosophy courses are recommended.

REQUIREMENTS FOR THE MINOR

The department offers a minor in Latin (a minimum of 12 credits above the 100 level), a minor in Greek (a minimum of 12 credits above the 100 level), and a minor in Classical Civilization with concentrations in Greek Civilization, Roman Civilization, Ancient History, and Ancient Art and Literature (12 credits above the 100 level) with the approval of the department and advisors.

101, 102 Basic Latin 4 cr each
Study of the fundamentals of Latin grammar and syntax combined with occasional exercises in translation from Roman authors

103, 104 Basic Greek 4 cr each
Study of the fundamentals of Greek grammar and syntax combined with occasional exercises in translation from Greek authors

105, 106 Basic Sanskrit 3 cr each
A study of the fundamentals of Sanskrit grammar and syntax combined with exercises in translation. Some previous foreign language experience is desirable.

201, 202 Introduction to Latin Readings 3 cr each
A selection of readings from ancient and medieval prose and poetry (including the Vulgate and Christian writers) to illustrate the changing currents of ancient thought.

203 Introduction to Greek Readings 3 cr
Selected readings from Plato

204 Introduction to Greek Readings 3 cr
Selected readings from the New Testament

301 Survey of Latin Poetry 3 cr
Selections from the major Latin poets with emphasis on the development of poetic techniques. Prerequisite Classics 102 or equivalent.

302 Survey of Latin Prose Literature 3 cr
A complementary course to Latin Poetry which surveys the major prose authors of the Roman world. Prerequisite Classics 102 or equivalent.

303 Survey of Greek Poetry 3 cr
Selections from the major Greek poets with emphasis on the development of poetic techniques. Prerequisite Classics 104 or equivalent.

304 Survey of Greek Prose Literature 3 cr
A companion course to Greek Poetry with selections from one or more Attic writers and emphasis on style and syntax. Prerequisite Classics 104 or equivalent.

305 Latin Prose Composition 3 cr
Translation from English to Latin to strengthen command of the idioms and style of the Latin language.

307 Biblical and Patristic Greek 3 cr
Selections from a wide variety of Biblical and Christian Greek authors. Prerequisite: 303-304 Greek.

308 Patristic Latin 3 cr
Selections from a wide variety of Christian Latin authors. Prerequisite: 301-302 Latin.

311, 312 Survey of Sanskrit Literature 3 cr each
Selected readings from major Sanskrit texts including the Mahabharata, HitopadeSa, Kathasaritasagara, Manavadharma^astra, and Rigveda.

The following will be taught as Latin or Greek courses or, for those students who are qualified, as combination Latin and Greek courses.

Each course will cover an individual author or group of authors or a genre. Each course may be repeated as long as a different author or work is read. Prerequisite for 400 courses is one year of courses at the 300 level or the equivalent.

401, 402 Pre-Fifth Century 3 cr each
The Iliad, the Odyssey, the Homeric Hymns and other epic literature, Hesiod, Pindar, Greek lyric poetry, and the pre-Socratics.

403, 404 Fifth Century 3 cr each
Herodotus, Thucydides, Aeschylus, Sophocles, Euripides and Aristophanes.

405, 406 Fourth Century 3 cr each
Greek orators, Plato, Aristotle, Xenophon, Menander, and Theophrastus.

407, 408 Alexandrian Period 3 cr each
Apollonius Rhodius, Theocritus, Callimachus, and the lesser Alexandrian authors.

409, 410 Roman Republic 3 cr each

411, 412 Augustan Age 3 cr each
Livy, Vergil, Horace, Ovid, Propertius, Tibullus, Manilius, Dionysius of Halicarnassus, Res Gestae.

413, 414 Early Imperial Literature 3 cr each
Seneca, Lucan, Petronius, Martial, Plutarch, the Silver epics, Josephus, Demetrius on Style.

415, 416 Later Imperial Literature 3 cr each
Tacitus, Juvenal, Pliny the Younger, Suetonius, Apuleius, Lucian, Dio Cassius, Marcus Aurelius.
DEPARTMENT OF CLASSICS

417, 418 Post Classical Literature 3 cr each
Selections from post classical, medieval, renaissance and neo-Latin authors

419 Studies in Genre 3 cr
Selected genre of Greek and/or Latin literature

420 Senior Seminar 3 cr

421, 422 Independent Readings and Research Var cr

472 Elementary Biblical Hebrew 3 cr
Study of basic grammar and reading of selected texts from the Pentateuch. Open to senior seminary students

Classics courses in English (No Greek or Latin required)

121 General Etymology 3 cr
A study of Greek and Latin words to facilitate the comprehension of modern English as it is written by our acknowledged modern masters

122 Etymology of Scientific Terms 3 cr
Introduction to Greek and Latin elements of scientific terminology

123 Classical Mythology 3 cr
A presentation of the major myths of Greece and Rome with special attention to contemporary interpretations of myth and the influence of myth on art and literature

323 Masterpieces of Greek Literature in Translation 3 cr
This course will examine the major documents of our Greek literary heritage, such as the works of Homer, Aeschylus, Sophocles, Euripides, Herodotus and Thucydides, from the point of view of their literary and cultural contribution to the intellectual development of the Western world

324 Masterpieces of Latin Literature in Translation 3 cr
Ancient Roman comedy, epic, elegy and satire will be read. Modern interpretive techniques will be used to place these works in the proper context of their literary and cultural tradition

325 Greek History 3 cr
An examination of the development of Greek history and culture from earliest times up to the death of Alexander of Macedon

326 Hellenistic History 3 cr
A survey of Mediterranean history from the death of Alexander until the accession of Octavian and the establishment of the Roman principate

328 The Classical Tradition in America 3 cr
A study of the influences of Graeco-Roman civilization on American cultural life, with special emphasis on its influence on American literature

337 Roman Imperial History 3 cr
A study of the consolidation and dissolution of the Roman imperial structure up to the death of Justinian in 565 A.D.

338 Ancient Indian History 3 cr
An investigation of ancient Indian history, art and literature up to the time of the Delhi Sultanate

DEPARTMENT OF ECONOMICS

340 Greek Religion 3 cr
An examination of the continuity of Greek religious experience from ancient times to the present and of the interconnection of ancient Greek religious ritual, moral experience and religious thought

341 Roman Religion 3 cr
A study of Roman religious beliefs and practices with attention to the development of hero cults, oriental mystery religions and philosophical sects as alternatives to traditional religion

Department of Economics

Chairman: Som Prakash, Ph.D.

REQUIREMENTS FOR THE MAJOR

Twenty-four semester hours are required for a major. These credits must include 101, 102, 213, or 211, 212 and 301, 302 (101, 102, or 211, 212 are prerequisites to all advanced courses)

Extradepartmental requirements: Analytic Methods 201, 202 in the School of Business and Administration or Mathematics 225 in the College Mathematics Department. Students planning to do graduate work in economics are advised to take calculus.

REQUIREMENT FOR THE MINOR

Eighteen semester hours are required for a minor. The required introductory level courses are 101 and 102 or 211 and 212. In certain cases, it would be advisable to take 213 as an elective. It is strongly suggested that students having selected Economics as a minor, consult with the Economics Department chairman for advisement purposes.

101 Elements of Economics 3 cr
Economics 101 is an introductory course in economics intended to afford an understanding of how our economic system works, of the forces which affect the level, composition, and distribution of the output of the economy, and of the issues behind current economic problems. The course content will define concepts, provide background materials, and develop economic ideas necessary to an understanding of the policy issues constantly before a complex dynamic economy.

102 Introduction to Macro Economics 3 cr
The emphasis is on the application of macro economic principles. A series of basic economic problems and issues will be examined in terms of an understanding of the basic problem: How can society achieve and maintain a full employment economy with reasonable economic stability?

213 Introduction to Micro Economics 3 cr
The primary aim of this course is to enhance and deepen the students' understanding of the market mechanism and how this mechanism responds to various governmental policies.
More specifically, this course should enable the student to apply micro economic reasoning to current public issues and use benefit-cost methodology in analyzing government expenditures.

The above set of courses has been designed for non-business students. However, taking of one course does not obligate the student to take any additional courses in the sequence.

105 Economics of Discrimination 3 cr
The main interest of this course is the diagnosis of the nature and causes of the problem of social, economic, and educational underutilization and underdevelopment of Black America. The course aims at the historic delineation of the factors responsible for this situation and the programs current and possible that may be utilized to improve the situation.

107 Economic Development of Europe and America 3 cr
A survey of the evolution of western economic institutions and practices. Emphasis is given to the origin of capitalism, the Commercial and Industrial Revolutions, the rise of the bourgeoisie and the spread of capitalism. A study is also made of the institutional development and productive growth of the United States economy. Not counted toward the major.

211 Principles of Economics I 3 cr
The first course in economics for the student who plans to major or minor in economics. The course seeks to acquaint the student with concepts and the logical basis to economic reasoning. Emphasis is placed on understanding the behavior of households and firms under competitive and imperfectly competitive market conditions.

212 Principles of Economics II 3 cr
This course is primarily concerned with aggregative economic relationships. The theory of the determination of national income is developed and attention is given to the construction of national income accounts. Attention is given to monetary and fiscal policy and their implications.

301 National Income Analysis 3 cr
A conceptual analysis of national income theory, its tools, its basic principles and its social and economic significance. It is concerned with explaining the development and nature of national income aggregates. The basic principles of national income theory are developed and explained in order to place into focus the operations of an economy and the many problems relating to it. Prerequisites 211, 212 or 101, 102.

302 Price and Production Economics 3 cr
An intensive study of the theory of demand, production and distribution. In addition recent developments in the theory of imperfect competition and oligopoly are carefully examined. Prerequisites 211, 212 or 101, 102, 213.

312 Public Finance 3 cr
A study of the organization and management of government revenues and expenditures with emphasis on American practices and policies of the various levels of government. Welfare economics and benefit cost analysis receive heavy consideration. Prerequisites 211, 212 or 101, 102, 213.

402 Comparative Economic Systems 3 cr
A comparative study of capitalism, socialism, communism and other economic systems with emphasis on analysis rather than mere description of the economics of various countries. Prerequisites 211, 212 or 101, 102.

403 Urban Economics 3 cr
Urban economics is intended to afford an understanding of how the urban economy works, of the forces which affect the level, composition, and distribution of the output of the urban economy, and of the economic issues behind current urban problems. The course analyzes the processes, stages and determinants of urban economic growth and development. Urban economics focuses on the problems and policy in the urban economy, income inequality, manpower, local public finance housing and land use patterns and transportation. A particular emphasis of the course is to provide the student with the theoretical tools and show their application to the dynamic, complex urban economy. Prerequisites 211, 212 or 101, 102.

405 International Economics 3 cr
This course is an introduction to international trade theory and the principles of international monetary economics as well as foreign trade policies. Topics to be discussed include the classical and neo-classical theory of comparative advantage, foreign exchange markets and balance of payments, adjustment mechanisms, analysis of the consequences of trade regulation and international liquidity problems. Prerequisites 211, 212 or 101, 102, 213.

406 International Business 3 cr
The course is offered by the Department of Commerce.

413 Labor Economics 3 cr
Analysis of the principles for wage and employment determination in contemporary American economy under non-union conditions as well as under collective bargaining. The institutional development underlying labor supply and demand is studied with direct emphasis on its impact on employment and production, on the general wage-level and on wage differentials, on the distribution of national income and on general social welfare. The course also includes a comparative study of problems in labor economics in American and other democratic countries. Prerequisites 211, 212 or 101, 102.

417 History of Economic Thought 3 cr
Shows the development of economic thought from the Age of Mercantilism to 1890. Major emphasis is placed upon the writings of Malthus, Smith, Ricardo, Mises, Koeltz, Veblen, and the Austrian School. It offers a study of the fundamental concepts of the writers and the influence of institutional conditions upon their philosophy. Major emphasis is placed upon value and distribution theory as it developed. Prerequisites 211, 212 or 101, 212.

418 Modern Economic Theory 3 cr
A brief review of classical tradition emphasizing Smith, Ricardo and Mill, and Marxist socialism showing their influence upon the evolution of Twentieth Century economic theory. Emphasis is placed primarily upon the writings of Marshall, Schumpeter, and Keynes, applying their theories to the problems of contemporary economic policy. Special emphasis is given to economic growth and development and the essentials of welfare economics in today's society. Prerequisites 211, 212 or 101, 102, 213.

419 Business Cycles and Forecasting 3 cr
This course is designed to study the process of economic change. Analyses of seasonal, cyclical, and secular movements will be undertaken. Theoretical and empirical aspects will be covered. Forecasting techniques will also be studied. Prerequisite 301.

420 Business and Public Policy 3 cr
A study of the regulatory techniques used by government to influence and modify business
behavior. This course also includes an analysis of market structure, conduct and performance considerations pertaining to the firm and the industry. Emphasis is given to the anti-trust laws and special regulatory problems. Prerequisites 211, 212 or 101, 102

421 Current Economic Issues
A seminar-like discussion of the state of the nation's economy and its current problems on the basis of critical examination of professional journal articles and economic reports by official and private sources (such as the President's Council of Economic Advisers). The purpose of the course is to begin developing in the graduating senior the ability to coordinate and apply the analytical knowledge he has acquired during his undergraduate study of economics and related fields of social science and business administration. Prerequisites 211, 212 or 101, 102

422 Monetary Theory and Policy
This course presents the chief theoretical contributions on money. The policy implications of these theories, past and present, will be emphasized. Concentration will center upon policy proposals and controversy in the monetary field since World War II. The theories and contributions of Wicksell, Fisher, J. M. Clark, Keynes, Robertson and Modigliani, among others are reviewed. The role of the interest rate is reviewed along with wage-price controversies, international gold flows, and the relationships between fiscal and monetary policies. Prerequisite 301

423 Theory of Economic Development
The course is designed to acquaint students with the areas of economic development. The subject matter of this course conveniently divides itself into five major categories— the nature of development and problems of measurement, theories of development, factors and forces affecting economic growth, different approaches to a higher standard of living, and problems of domestic and international stability. Approach to this course encompasses detailed study as well as strong emphasis on theoretical and critical analysis. Prerequisite 301

424 Problems, Policies and Case Studies in Economic Development
This course is a continuation of the first semester course in economic development. An attempt is made in this semester to apply the tools, techniques, and theories of development to selected regions and countries of the world. The course is divided into four broad areas—the nature and problems of the case study method, the nature of the socio-economic structure and its impact on development, problems of measurement and of comparison, and the changing role of the basic factors of production. Considerable time will be devoted to a critical study of the actual policy measures adopted for development by selected countries. Prerequisite 423

451 Seminar in Economics
The purpose of the seminar is to provide a vehicle for the advanced student to investigate separate subject areas in the field of Economic Theory. The intention is to provide a sound basis for further study at the graduate level. Seminar procedure will stress written and oral reports. Prerequisites 301, 302 and permission of the instructor.
invitation to students who have College Entrance Examination Board scores of at least 550 (achievement) and 625 (verbal) and who bypass English 102 by virtue of an Advanced Placement Test score of four or better, or display exceptional ability in English 102 and are recommended by their instructors. Students who complete the Sophomore Honors sequence (English 212, 213), and become English majors are entitled to enroll in one Honors seminar (300) each semester of their Junior year.

101, 102 English Composition 3 cr each
Practice in effective writing. Review of principles of grammar and rhetoric, introduction to literary types and forms. 101 is prerequisite to 102.

103 English Composition Honors 3 cr
An honors counterpart to English 102. Composition and introduction to literary types and forms. Participation by invitation only.

201, 202 English Literature Survey 3 cr each
Representative masterpieces of English literature in their literary and historical contexts.

203 Advanced Writing 3 cr
The course is designed to build upon writing skills learned in Freshman Composition and centers chiefly on development of style and accuracy. Enrollment by instructor's permission only.

205 American Literature Survey I—Beginning to Civil War 3 cr
Representative selections from major American authors treated in both their literary and historical contexts.

206 American Literature Survey II—After Civil War 3 cr
Representative selections from major American authors treated in both their literary and historical contexts.

207 The Novel 3 cr
An introduction to various types of American and British novels and the methods of discussing fiction.

208 Poetry 3 cr
Appreciation of British and American poetry, critical analysis of traditional and experimental poetic form, consideration of philosophical and social concerns of poetry.

209 Drama 3 cr
An historical survey of major dramatic forms through a selection of representative works by major playwrights from the classical tradition of Greece and Rome to the Theatre of the Absurd.

210, 211 Readings in World Literature I, II 3 cr each
A survey of major literary works of the Western world from Homer to Cervantes (210) and from Moliere to Camus (211) with emphasis on continental traditions. The course explores both the thematic preoccupation of Western writers and the development and evolution of literary forms.

212, 213 English Literature Honors 3 cr each
Honors counterparts to English 201, 202. Major British writers from Chaucer to Eliot. Participation by invitation only.

300 Honors Seminar 3 cr
(Special areas treated in these seminars will vary and will be designated in the schedule of courses each semester. Enrollment in the Honors Seminar is by invitation of the Honors Committee of the Department of English.)

307 The English Language 3 cr
An introduction to linguistic analysis with primary emphasis on the history of the structure of English from old to modern English.

308 Applied Linguistics 3 cr
Practical uses of structural linguistics in the teaching of composition and literature.

370, 371, 372, 373, 374, 375, and 376 Special Studies in English 3 cr each
Two or three courses in this sequence are offered every semester by the English Department to meet the current interests of both the students and the faculty. Examples of courses regularly offered are: Science Fiction, Literature Myth and the Modern World, The English Bible as Literature, Comparative Literature, The Film as Literature.

380, 381, 382, and 383 Writing Workshops 3 cr each
One or more courses in this sequence are offered each semester in a workshop format designed to develop students' creative and/or technical writing skills. Examples of courses regularly offered are: Poetry Workshop, Drama Workshop, Fiction Workshop, Writing for Business and Industry. Admission by instructor's permission only.

The remainder of the English courses are divided into areas of emphasis. During a four-semester period each course from each area will be offered at least once.

MEDIEVAL STUDIES

407 Medieval Genre 3 cr
An approach to the ideas and attitudes of the medieval period by studying one of its dominant genres such as the romance, the drama, the lyric, etc.

408 Introduction to Medieval Literature 3 cr
Readings and analysis of Medieval French, German, Old Icelandic, Old and Middle English Literature in modern English.

409 Chaucer 3 cr
A study of The Canterbury Tales and minor poems.

RENAISSANCE STUDIES

413 Sixteenth Century English Literature 3 cr
Survey including non-Shakespearean drama, Sidney, Spenser, Shakespeare, Marlowe and minor figures.

414 Seventeenth Century English Literature 3 cr
A survey of drama, prose and verse to 1660.

415 Milton 3 cr
A survey of Milton and his times. A close scrutiny of the minor poems and Paradise Lost and Samson Agonistes.

416 Renaissance Major Figures(s) 3 cr
A study of Renaissance thought and aesthetic in the works of one or more of its great writers: Spenser, Sidney, Donne, Johnson, etc.
DEPARTMENT OF ENGLISH

417 Renaissance Genre 3 cr
An approach to the ideas and attitudes of the Renaissance through one of its dominant genres—the lyric, the epic, the drama, etc.

SHAKESPEARE STUDIES

431 Shakespeare and His Contemporaries—Comedies 3 cr
A study of selected Shakespearean comedies compared and contrasted with the form and content of the work of other Elizabethan and Jacobean comic dramatists. Specific works to be selected by the instructor.

432 Shakespeare and His Contemporaries—Tragedies 3 cr
A study of selected Shakespearean tragedies examined in the perspective of tragic forms and themes as developed in the works of other Elizabethan and Jacobean playwrights. Specific works to be selected by the instructor.

433 Shakespeare I 3 cr
Comedies and romances

434 Shakespeare II 3 cr
Tragedies and histories

435 Shakespeare and the critics 3 cr
An intensive investigation of one or more of Shakespeare's plays designed to reflect how various approaches in its critical history have provided new insights into Shakespearean drama through the development of multiple perspectives. Specific works to be selected by the instructor.

EIGHTEENTH CENTURY STUDIES

441 English Classicism 3 cr
Developments of neo-classical literature from the Restoration to the death of Pope. Primary attention given to Dryden, Swift, and Pope.

442 Late Eighteenth Century English Literature 3 cr
Johnson and his circle, the development of the novel, the aesthetic movement.

443 Eighteenth Century Major Figure(s) 3 cr
A study of Eighteenth Century thought and aesthetic in the works of one or more of its great writers: Dryden, Swift, Pope, Johnson, Blake, etc.

444 Eighteenth Century Genre 3 cr
An approach to the ideas and attitudes of the Eighteenth Century through one of its dominant genres—the drama, the novel, the essay, etc.

NINETEENTH CENTURY STUDIES

451 English Romantic Literature 3 cr
A study of the aesthetic, moral, political, and literary aspects of English romanticism approached through the writings of Wordsworth, Coleridge, Byron, Shelley, Keats.

452 Victorian Literature 3 cr
A study of the poetry of Tennyson, Browning, Arnold, and the prose of Arnold, Carlyle, and Ruskin. Attention also given to the poetry of Morris, Rossetti and Fitzgerald.

453 Nineteenth Century Major Figure(s) 3 cr
A study of Nineteenth Century thought and aesthetic in the works of one or more of its great writers: Wordsworth, Tennyson, Browning, Dickens, Hardy, etc.

456 Nineteenth Century Genre 3 cr
An approach to the ideas and attitudes of the Nineteenth Century through one of its dominant genres—poetry, the novel, the essay, etc.

TWENTIETH CENTURY STUDIES

461 The Early Twentieth Century 3 cr
Selective study of authors representing the major literary types and trends from about 1890 to 1930. Hardy, Moore, Butler, Conrad, Yeats, Hopkins, Joyce and Eliot.

462 Contemporary Literature 3 cr
Major literary types and trends since about 1930. Woolf, Waugh, Greene, Auden, Spender, Thomas, Golding, and others.

463 Twentieth Century Major Figure(s) 3 cr
A study of Twentieth Century thought and aesthetic in the works of one or more of its great writers: Yeats, Joyce, Eliot, etc.

464 Twentieth Century Genre 3 cr
An approach to the ideas and attitudes of the Twentieth Century through one of its dominant genres—poetry, the novel, the drama, etc.

AMERICAN STUDIES

471 Early American Literature 3 cr
A study of the literature of America's Colonial and Federalist periods, emphasizing the political and belletristic writings of an emerging nation.

472 American Romanticism 3 cr
A study of the Romantic movement in America with emphasis on Emerson, Thoreau, and Poe.

473 American Realism 3 cr
The rise of realistic fiction subsequent to the Civil War through the end of the century, emphasis on Twain, James, and Howells.

474 Modern American Literature 3 cr
A study of American prose and poetry from the end of World War I to the present, including Frost, Fitzgerald, Hemingway, Faulkner, Bellow, etc.

475 American Literature Genre 3 cr
A study of American ideas and attitudes through the development of one of the dominant genres—the lyric, the novel, the short story, etc.

476 American Literature Major Figure(s) 3 cr
A study of some of the major American writers demonstrating the scope of their contribution to American letters—such writers as Twain, James, Poe, Faulkner, Hemingway, etc.

477 American Literature Special Studies 3 cr
A course designed to reflect particular current interests of faculty and students alike. Topics can be drawn from a wide range of areas such as historical background, aesthetics, theme and motif.
479 Afro-American Literature Civil War to Present 3 cr
A chronological survey of the literature of the Afro-American with the focus on the significant rebirth of the Black voice in contemporary America.

Fine Arts

Coordinator Mrs Patricia S Ingram

Survey and period courses in the history of western art are offered by the Art Division of the Classics Department to introduce the concepts of art history to those who wish to extend their visual perimeter and to understand the role of the visual arts in Western culture. Qualified students are advised to take collateral courses in classics, history, philosophy, and psychology, and additional upper division art history courses offered at member colleges of the Pittsburgh Council on Higher Education.

REQUIREMENTS FOR THE MINOR

The minor consists of 12 credits of 300- and 400-level courses. The prerequisites are six credits of introductory and survey courses at the 100- and 200-level or their adjudged equivalent. Areas of concentration include Ancient, American, and Modern art.

101 Introduction to the Visual Arts 3 cr
A study of the techniques and styles of architecture, sculpture, painting, and the graphic arts in Western society with an emphasis upon increasing the student's comprehension of our visually oriented culture. Recommended prerequisite for all upper division art history courses.

102 Introduction to Modern Art 3 cr
An attempt to render accessible to the spectator the realities formulated by the artists of the last two decades. Formal analysis of the art object and examination of the motivational forces which shaped its creation lead to an overall view of the structural framework of twentieth century painting and sculpture. (Offered in alternate years)

201 History of Art Ancient to Gothic 3 cr
A chronologically oriented, detailed presentation of the history of Western art. This survey deals with Near Eastern, Greek, Roman, Early Christian and Medieval art.

202 History of Art Renaissance to Modern 3 cr
A continuation of 201. Surveys Renaissance, Baroque, and Modern art in Western Europe. 201, 202 should be taken in sequence.

203 French Art 3 cr
A survey which discusses ideas, schools, and styles in the history of French art from the Roman occupation to the present. Areas of emphasis are Carolingian, Romanesque, Gothic, Renaissance, and Modern art. (Offered in alternate years)

204 Spanish Art 3 cr
A survey which considers the divergent factors which have shaped the Spanish artistic orientation from pre-historic times to the present. Areas of emphasis are the Moslem Conquest and Re-Conquest, Romanesque and Gothic art, the Spanish Renaissance, the 18th century, and the modern age. (Offered in alternate years)

251 Introduction to Design 2 cr
A studio exploration of the formal elements of design, including color, spatial relations, line, texture, and light. The class makes use of some of the contributions and approaches of the major stylistic schools to artistic and aesthetic problems. Pass/Fail course open to all undergraduates.

301 Greek Art 3 cr
A study of the architecture, sculpture, vase painting, and minor arts of the Greek world from Minoan to Hellenistic times. The student is introduced to the extensive vocabulary of Greek art which has been a continuing formative force in Western art. (Offered in alternate years)

302 Roman Art 3 cr
An introduction to Roman innovations in architecture, sculpture, and painting. The background of Roman art in Etruscan, Greek, and Egyptian civilizations is investigated, and the impact of Roman art in formulating Christian art, Renaissance Art and Neo-Classicism is analyzed. (Offered in alternate years)

312 Late Medieval Art 3 cr
Western European Art from the 11th to the 14th Century. Focus is upon the development of stone vaulting systems, monumental architectural sculpture, stained glass, fresco and panel painting, and illuminated manuscripts. (Offered in alternate years)

321 15th Century Renaissance Art 3 cr
A chronological study of the Renaissance spirit of the 15th century. Concentration is upon comparisons of Northern and Southern attitudes to man, nature, and social structure, and to materials, techniques, pictorial representation, and iconography. (Offered in alternate years)

331 Modern Art 19th Century 3 cr
A survey of the visual arts in the 19th century. The visual arts not only reflect the dramatic changes in the artists' use of form, color, line, texture and light, but also emphasize the changing political and social values in society.

332 Modern Art 20th Century 3 cr
A chronological study of 20th Century painting and sculpture which "looks beyond visual perception and tries to find the essence and meaning of reality." From cubism to conceptual art from Picasso to Pollock and Pop, this course offers a thorough exploration of the visual arts of the 20th Century.

341 American Painting and Sculpture 3 cr
An examination of the visual forms created by painters and sculptors of the United States between 1864 and 1976 with an emphasis upon arriving at a sharper image of our ancestors' and our own concept of reality.

342 American Architecture 3 cr
Construction, style, building types, and concepts of city planning in American architecture from the 17th century to the present. Field trips to important monuments in the
Pittsburgh area, including Falling Water, are scheduled

431 Selected Readings Variable Topics 3 cr
In-depth research, using the resources of Pittsburgh area libraries and of source material relevant to the history of Western art. Weekly seminars are conducted, trips to local and out-of-town museums are arranged, and individual research is programmed. Prerequisite: Permission of instructor.

442 Tri-State Architecture 3 cr
Weekly seminars on detailed aspects of American Architecture, particularly those pertinent to Western Pennsylvania, Eastern Ohio, and near-by West Virginia. Walking tours in Pittsburgh, automobile tours of the region, and independent research are scheduled. Prerequisite: American Architecture 342 (Offered in alternate years).

Department of History

Chairman Samuel J. Astorino, Ph.D.

The Department of History offers a program devoted to the study of mankind in diverse cultural settings through time. A large number of courses are taught by a faculty reflecting a variety of philosophical and methodological outlooks. Apart from the fact that the program fully meets the needs of students intending to pursue graduate work in historical studies, the history major will be well prepared for careers in law, business, or government service. Most importantly, the discipline of history provides an excellent synthesis of the liberal-arts education since it effectively joins together the humanities and the social sciences.

Requirements for the Major

At least 24 credits in addition to 111, 112. Of these 24 credits, at least six credits must be taken in American and six credits in European history, at least six credits from the sophomore survey courses, 211, 212, 221, 222, 231, 232 (twelve credits from this level are recommended), and three credits of an undergraduate historiography course, 481, 483, or 484.

The stated requirements aim to provide the student with a structured program of learning within which considerable flexibility is encouraged. The Man in History course (111, 112) acquaints the student with the basic themes of world history. A variety of second-year survey courses supply essential knowledge of the major periods of European and American history. Upper and advanced-level courses provide intensive studies of historical methodology, of the major cultural areas of the world, and of significant themes in history.

A maximum of 12 transfer credits in history can be applied to the major requirements.

Requirements for the Minor

Students who wish to minor in history should consult with the department's undergraduate advisor. The student is required to take 12 hours beyond 111, 112, including either 221, 222 or 231, 232, the remaining six credits should be scheduled with the advice of the department advisor.

Introductory Surveys

111, 112 Man in History 3 cr each
A survey of world history covering important aspects of human evolution. The first semester deals with prehistory and the major civilizations. The second semester concentrates on major trends significant to the development of the contemporary world.

211 The Ancient World 3 cr
A survey of the ancient cultures and their contribution to civilization with emphasis on the Greeks and the Romans.

212 Europe in the Feudal Age 3 cr
The world of the Middle Ages—a survey of medieval men's political, social, and cultural activities.

221 Europe from Renaissance to Revolution 3 cr
The history of Europe from the fourteenth through the eighteenth centuries—the era of transition and change from the medieval to the modern world.

222 Europe Industrialism and the Masses 3 cr
A historical analysis of Europe in the last two centuries, with particular attention to the relationship between technological and social change and its impact on politics and culture.

231 Development of the U.S. to 1877 3 cr
The historical development of American institutions, ideals, and society from earliest times to 1877.

232 Development of the U.S. since 1877 3 cr
The historical development of American institutions, ideals, and society since 1877.

Topical and Area Surveys

253 The Middle East to 1815 3 cr
A historical survey of the Near East from the rise of Islam to the decline of the Ottoman state, with particular attention to political, social, and cultural trends.

254 The Modern Middle East 3 cr
A study of the modern Near East with concentration upon the conflict between imperialism and nationalism, traditionalism and western influences, in the area.

255, 256. History of Asia 3 cr each
A survey of Asian civilization from ancient times to the present day, western colonization, the rise of the nationalist movement, and the establishment of modern states.

257, 258 Russian History 3 cr each
Development of society and state in Russia from its origins to the twentieth century.

259, 260 East-Central Europe 3 cr each
The medieval and modern history of the small nations situated between Russia and Ger-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>261, 262</td>
<td>Latin America</td>
<td>3 cr</td>
</tr>
<tr>
<td>263</td>
<td>The Colonial Period—Western Hemisphere</td>
<td>3 cr</td>
</tr>
<tr>
<td>265</td>
<td>England before 1715</td>
<td>3 cr</td>
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<tr>
<td>266</td>
<td>Modern Britain</td>
<td>3 cr</td>
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<tr>
<td>267</td>
<td>Canada</td>
<td>3 cr</td>
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<tr>
<td>269, 270</td>
<td>China</td>
<td>3 cr</td>
</tr>
<tr>
<td>303</td>
<td>History of Christianity I</td>
<td>3 cr</td>
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<tr>
<td>304</td>
<td>History of Christianity II</td>
<td>3 cr</td>
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<td>307, 308</td>
<td>History of Science</td>
<td>3 cr</td>
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<tr>
<td>311, 312</td>
<td>Afro-American History</td>
<td>3 cr</td>
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<tr>
<td>325</td>
<td>Greek History</td>
<td>3 cr</td>
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<tr>
<td>326</td>
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<td>337</td>
<td>Roman Imperial History</td>
<td>3 cr</td>
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<tr>
<td>338</td>
<td>Ancient Indian History and Civilization</td>
<td>3 cr</td>
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<td>348</td>
<td>Modern American Military History</td>
<td>3 cr</td>
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<td>356</td>
<td>Diplomatic History of the United States</td>
<td>3 cr</td>
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<td>357</td>
<td>History of the American Presidency</td>
<td>3 cr</td>
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<td>358</td>
<td>Civil War and Reconstruction</td>
<td>3 cr</td>
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<td>359</td>
<td>(459) The American Political Tradition</td>
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<tr>
<td>360</td>
<td>Constitutional History of the United States</td>
<td>3 cr</td>
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<tr>
<td>361, 362</td>
<td>History of the United States' Political Parties</td>
<td>3 cr</td>
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<tr>
<td>363</td>
<td>Cultural History of Medieval Europe</td>
<td>3 cr</td>
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<tr>
<td>365</td>
<td>The Origins of the Modern Mind</td>
<td>3 cr</td>
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<tr>
<td>366</td>
<td>The Modern Mind</td>
<td>3 cr</td>
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<tr>
<td>367</td>
<td>The Impact of Science on Society</td>
<td>3 cr</td>
</tr>
<tr>
<td>368-369</td>
<td>The American Mind I and II</td>
<td>3 cr</td>
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</table>

DEPARTMENT OF HISTORY
for “climates of opinion” diverse movements, and selected scientific, political, religious, social, and artistic topics.

EUROPEAN POLITICAL AND DIPLOMATIC HISTORY

373, 374 Diplomatic History of the Far East 3 cr each
Western imperialism in Asia: rise of Asian nationalism, analysis of international problems in current tension areas.

377 European Empire in the Nineteenth Century 3 cr
Examines the growth of the great colonial empires in the nineteenth century and their decline before the forces of nationalism.

378 European Diplomatic History, 1870-1960 3 cr
A study of European international politics since 1870, with emphasis upon the major developments, their origins and historic significance, and the evolving styles of diplomacy.

379 Revolutionary Movements in Modern European History 3 cr
An analysis of the major political and social revolutions in Europe since 1789, the nature of the revolutionary phenomenon, and the inevitable counter-revolutionary trend.

380 European Fascism 3 cr
An intensive study of the major fascist movements and regimes of the twentieth century in the light of the political, economic, social, intellectual and psychological tensions which produced them.

SOCIAL HISTORY

385 Women in History 3 cr
The too often neglected history of one-half of the human race with special emphasis on the life experience of women in past ages.

387 Frontier, Environment, and Utopia 3 cr
A historical view of man’s attempts to create new societies concentrating upon ecological issues: world frontier experiences, and utopian or futuristic ventures.

389 Social History of Modern Europe 3 cr
An examination of major demographic, economic, and social trends in modern European history.

391 Social History of Russia 3 cr
The study of the development, role and inter-relations of the social classes in Russia and the Soviet Union, and in East Central and Southeastern Europe.

392 The East European Ethnic (Immigrant) Experience 3 cr
The examination of the social and economic conditions and cultural milieu that the various waves of East European immigrants left behind in Europe and found in America, and the study of their inter-ethnic relationships and adjustment to American society.

393 Economic History of the United States to 1865 3 cr
Investigates the economic factors in the development of the U.S. and their impact on social and political issues.

394 United States’ Labor History 3 cr
Concentrates chiefly on the relations between worker and employer from the early craftsmen to the industrial union member.

DEPARTMENT OF JOURNALISM

395 Urban History United States
The rise of urban America, from the colonial period to World War I

396 History of American Immigration since 1880
Focuses on the nature and problems of the more recent immigrant, his cultural contributions, the effects of selectivity and changing native attitudes.

397 Reform in Modern America
A study of political, economic, and social reform movements in the United States since the late nineteenth century.

398 Economic History of the U.S. Since 1865
Investigates the economic development of the United States after the Civil War emphasizing its impact on social and political issues as background for current economic problems.

399 The Search for Identity—U.S. Since 1945
A discussion of selected contemporary issues foreign and domestic, which illustrate the identity crisis in the U.S.

HISTORIOGRAPHY

481 The Modern Historian
The development of modern historical thinking and scholarship as it is related to the major intellectual and social currents of modern times.

483 Special Problems in European History
Emphasizes the conflict among historians over interpretations of significant events in European history.

484 Special Problems in American History
Emphasizes the conflict among historians over interpretations of significant events in American history.

Department of Journalism

Chairman: C. S. McCarthy, M. Ed.

The Department of Journalism tries to integrate the liberal education of a student by emphasizing how a professional education for a career in the mass media relates to the liberal arts tradition. The journalism curriculum concentrates upon the development of communicative skills for creative and responsible positions in such areas of mass communication as advertising, broadcasting, newspapers, public relations, magazines and specialized publications.

REQUIREMENTS FOR THE MAJOR

Twenty-seven semester hours are required for a major. Required courses are 167, 267, 268, 367, 369, 376 and 466 or 468 or 470.
REQUIREMENTS FOR THE MINOR

Eighteen semester hours credit are required for a minor. Credits must include 167, 267, 268, and nine other journalism credits approved by the head of the Department of Journalism. Minors do not qualify for the Department’s Professional Internship program.

167 Introduction to Mass Communications 3 cr
An introduction to the role, principles, and responsibilities of newspapers, broadcasting, magazines, advertising and public relations. Course open to non-majors. (Offered both semesters)

267 Basic Reporting and Writing I 3 cr
Fundamentals of news reporting and writing. Applied practice in laboratory sections. Two hours lecture, two hours laboratory.

268 Basic Reporting and Writing II 3 cr
Advanced writing of the more complex types of news stories. Applied practice in laboratory sections. Two hours lecture, two hours laboratory.

367 Radio-Television Principles and Writing 3 cr
A lecture-laboratory course in the study and application of writing principles and practices for radio and television. Two hours lecture, two hours laboratory. Open to non-majors. Prerequisites 267, 268, or approval of Department.

369 Advertising Principles and Writing 3 cr
A lecture-laboratory course in the study and application of writing principles and practices for advertising. Two hours lecture, two hours laboratory. Open to non-majors. Prerequisites 267, 268, or approval of Department.

370 Developing the Broadcast Program 3 cr
Creation, development and presentation of the radio and television program including documentaries, panels, dramatic and non-dramatic programs. Theory and practice of direction. Two hours lecture, two hours laboratory. Prerequisite 367 or approval of Department.

371 Mass Communications and Public Opinion 3 cr
A study of the nature of public opinion and the mass communications process, effects of propaganda, and barriers to effective communication. Open to Juniors and Seniors.

372 Communication Law 3 cr
A study of the legal rights, responsibilities and ethics of the mass media. Open to Juniors and Seniors.

375 Editing 3 cr
A lecture-laboratory course in editing and presenting the written word for the mass media. Prerequisite 267 or approval of Department.

376 History of the Mass Media 3 cr
Concentrated lecture-discussion course in an historical context of major social influences affecting American Journalism from the colonial press period to contemporary society. Open to Juniors and Seniors.

378 Photography for Journalists 3 cr
A lecture-laboratory course in the preparation and use of photography for publication.

Fundamentals of camera work developing, printing, print evaluation and editorial uses of photography emphasized. Prerequisite 267 or approval of Department.

380 Specialized Publications 3 cr
A study of association, business, industrial, professional and religious communications with emphasis on the internal and external publications in industry. Prerequisites 167, 267, 268, 375.

405 Advanced Writing for Journalism 3 cr
A lecture-laboratory course in gathering and interpretive writing of news of urban affairs. Analysis of major political, economic, and social developments that have local news interest and significance. Two hours lecture, two hours laboratory. Prerequisites 267, 268.

409 Advanced Writing for Advertising 3 cr
A lecture-laboratory course in copywriting and design for advertising. Two hours lecture, two hours laboratory. Prerequisite 369.

411 Advanced Writing for Magazines 3 cr
A lecture-laboratory course in writing for the general and specialized magazine. Two hours lecture, two hours laboratory. Open to Juniors and Seniors.

413 Advanced Writing for Radio and Television 3 cr
A lecture-laboratory course in writing for Radio and Television. Two hours lecture, two hours laboratory. Prerequisite 367.

420 International Communications 3 cr
A study of world news systems and an analysis of their roles as instruments of world understanding. Open to Juniors and Seniors.

430 Public Relations Principles and Writing 3 cr
Study of the principles and concepts of public relations needs, significance and influence. Analysis of various publics constituting the whole public. Case studies. Applications of principles in student research projects. Open to Juniors and Seniors.

441 Secondary School Communications 3 cr
Function of publications and broadcasting in the secondary school. Role and responsibilities of school-press advisors. Teaching of Journalism on the high school level. Course is directed at students seeking a communication certificate in Pennsylvania. Open to Juniors and Seniors. Prerequisites 167, 267.

466 Professional Internship Advertising 3 cr
A supervised observation-experience program of study and assignment to an assigned advertising agency or industrial advertising department in conjunction with the American Association of Industrial Advertisers, Pittsburgh Chapter. Prerequisites 167, 367, 369, 376, 409. (Offered both semesters)

468 Professional Internship Broadcasting 3 cr
A supervised observation-experience program of study and assignment to an assigned commercial/educational broadcasting station in the Pittsburgh area. Prerequisites 167, 267, 268, 369, 370, 413. (Offered both semesters)

470 Professional Internship Newspapers 3 cr
A supervised observation-experience program of study and assignment to a member newspaper of the Pennsylvania Newspaper Publishers Association in Allegheny County. Prerequisites 167, 267, 268, 367, 369, 375, 376, 405. (Offered both semesters)
476 Professional Internship Public Relations 3 cr
A supervised observation-experience program of study and assignments to an assigned
public relations agency, association, industrial, or non-profit educational group in the
Pittsburgh area Prerequisites 167, 267, 268, 367, 369, 375, 376, 380, 430 (Offered both
semesters)

Department of Mathematics

Chairman Robert G. McDermot, Ph D

The Department of Mathematics offers a sequence of modern courses which will (a)
aid the student in developing his ability to think scientifically and form independent
judgments, (b) provide the student with a breadth and depth of knowledge concern-
ing not only manipulative skills but also fundamental and essential theory, (c)
enable the student to use his knowledge in the formulation and solution of
problems, and (d) give the student the necessary basis or foundation for the pursuit
of graduate study or productive effort at the bachelor level

REQUIREMENTS FOR THE MAJOR

BACHELOR OF ARTS DEGREE
A minimum of 32 semester hours is required These must include 115, 116, 215, 216,
303, 415, 416, the remainder must be selected from courses numbered above 300
Exceptionally able students are encouraged to seek departmental approval to include
500 level mathematics courses listed in the graduate catalog

BACHELOR OF SCIENCE DEGREE
A minimum of 32 semester hours is required These must include 115, 116, 215, 216,
303, 415, 416, the remainder must be selected from courses numbered above 300
Exceptionally able students are encouraged to seek departmental approval to include
500 level mathematics courses listed in the graduate catalog

Physics 211, 212 is an extradepartmental requirement The minor must be in
physics, chemistry or biology

REQUIREMENTS FOR THE MINOR

A minor must include 115 and 14 additional credits selected from courses numbered
above 115 but not including 117, 116 must be included

For science majors, Mathematics 215, 216, 315, 321 are recommended
For economics and social science majors, Mathematics 222 or 308, 225 or 301,
306 are recommended

101 Elementary Mathematics 3 cr
A remedial course in the fundamentals of algebra, including the solution of equations
and inequalities Not to be counted toward a major, minor or the mathematics/science
area requirement

103, 104 General Mathematics I, II 3 cr each
A modern course meeting the needs of non-science students in the College for a general
knowledge of the fundamental concepts and processes of mathematics Not counted
toward a major or minor

105 Basic Mathematics 4 cr
A modern course in college algebra and analytic trigonometry for those students who do
not possess the prerequisites for 115 Not counted toward a major or minor

107, 108 Introduction to Modern Mathematics I, II 3 cr each
This course is designed for elementary education students in the School of Education
Not to be counted toward a major, minor, or the mathematics/science area requirement

115, 116, 215 Calculus I, II, III 4 cr each
A unified course in analytic geometry and calculus Considers theory of limits, functions,
differentiation, integration, series, geometry of space, functions of several variables, and
multiple integration Students will be introduced to Fortran programming Prere-
quises for 115 Two years of algebra, one year of plane geometry, and one-half year of
trigonometry

117 Fortran Programming 1 cr
A study of Fortran and Fortran programming Credit will not be allowed for both this
course and 115

215 Ordinary Differential Equations 3 cr
The course includes solutions, existence of solutions, and applications of differential
equations Prerequisite 215

221 History of Mathematics 3 cr
This is a survey of the historical development of mathematics Prerequisite One year of
College Mathematics preferably including one semester of calculus Not counted
toward a major

222 Basic Computer Science 3 cr
An introduction to programming electronic digital computers, operating systems and
compilers Machine language and an assembly language are presented and used to solve
several problems Prerequisite One year of high school algebra Not counted toward a
major

225 Fundamentals of Statistics 3 cr
A basic course in probability theory and descriptive and inferential statistics for non-
majors Prerequisite High school algebra Not counted toward a major

301, 302 Introduction to Probability and Statistics I, II 3 cr each
A mathematical treatment of probability theory and mathematical statistics including
probability distributions, random variables and their transformations, expectation,
point and interval estimation, and sampling distributions Prerequisite 116 or
equivalent

303 Principles of Modern Algebra 3 cr
A study of basic properties of groups, rings, modules and fields Prerequisites 115, 116

306, 307 Linear Algebra I, II 3 cr each
A study of linear transformations and matrices Prerequisites 115, 116
Department of Modern Languages and Literatures

Chairman  Reyes Carbonell, Ph D

Two "tracks" of language teaching on the elementary and intermediate level are offered in French, German, and Spanish, both of which satisfy college degree requirements. One of these emphasizes reading and the other reading, writing, speaking, and the aural comprehension. In the conversation and composition courses, the student's fluency in the active use of the language is strengthened. Subsequent courses stress primarily literary studies in which the student is systematically introduced to a survey of the literature and is given a working acquaintance with the culture of the groups whose language he is studying. He is also presented a choice of courses dealing with specific works, authors, and auxiliary subjects.

Career opportunities for a student having a knowledge of foreign languages are in the fields of teaching, state employment, foreign service, and industry. United States business firms in Europe, Latin America, Asia, and Africa need personnel fluent in or at least conversant with appropriate foreign languages.

REQUIREMENTS FOR THE MAJOR

The department offers major programs in French, German, and Spanish, and non-major courses in Russian and Italian.

The major program in Modern Languages and Literatures consists of a minimum of 24 semester hours above the 200 level. Required courses are:

- **French**—301, 302, 312 (or 314 or 316), 401, 402, 420, 451, 452. Additional courses open to qualified undergraduates are 461, 462, 504, 505.
- **German**—301, 302, 401, 402, 403, 404, two courses from the group 411, 412, 413, 414. Those who are unable to complete the sequence of courses 401-404 must consult the chairman. Additional courses open to qualified undergraduates are 451, 452, 504, 505, 453, 505 (see Graduate School bulletin).
- **Spanish**—301, 302, 312 (or 314 or 316), 401, 402, 420, 451, 452. Additional courses open to qualified undergraduates are 504, 505, 453, 454, 461, 462.

Courses taken out of progression will not carry credit. Credit will not be given for both 201, 202 and 211, 212, which are intermediate level courses. 302 is prerequisite to all 400 courses. 400 courses are conducted in the respective language.

On the elementary and intermediate levels, special sections are provided to foster work of greater range and depth by students whose interests and abilities make them eligible.

**JUNIOR YEAR ABROAD** Majors are strongly encouraged to participate. Further information may be obtained at the Department Office.

REQUIREMENTS FOR THE MINOR

The minor program consists of a minimum of 12 semester hours above the 200 level.

- **French**—Donald Kellander, M A., Director
- **German**
- **Spanish**

FRENCH—Donald Kellander, M A., Director

101, 102 Elementary French  3 cr each
Fundamentals of oral and written French. Three hours lecture and one hour laboratory each week.

111, 112 Elementary French for Reading  3 cr each
The course will stress basic grammar and structure for reading comprehension.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
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<tbody>
<tr>
<td>201, 202</td>
<td>Intermediate French</td>
<td>3 cr</td>
<td>French 102 or equivalent. An intensified review and continuation of 101, 102</td>
</tr>
<tr>
<td>211, 212</td>
<td>Intermediate French for Reading</td>
<td>3 cr</td>
<td>French 102 or 112</td>
</tr>
<tr>
<td>329, 330</td>
<td>Readings in Modern French Authors</td>
<td>3 cr</td>
<td>Selections from modern works of literature. Does not carry credit toward a major</td>
</tr>
<tr>
<td>301, 302</td>
<td>French Conversation and Composition</td>
<td>3 cr</td>
<td>These two courses, or their equivalents, are prerequisites for all of the following</td>
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<td>312, 314, 316</td>
<td>Literature Workshop</td>
<td>3 cr</td>
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<tr>
<td>401, 402</td>
<td>Survey of French Literature</td>
<td>3 cr</td>
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<tr>
<td>403</td>
<td>Phonetics</td>
<td>3 cr</td>
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<td>420</td>
<td>Mohore</td>
<td>3 cr</td>
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<tr>
<td>440</td>
<td>Directed Readings</td>
<td>Var cr</td>
<td>Reading of literary texts under close faculty supervision For majors only, and only</td>
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<td>with permission of the Department</td>
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<tr>
<td>451, 452</td>
<td>General Survey of French Culture and History</td>
<td>3 cr</td>
<td>A study of the principal events of French history, France's contribution to the arts</td>
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<tr>
<td>461, 462</td>
<td>Senior Seminar on 20th Century French Literature</td>
<td>3 cr</td>
<td>Prose, Drama, Poetry</td>
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**GERMAN**—Paul Neumarkt, Ph D, Director

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<tbody>
<tr>
<td>101, 102</td>
<td>Elementary German</td>
<td>3 cr</td>
<td>Fundamentals of oral and written German. Three hours lecture and laboratory each</td>
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<td>week</td>
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<tr>
<td>111, 112</td>
<td>Elementary German for Reading</td>
<td>3 cr</td>
<td>The course will stress basic grammar and structure for reading comprehension</td>
</tr>
<tr>
<td>201, 202</td>
<td>Intermediate German</td>
<td>3 cr</td>
<td>Prerequisite: German 102 or equivalent. An intensified review and continuation of</td>
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<td></td>
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<td>101, 102</td>
</tr>
<tr>
<td>211, 212</td>
<td>Intermediate German for Reading</td>
<td>3 cr</td>
<td>Prerequisite: German 102 or 112</td>
</tr>
<tr>
<td>239, 240</td>
<td>Readings in Modern German Authors</td>
<td>3 cr</td>
<td>Prerequisites: German 202 or equivalent. Selections from modern works of literature</td>
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<tr>
<td>249, 250</td>
<td>Readings in Scientific German</td>
<td>3 cr</td>
<td>Prerequisite: German 201 or three years of high school German. Designed for students</td>
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<td>in scientific and technical curricula</td>
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<tr>
<td>301, 302</td>
<td>Conversation Based on 19th Century Literature</td>
<td>3 cr</td>
<td>Prerequisite: German 202 or equivalent. This course is prerequisite to all courses</td>
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<td>above 400 and is required of all majors in German</td>
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<tbody>
<tr>
<td>401, 402</td>
<td>German Literature from Beginnings to Lessing</td>
<td>3 cr</td>
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</tr>
<tr>
<td>403, 404</td>
<td>German Literature in the Age of Goethe</td>
<td>3 cr</td>
<td></td>
</tr>
<tr>
<td>411, 412</td>
<td>German Grammar and Composition</td>
<td>3 cr</td>
<td>Required of students enrolled in German 401, 402, 403, 404</td>
</tr>
<tr>
<td>420</td>
<td>Faust</td>
<td>3 cr</td>
<td></td>
</tr>
<tr>
<td>440</td>
<td>Directed Readings</td>
<td>Var cr</td>
<td>Reading of literary texts under close faculty supervision. For majors only, and only</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>with permission of the Department</td>
</tr>
<tr>
<td>451, 452</td>
<td>German Civilization I, II</td>
<td>3 cr</td>
<td></td>
</tr>
<tr>
<td>461, 462</td>
<td>Senior Seminar on 20th Century Literature—</td>
<td>3 cr</td>
<td>Drama, Prose, Lyrics</td>
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**ITALIAN**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>101, 102</td>
<td>Elementary Italian</td>
<td>3 cr</td>
<td>Fundamentals of oral and written Italian. Three lecture hours and one hour laboratory</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>each week</td>
</tr>
<tr>
<td>111, 112</td>
<td>Elementary Italian for Reading</td>
<td>3 cr</td>
<td>The course will stress basic grammar and structure for reading comprehension</td>
</tr>
<tr>
<td>201, 202</td>
<td>Intermediate Italian</td>
<td>3 cr</td>
<td>Prerequisite: Italian 102 or equivalent. An intensified review and continuation of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Italian 101, 102</td>
</tr>
<tr>
<td>211, 212</td>
<td>Intermediate Italian for Reading</td>
<td>3 cr</td>
<td>Prerequisite: Italian 102 or 112</td>
</tr>
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**RUSSIAN**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
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</thead>
<tbody>
<tr>
<td>101, 102</td>
<td>Elementary Russian</td>
<td>3 cr</td>
<td>Fundamentals of oral and written Russian. Three hours lecture, one hour laboratory</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>each week</td>
</tr>
<tr>
<td>201, 202</td>
<td>Intermediate Russian</td>
<td>3 cr</td>
<td>Prerequisite: Russian 102 or equivalent. Intensified review and continuation of Russian</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>101, 102</td>
</tr>
<tr>
<td>239, 240</td>
<td>Readings in Modern Russian Authors</td>
<td>3 cr</td>
<td>Prerequisites: Russian 202 or equivalent. Selections from modern works of literature</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>This course is given by arrangement only</td>
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<tr>
<td>301, 302</td>
<td>Conversation Based on Russian Literature</td>
<td>3 cr</td>
<td></td>
</tr>
<tr>
<td>401, 402</td>
<td>Survey of Russian Literature</td>
<td>3 cr</td>
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**SPANISH**—Reyes Carbonell, Ph D, Director

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
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</thead>
<tbody>
<tr>
<td>101, 102</td>
<td>Elementary Spanish</td>
<td>3 cr</td>
<td>Fundamentals of oral and written Spanish. Three hours lecture, one hour laboratory</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>each week</td>
</tr>
<tr>
<td>111, 112</td>
<td>Elementary Spanish for Reading</td>
<td>3 cr</td>
<td>The course will stress basic grammar and structure for reading comprehension</td>
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Department of Philosophy

Chairman: Andre Schuwer, Ph D

The program offered by the Department of Philosophy is designed to be a basic part of the student's liberal education. It is intended to introduce students to philosophical thinking past and present, to provide a discipline for asking the basic questions of life and to help students begin relating their other academic subjects to one another and to human experience. The department is made up of professors who have different philosophical interests, and it also respects the right of the student to decide for himself or herself on all issues. It believes that intellectual dialogue about basic human concerns will help the student be better prepared to meet the needs of mankind today and in the future. In order to make this kind of dialogue possible, the courses are concerned both with the past history of ideas and with the present problems of man's individual and social existence.

Requirements for the Major

The department requires its majors to take nine philosophy courses above the 100 level of which at least three have to be at the 300 level. At least two other courses have to be at the 400 thematic level.

Requirements for the Minors

Four three-hour courses, other than the Introductory (100 level) and in addition to courses which satisfy the General Curricular Requirements. At least two of the four courses must be taken from above the 200 level.

Suggestions for Minors

The following suggestions are offered as an indication of courses that might be especially pertinent to the respective areas of major concentration. However, students in consultation with their advisor, are free to select any combination of courses either related or unrelated to their major subjects.

1. Communications and Humanities Majors: 203, 204, 205, any 300 level History of Philosophy courses, 404, 406, 407, 408, 411, 414
2. Natural Sciences Majors: 205, 207, 304, 322, 404, 409
4. Theology Majors: 203, 205, 208, any 300 level History of Philosophy courses, 401, 402, 403, 404, 405, 408, 410, 411, 414

The College philosophy requirement may be fulfilled by taking any of the courses listed, except that it cannot be fulfilled by taking both 101 and 111. Course 101 or 111 is recommended as a first course in philosophy for all students. Students who have questions about whether they are prepared well enough in philosophy to take an advanced course are encouraged to consult the professor who is scheduled to teach the course that particular term. Courses designed for majors are open to non-majors on consultation with their advisors.

Introductory Courses

101 Philosophy of Human Existence 3 cr
An introduction into philosophical thinking, offering the student a basic philosophical interpretation of man. This interpretation begins with concrete problems which lie within the student's own sphere of interests and concerns and then sheds light on the substantive philosophical issues involved in those problems. For example, the problem of freedom, responsibility, individuality and community might be approached from the perspective of the contemporary city, the contemporary university, current attitudes toward sexuality or the problems of technology, politics and economics.

102 Ethics 3 cr
An introduction to ethical theories of past and present time. Contemporary moral issues will be considered in the light of these theories.
DEPARTMENT OF PHILOSOPHY

103 Logic
An analysis of the formal relationships between propositions, including valid forms of argument. Also, a description of some important informal aspects of ordinary discourse, such as types of definitions and common fallacies of inference

111 Introduction to Philosophy
A first-hand study of selected philosophical texts, with the aim of introducing students to the nature of philosophical thinking, and to the variety of philosophical issues and areas, methods, and theories

BASIC THEMATIC COURSES

203 Philosophy of Religion
An introduction to the distinctive nature of religious symbolism as an autonomous mode of experience thought, discourse and activity. Special attention to such questions as the nature and grounds of religious affirmation (as distinct from scientific, artistic and philosophical affirmation), the relation of the God of religion to the God of philosophy, the religious significance of history, evil, creativity and ethics. Assigned readings include both traditional and contemporary writers

204 Philosophy and Literature
A study of selected works of authors such as Sophocles, Chekhov, Dostoevsky, Rilke, Nietzsche, D. H. Lawrence, Ibsen, Edward Albee, O'Neill, and Samuel Beckett. This study will respect the integrity of the works as artistic creations, enable the students, through class discussions, to create a shared experience of the works and proceed to a philosophical discussion of the issues presented by the writer, his characters or the situations he creates

205 Existential Phenomenology
Introduction to the methods, central commitments, and style of interrogation which characterize existential phenomenology. Lectures and discussion over texts by major thinkers, such as Being and Time by Heidegger, Phenomenology of Perception by Merleau-Ponty, and selected writings by Sartre. Primarily for majors

206 Philosophy of Society
An examination of the question of social existence. This course will explore man as a social and political being. Relations between the moral, the social, the political and the economical will be considered

207 Philosophy of Science
A study of the philosophical implications of the methodology and conceptual framework of modern and contemporary science. Contrast between Newtonian and contemporary physics regarding such philosophical questions as the nature of matter, space-time, technique and technology

208 Meaning of Contemporary Atheism
The meaning of Atheism as a contemporary phenomenon. Critical evaluation of some sociological and psychological theories of the origin of religion

209 Concentrated Readings for Non-Majors
Similar to, but more elementary than, 325

HISTORY OF PHILOSOPHY COURSES

300 Ancient Philosophy
A study of the beginning of Philosophy in Greece, from the Presocratics to Plotinus with readings principally taken from Plato and Aristotle

DEPARTMENT OF PHILOSOPHY

303 Medieval Philosophy
An intensive philosophical study of some medieval texts in English translation, selected as representative of the broad range of issues, approaches and theories which characterize the major Christian, Jewish and Islamic philosophical thinking of the period. Some questions confronted are the existence and nature of God, the nature of discourse about God, the relation between religious belief and philosophical reasoning, the nature of man

304 Modern Philosophy
This course emphasizes the most basic philosophical problems of the period from Descartes to the end of the 19th century. Course work consists of an analysis of several important texts chosen from such philosophers as Descartes, Leibniz, Hume, Kant, Hegel, Marx, Kierkegaard and Nietzsche. There is an emphasis on the tension resulting from the clash between the emerging natural sciences on the one hand and classical metaphysics on the other. The emergence of the historical sense. These problems are debated and discussed, particularly with their ramifications for contemporary thought

305 Contemporary Philosophy
A study of contemporary philosophy from 1900 to the present introducing the methods and history of selected twentieth-century movements with detailed attention to existential phenomenology

322 Survey of American Philosophy
From Puritanism to the Enlightenment, Transcendentalism, Pragmatism, with emphasis on key figures in American philosophy, Pierce, Dewey, James, Royce, Santayana, Whitehead, etc.

323 Oriental Philosophy
Introduction to Oriental thought through study of its major structures in their historical setting, aiming at understanding its characteristic vision. Examination of perspectives presented by traditions such as Confucianism, Taoism, Buddhism, Hinduism, etc.

325 Concentrated Philosophical Readings
This course is an in-depth study of one or several philosophers such as Plato, Aristotle, Aquinas, Oecum, Descartes, Kant, Wittgenstein, Strawson, Heidegger, etc., varying in subject matter from time to time. The specific author or authors will be announced in the schedule each semester

ADVANCED THEMATIC COURSES

401, 402 Thomism (Being, Knowledge, Man)
A course dealing with the texts by St Thomas in ontology, epistemology and the philosophy of man. Neothomism (Maritain and Gilson) together with reference to Transcendental Thomism (Rahner, Lonergan, etc.) designed for philosophy majors

403 Philosophy of God
Thematic course focusing especially on the experiential and conceptual relationships among the themes of God's nature, freedom and morality. Designed for philosophy majors

404 Philosophy of Knowledge
Interrogation of the nature and experience of Truth, especially by way of the explorations of Aristotle, Thomas Aquinas, Hegel, Husserl and Heidegger. Distinction between philosophical and non-philosophical (scientific or theological) knowledge. Designed for philosophy majors

405 Philosophy of Being
The approaches of philosophers such as Aristotle, Aquinas, Kant, Hegel and Heidegger

406 Aesthetics 3 cr
Theories of beauty and the sublime in the light of contemporary problems of human existence, with special attention to Plato, Aristotle, Kant, Nietzsche, Heidegger, Camus and van der Leeuw. Artistic creativity as an approach to life and as a possible foundation for philosophical thinking.

407 Philosophy of Language 3 cr
Introduction to the philosophy of language. Among the topics considered are the character and limits of formalistic approaches to language, the centrality of the speaking subject, relation of language to thought, language and linguistics, language and poetry, theories of structuralism.

408 Foundations of Ethics 3 cr
A study of the philosophical foundations of ethics. Foundational theories of Greek and Scholastic philosophy, Modern and contemporary ethical theories of foundation. Designed for philosophy majors.

409 Symbolic Logic 3 cr
An introduction to the methods of symbolic logic and a consideration of various issues in logical theory with regard to their philosophical significance.

410 The Philosophy of Karl Marx 3 cr
Historical and dialectical materialism in the writings of Karl Marx, Friedrich Engels, the Soviet Philosophy and contemporary Marxism.

411 Philosophy of History 3 cr
An analysis of linear and cyclical models of history in the light of the contemporary crisis of human existence with special attention to St. Augustine, Hegel, Marx, Nietzsche and the twentieth-century existentialism. The fundamental question of the course is how meaning can be found in historical experience.

412 Senior Seminar 3 cr
Devoted to a serious analysis of the major texts of one important figure in the history of philosophy. Designed for philosophy majors.

413 Special Topics 1-3 cr
414 Philosophy of Man 3 cr
A reflective articulation of a conception of human existence, taking account in particular of the relations between man and nature, history, science, technology, society, religion. Concrete issues treated will be for example embodiment, intersubjectivity, finitude, theory and practice, transcendence. Designed for philosophy majors.

Department of Physics

Chairman Walter S. Skinner, M.S.

The program in the Department of Physics aims at not only providing today's student with a fundamental background in physics and its interrelationships with other sciences and disciplines, but also providing a suitable flexibility of program which will best fit the graduate for the challenge of today. While the department is hopeful that each student majoring in Physics will continue his professional growth, it is also realized that professional growth is not confined to a single path. The undergraduate program, therefore, provides the essential background for success in graduate work, but also provides the student with fundamental qualifications which will equip him for an available position in a research institution, government agency, or private corporation.

REQUIREMENTS FOR THE MAJOR

A minimum of 32 semester hours is required for a major. These credits must include 211, 212, 301, 329, 330, 361, 372, 402, 429, 430, 473, 474 (483, 484, or 485 may be substituted for 474 with departmental approval).

Extradenartmental requirements: Chemistry 121, 122 or Biology 111, 112, Mathematics 115, 116, 215, 216, 315. (Physics 471 may be substituted for Mathematics 315 with departmental approval), and two years of a modern language.

If a student takes 207, 208-General Physics and the Modern World and either 201, 202-General Physics or 211, 212-General Analytical Physics, the credits for the 207, 208 will not apply to the total number required for the degree. Credit will not be given for both 201, 202 and 211, 212.

REQUIREMENTS FOR THE PHYSICS MINOR

The minor consists of eight hours in the General Analytical Physics (211, 212) and 12 credits of upper division physics on the 300 and above level. The department will structure the minor program from the course offerings to fit, as nearly as possible, the needs and desires of the individual student.

REQUIREMENTS FOR THE EARTH SCIENCE MINOR

The minor consists of an introductory sequence of 101 and 102, which must be taken as the first courses, and 12 credits chosen from 203, 204, 303, 304, 305 as available to the curriculum. Not all courses are taught each semester. 101 is prerequisite for all courses. For minors in Earth Science, 101 and 102.

201, 202 General Physics 4 cr each
A course designed to give the student a basic knowledge of the mechanics and properties of matter, heat, wave motion, sound, magnetism, electricity, light, and modern physics.
330 Physics and the Modern World 3 cr each
A course for nonscientists. A lecture course attempting to bridge the two-culture gap. This course includes basic philosophical concepts in physics which pervade all human discipline. Examples are taken from modern physics, relativity, elementary particles, quantum theory, statistics, etc. to cover model-making, dynamics, ensemble behavior, symmetry. No mathematics beyond elementary school level are required.

211, 212 General Analytical Physics 4 cr each
This is a general introduction to the basic physical theories and concepts. An attempt is made to develop in the science student the quantitative approach of the physicist to the physical universe. Some of the topics which may be included are vectors, Newton's Laws of Motion, the motion of a particle in space, momentum, energy, rigid body motion, fluids, special relativity, gravity, wave motion, random processes, the first and second laws of thermodynamics, electricity and magnetism, the modern theory of nuclear, atomic, gases and solids, optics. Corequisite for Physics 211. Mathematics 116. Lecture, three hours, Laboratory, two hours.

301 Thermodynamics 3 cr
This is an intermediate level course covering the fundamental principles of thermodynamics, kinetic theory and statistical mechanics. The following is a partial list of topics generally included: temperature, thermodynamic systems, work, heat, the first and second laws, ideal gases, entropy, Maxwell's equations, the kinetic theory of ideal gas, and the basic concepts of statistical mechanics. Prerequisite: Physics 212, Mathematics 215.

366 Applied Electronics Laboratory 2 cr
This course seeks to combine a treatment of the principles of modern electronic instrumentation with practical laboratory experience. Topics which will be included are passive and active electronic components, electronic measuring instruments, power supplies, amplification, feedback and control, impedance matching, linear and digital devices. Emphasis will be on proper use of instrumentation rather than on advanced principles of design. Prerequisite: Permission of instructor.

329 Advanced Laboratory I 1 cr
Advanced Lab I is concerned with electromagnetic phenomena and bases of modern electronics. A set of programmed experiments is performed and analyzed by the students. Subjects covered are the use of electronic instruments, dynamics of electrons in electronic and magnetic fields, electric circuits. Prerequisite: 212 or 202 and consent of instructor.

330 Advanced Laboratory II 1 cr
Advanced Lab II is a continuation of Advanced Lab I and includes the following topics: basic semiconductor electronic devices, transistor amplifiers and oscillators, the klystron and microwave optics. Prerequisite: 329 or consent of instructor.

361 Mechanics 4 cr
An intermediate course in the application of Newtonian Mechanics to simple systems. A short introduction to Vector Calculus precedes the main discussion. The topics normally covered are dynamics of a mass point, systems of particles, generalized coordinates and Lagrange's Equations. Other topics which may be included by the instructor are normal modes, rigid bodies, two bodies with a central force, and waves on a string. Prerequisites: Mathematics 212, Mathematics 215.

372 Electromagnetism 4 cr
The following topics are usually discussed: electrostatics, energy relations in electrostatic fields, dielectrics, currents, and their interaction, magnetic properties of matter, AC circuits. Maxwell's equations, reflection and refraction of electromagnetic waves, dipole and plane wave radiation. Prerequisites: Physics 212, Mathematics 215.

402 Optics 3 cr
Optics provides the student with an opportunity to penetrate the surface of optical phenomenon and observe the underlying physical principles. Topics treated in the past have included: the mathematical formulation of Huygen's principle, the approximation of geometrical optics with limited applications, coherence, interference, diffraction, polarization, crystal optics using Maxwell's formulation of electromagnetics, and laser optics.

429, 430 Advanced Laboratory III 1 cr each
Advanced Lab III is a one-year senior research project in which the student selects a project, develops it, and prepares a report. Topics are selected from those suggested by members of the Physics Department or associated departments, and the work is carried out in close coordination with the selected advisor. Work, however, must be the student's own. No grade is assigned for the first semester, and the grade for the course is assigned upon completion of the project.

471 Mathematical Methods of Physics 3 cr
The purpose of this course is twofold. It collects the mathematical needs in the usual advanced undergraduate physics texts in one cover and develops them in a systematic way. It provides concrete analytical examples to the abstract algebraic and geometrical concepts upon which the modern quantum mechanics is based. Topics included are vectors, matrices, vector calculus, functions of a complex variable, Fourier series, Fourier integrals, special methods of partial differential equations in Physics. Intuitive arguments are used; rigor is not attempted, application is emphasized. Prerequisite: Mathematics 216.

473 Atomic Physics 3 cr
This course provides an introduction to special relativity and quantum theory with applications drawn mainly from modern theories of the atom. Topics usually included are quantum theory of heat radiation, the uncertainty principle, quantum theory of the hydrogen atom, many-electron atoms, atomic spectroscopy. Prerequisites: 212 and consent of instructor.

474 Quantum Mechanics 3 cr
A basic introduction to the dynamics of quantum phenomena. Some of the topics covered are Schrodinger Equation, oscillators, hydrogen atom, linear operators, Hermitian matrices, observables, conservation theorem, spin, angular momentum and perturbation theory. The course will emphasize application to simple systems. Prerequisites: Physics 212, Mathematics 215.

483, 484, 485, 486 Special Topics 1-3 cr each
Designed to allow the Physics major flexibility in scheduling, this course may include the following:

483 Nuclear Physics 3 cr
Many of the experimental and theoretical aspects of the atomic nucleus are discussed...
Some of the usual topics are two-nucleon systems, radioactivity, (alpha, beta and gamma decay), radiometric dating, interaction of radiation with matter, nuclear structure, nuclear reactions, and nuclear fusion. Prerequisite: 202 or 212

484 Introductory Solid State Physics
3 cr
Bulk properties of materials are discussed from both the phenomenological and microscopic approaches. Typical topics are the geometric structure of solids, waves and diffractions, thermal properties, the free electron model, bandwidth, superconductivity, magnetic properties, and magnetic resonance. Prerequisites: 212 and consent of instructor

485 Relativistic Mechanics
3 cr
This course is an introduction to the Special and General Theories of Relativity. A list of topics which may be discussed are absolute space, Einsteinian Kinematics, Einsteinian Optics, spacetime and four-vectors, relativistic particle mechanics. Prerequisites: Physics 212, Mathematics 215

486 Shop Techniques
1 cr
A basic introduction to machine shop practices necessary to experimentalists in all fields. Some of the areas covered are shop equipment and its use, materials, soldering and welding techniques, mechanical drawing and schematics, electronics construction techniques and practical application.

EARTH SCIENCE

101 Physical Geology
3 cr
This introduction to the geological processes and materials will concentrate on the makeup of our planet and the materials involved. Study will also include physical features and processes of the earth, as presently understood, which have created the present features. Geological relation to environment is also examined.

102 Historical Geology
3 cr
A study of the earth’s history which relates tectonic movements of the crust. Mountain building processes and life history with their interrelations will be discussed. Evolution of local features will be discussed also.

103 Physical Geology Laboratory
1 cr
An introduction to the identification of rocks and minerals by composition and appearance and the interpretation of topographic maps. The use of maps to identify the causes of drainage and some effects of water and erosion will be experienced. Mapping tools will be introduced, as well gemstone systems.

104 Historical Geology Laboratory
1 cr
An accompaniment for ES 102, providing an introduction to sedimentation and the use of fossil identification. Columnar sections, Aerial Geologic maps, and Aerial Photos will be used.

203 Astronomy
3 cr
Introduction to the study of astronomy and the basics of observation. Study will include telescopic types and the known universe as identified from present study. Course will, if possible, include arrangements with Buhl Planetarium and Allegheny Observatory. Star types and distances will also be examined.

204 Meteorology
3 cr
Elementary study of meteorology and weather systems in the local area as well as the world patterns. In the event the University is successful in obtaining funds, a weather station will be installed on Mellon Hall and observation and prediction practiced. Local and US Weather Bureau services will be used and analyzed.

DEPARTMENT OF POLITICAL SCIENCE

303 Oceanography
3 cr
An introduction to the marine environment including the geology and ecology. Attention is paid to the importance and dangers of the ecosystem. Characteristics of ocean water currents, tides, and circulation patterns will be discussed. Summer courses may be combined with one of several universities offering facilities.

304 Environmental Earth Science
3 cr
An examination of the problems of ecology and the impact of modern living on the systems of the earth which are necessary for plant and animal life. The individual effects of both natural and man-made pollution and their results, as well as possible cures. An advance over 101, 102 with an effort to have the student gain a balanced, non-hysterical appreciation of cause, effect and search for solution.

305 Physiology of the US
3 cr
Introduces the student to the various topographic and physiographic differences in the contiguous states as well as Alaska and Hawaii. This course is designed to allow the student to become familiar with the terrain, resources, economies, and individual problems of the various regions of our country. An approach to demonstrate the fact that no generalization may be made to fit all areas at once, but different problems are associated with each resource and each region.

Department of Political Science

Chairman: A. Kenneth Hesselberg, Ph.D.

Political science is concerned with developing the person. Through the study of the science of politics, the student will develop his analytical and intellectual skills. Political science graduates pursue careers in many diverse fields including governmental administration and service teaching careers at various levels, law, and business.

Requirements for the Major

Twenty-four semester hours are required for a major in political science in addition to 101. These credits must include 308, 309, and 405 or 406. Political Science 101 is prerequisite to all other courses.

101 Introduction to Political Science
3 cr
An investigation of the most fundamental concepts involved in the study of political society.

201 American Political System
3 cr
Case studies in the American Political System—An intensive investigation of selected problem areas in the American System of government.
215 National Strategy 3 cr
A study of the elements that constitute the strategic environment and the forces that affect the application of these elements in the formulation and determination of national security strategy

221, 222 American Federal Government 2 cr each
An intensive analytical description and evaluation of the American Constitutional system with emphasis upon the basic institutions of government

225 The Afro-American and the American Political System 2 cr
The purpose of this course is to analyze the American (United States) political system as it relates to the Afro-American population, and their relationships with the wider political community

231 Constitutional Law 3 cr
An intensive investigation of the role of the Supreme Court in the American system of government, concentrating upon the study of selected key court decisions. Prerequisites 221, 222

240 American Political Parties 3 cr
An intensive study of the roles of interest groups and political parties in the decision-making processes of the American system of government with attention devoted to the internal dynamics of these institutions

241 The American Presidency 3 cr
A study of the role of the President at the center of the decision-making process in the American political system

242 The American Congress 3 cr
An investigation of the operation of the Congress of the United States within the American system of government

276 Voting and Election Behavior 3 cr
An examination of the determinants of opinions and political beliefs, political participation, and voting behavior, the significance for democratic government of findings in these areas. For majors only

301 State and Local Government 2 cr
A study of the position of the state and local governments in the Federal Union

302 Municipal Government 2 cr
A study of the role of local government in the state and federal systems

306 Comparative Communist Ideologies 3 cr
An analysis of the major ideological themes expressed by the communist regimes of the USSR, Eastern Europe, China and Cuba

308 Comparative Political Systems 3 cr
A systematic, multifocused analysis of selected political systems

309 International Relations 3 cr
A study of the major factors involved in international relations including such concepts as sovereignty, nationalism, balance of power, and international law and organization

312 International Law and Organization 3 cr
A survey of the historical development and present role played by international law in the world community and the formation and operation of such organizations as the United Nations and its specialized agencies

315 Politics of the Emerging Nations 3 cr
A topical study of the politics of the emerging nations including nationalism, political integration, political parties, and the role of the military and elite

316 Politics of Africa 2 cr
A study of the principal theories and issues in the politics of sub-Saharan Africa

318 Nationalism 3 cr
A study of the dynamics of nationalism with emphasis on the role of nationalism in the developing nations

320 United States Foreign Policy 3 cr
A study of American foreign policy since the Second World War, with emphasis on the central present issues and the domestic sources of foreign policy

321 Government and Politics of Eastern Europe 3 cr
An analysis of political developments in the communist regimes of Eastern Europe with special emphasis on relations between the USSR and Eastern Europe in the post-Stalinist era

325 Juniors Honor Seminar 2 cr
Intensive study of selected topics in Political Science. Admission by invitation of the Department

402 Soviet Foreign Policy 3 cr
An analytical study of the development of Soviet foreign relations since 1917, with special emphasis upon the post-Stalinist era

404 Simulation in International Politics 3 cr
Students spend the semester simulating an international conflict situation. They act as foreign policy decision-makers, applying the principles, concepts, and instruments of international politics. For majors only

405, 406 Western Political Thought 3 cr each
A study of political ideas as distinct from and yet related to political institutions which constitute our perennial western political heritage

407 American Political Thought 3 cr
An analysis of the issues which have played a fundamental role in American Politics, from colonial church-state problems, to modern liberalism and conservatism

408 Theory of Comparative Government 3 cr
An examination of the basic theories and concepts in contemporary approaches to comparative political systems

409 Theory of International Relations 3 cr
A study of various theoretical approaches to an understanding of international relations including political realism, systems analysis, decision-making, and equilibrium analysis

410 Oriental Political Thought 3 cr
This course purports to explore the cultural heritages of China and India insofar as, and to the extent that, they reveal themselves either directly or indirectly in expressions of political thought
Department of Psychology

Chairman  Rev Edward L. Murray, C.S.Sp., Ph.D

The undergraduate program of the Department of Psychology is designed (a) to introduce and familiarize students with the fundamental content, issues, and interests of various areas of psychology and critically evaluate and reformulate these in the context of psychology as a human science, (b) to foster intellectual and personal freedom and critical thinking as essential to the humanizing process, (c) to prepare the professionally oriented student for advanced study, (d) to provide a foundation for careers involving human services. To these ends, the department offers a wide variety of courses covering psychology conceived as a human science, a natural science, and within a historical perspective. Further study in graduate school prepares students for careers in mental hospitals, schools, mental health and social welfare agencies, business and industry. In our rapidly changing society, the demand for professionally trained psychologists is increasing.

While the department believes that human scientific psychology is the most viable and encompassing approach to the study of man, it also realizes its responsibility to expose its students to other psychological approaches. Hence, every major who plans to enter graduate school in psychology is strongly encouraged to take advantage of the offerings in sister universities through the procedure of cross-registration.

REQUIREMENTS FOR THE MAJOR

The major program consists of 103-Introduction to Psychology plus a minimum of 24 semester hours. These credits must include 220 and 223. Majors desiring to pursue graduate study in psychology are strongly advised to take six additional credits through cross-registration at other universities (Learning Theory, Experimental, Perception, Memory, etc.), and 225 Statistics in the Mathematics Department, which may also be considered a part of the mathematics/science requirement.

Finally, it is recommended that majors enroll in a hospital or community practicum for credit, and/or do volunteer work in a neighborhood clinic. The three credits earned in practicum are included in the 24 required credits, an additional three credits in practicum may be earned above and beyond the required minimum of 24. Information about such opportunities can be obtained from the department course advisor.

The psychology department has set up a dual advisement system. The course advisor and the faculty advisor. Prospective majors should consult the Department Course Advisor concerning the special procedure followed for the declaration of the major.

REQUIREMENTS FOR THE MINOR

Requirements for a minor are 103 and 223 and any three of the following: 225, 328, 352, 361, 390, plus 400 level courses with permission of the department head. Psychology 103 is a prerequisite to all courses.

103 Introduction to Psychology 3 cr

An introduction to fundamental concepts, methods, and points of view in psychology. These will be examined from both traditional and phenomenological perspectives. This course is a prerequisite to all other courses in the department.

220 Systematic Psychology 3 cr

A course designed for and open only to Majors. Its purpose is to offer an in-depth study of some standard interests of psychology, such as sensation, perception, learning, and motivation. These will be examined from various traditional perspectives, for example, from behavioristic, physiological and psychoanalytic perspectives.

223 Introduction to Existential Phenomenological Psychology 3 cr

An examination of the assumptions implicit in psychology's historical development as a natural science, and an introduction to alternative foundations, literatures, and practices of psychology conceived as a specifically human science. This course is a prerequisite for Psychology 356 and 410 and is a requirement for psychology majors.

225 Developmental Psychology I (Infancy and Childhood) 3 cr

Growth and development of the child with an emphasis on understanding of personality development.

226 Developmental Psychology II (Adolescence and Maturity) 3 cr

The description and understanding of the behavior and development of the growing person from adolescence through the stages of adulthood to the experience of death.

227 Human Development 3 cr

Basic principles of human development over the life span. This course is primarily intended to fulfill a requirement for Education and Nursing students. Not counted toward a major.

230 Psychology of Community Experience 3 cr

This course is an exploration into different phenomena of a community. Issues such as one's openness to the group, individual priorities versus group priorities, intimacy versus privacy, etc. are examined. This exploration emphasizes personal participation by class members in the class. Community and interpersonal exercises will be used often in the classroom. Registration is limited and requires permission of the instructor.
280 History of Psychology 1
An overview of the principal figures and issues constituting the history of psychology from its precursors to contemporary contributors

328 Psychology of Personality
A critical examination of fundamental issues and themes of the major personality theories of personality and the integration within these constructs of theoretical and empirical contributions of psychology and psychiatry, implications for research, diagnostics and psychotherapy

340 Social Psychology
The foundations of social behavior—culture, social processes and social movements, social attitudes values and roles, public opinion, propaganda and communication personal participation in society

352 Abnormal Psychology
An examination of the theories and data of disordered human existence. Included will be the traditional diagnostic categories, such as neuroses and psychoses, examined in terms of personal, social, and cultural aspects of these disorders

356 Research Psychology Theory and Practice
A description and interrogation of the meaning of scientific investigation in psychology, including both standard and human science approaches and methods. The values and limits of these approaches, and a consideration of the meaning of investigation in psychology conceived as a human science. Permission of department head for non-majors

361 Psychology of Identity and Fulfillment
This course is explicitly designed to be personally relevant to the life of the student. Texts, lectures, group discussions and written work all focus on the way in which identity is lived individually and collectively. Identity is seen and descriptively articulated as a contextual phenomenon involving culture, interpersonal relations, learned traditional ways of living, as well as a developing sense of self given to the individual. (Open to Juniors and Seniors only)

370 Psychology of Aesthetic Experience
A psychological articulation of the aesthetic dimension of human existence. The course content will be both theoretical and empirical

390 History of Psychology II
A dialogue with particular historical figures in psychology geared to an understanding of contemporary themes. Students will be engaged in the reading of selected primary sources. Prerequisite 280

410 Advanced Existential Phenomenological Psychology
A detailed investigation of selected works in existential-phenomenological philosophy and psychology. Prerequisite 223

415 Applied Psychological Practicum
A setting of applied psychology provides an opportunity for active participation with professionals in their work. In addition to a practicum in a psychiatric hospital, from time to time other settings will also be available, such as community mental health centers and youth programs. Prior coursework in psychology is a prerequisite. Abnormal Psychology is required for clinical settings. Psychology majors only, with permission of department head. Repeatable for a maximum of six credits

425 The Individual and His World
A social psychology course that examines the contemporary individual's relationships to society from a developmental and cross-cultural perspective. Emphasis is on communication processes and theories of speech as they relate to interest groups and special communities

432 Gestalt Psychology
An examination of the contributions of Gestalt Psychology to the development of both traditional and human science psychology. Emphasis is on such phenomena as thinking, perception, insight, and concrete and abstract behavior, especially through the works of Koffka, K objer, and Goldstein. Permission of department head for non-majors

433 Principles of Psychoanalytic Thought
An examination of the times and contributions of Freud and selected other major psychoanalytic theorists. Permission of department head for non-majors

434 Psychology of Language and Expression
A consideration of communication as a live embodied relation of the person to world and to others. Emphasis is on phenomenological theorists. Permission of department head for non-majors

450 Contemporary Issues in Clinical Psychology
An examination from a human science perspective of the approach, methods, and current issues of clinical psychology. Clinical psychology includes psychological assessment, intervention and therapy and promotion of optimal existence. Prior coursework in psychology is advisable especially 223. Permission of department head for non-majors

457 Independent Studies
This course is designed to provide the exceptional student with an opportunity for pursuing a particular course of study in which he is keenly interested under the guidance of a faculty member. As such it is restricted to the psychology major and presupposes that he is well into the field of psychology. For the most part it is reserved for seniors, particularly those who intend graduate study in psychology, and is conducted after the manner of a tutorial. A student who wishes to take this course should clear it with a particular faculty member and then receive in writing permission of the department head

490 Special Topic
This course is a variable one. For the most part, it is reserved for visiting professors who are invited by the psychology department of the University to introduce the students to their own areas of expertise. It may also be used to introduce experimental courses or highly specialized studies by one of the regular faculty. In such instances the instructor may establish prerequisites. Repeatable. Permission of department head for non-majors required
Department of Sociology

Chairman Chester A. Jurczak, Ph.D.

Undergraduate instruction in sociology contributes to the liberal education of students regardless of major and to the preprofessional training leading to graduate work in sociology and social work, urban affairs, urban planning, and criminology. Helping students in practical ways to live effectively and to become effective in practical attacks on social problems is another objective of the department.

Sociology studies all of this formally in courses designed to give students a sense of direction, a selective taste of materials and methods, and motivation so that they can devote some of their energies to independent observation and experimentation, and develop their own concepts about how society functions.

REQUIREMENTS FOR THE MAJOR

A minimum of 24 semester hours, not including 101, are required for a major in Sociology, these credits must include 201 or 209 and 304 or 314.

REQUIREMENTS FOR THE MINOR

A minimum of 12 semester hours, not including 101, are required for a minor. 488, 489, and 491 are reserved for majors only.

Sociology 101 is a prerequisite to all courses except 102 and 203. 102 can be substituted for 101 as a prerequisite for 306, 307, and 310. All 300 and 400 courses are for Juniors and Seniors only.

101 Survey of Sociology
A broad survey of the social and cultural aspects of environment 3 cr

102 Survey of Anthropology
An introduction to the field of Anthropology both physical and cultural 3 cr

195 Military in Society
A study of the organizational setting, the social processes and recent fundamental changes of the American military 3 cr

201 Sociological Theories
A study of selected European and American theorists. For sociology majors and minors only 3 cr

202 Sociology of Social Problems
Study of person-structure-change frameworks applicable to contemporary social issues 3 cr

203 Survey of Social Work
Survey of the history and areas of social work-casework, group work and community organization, public and private welfare programs 3 Cr

205 Person and Society
An exploration of socialization, person's interaction with structure and culture, small groups and collective behavior 3 cr

208 Black Ghetto
Study of the structure, problems, and changes in the American Black Ghetto 3 cr

209 Social Work Theories
A study of the theories underlying social work practice, including a review of the classic schools of social work. Prerequisite Sociology 203. For sociology majors and minors only 3 cr

304 Methods in Sociology
Discussion and application of techniques and research procedures used in sociological research. For sociology majors and minors only 3 cr

306 Personality and Culture
A cross-cultural examination of human social systems in terms of their relevance to personality development and interaction 3 cr

307 Behavioral Anthropology
Discussion of the relationship between culture and biology 3 cr

308 Ethnic Groups
A comprehensive survey of roles performed and problems faced by ethnic groups 3 cr

309 Women in Society
The role of women in culture, and the study of women’s movements for liberation 3 cr

310 Physical Anthropology
Study of the origin of man, comparative study of anatomical differences among men, and the study of the influences of physical environment on man 3 cr

312 Sociology of Sports
Study of the institutions of sports and their relation to American culture and other institutions 3 cr

313 Sociology of Sexual Behavior
Discussion of sociological studies of sexual behavior 3 cr

314 Social Work Methods
Study of case study study-diagnosis-therapy process, interviewing-counseling, and program planning. Prerequisite Sociology 203. For sociology majors and minors only 3 cr

325 Family Systems
Comparative study of the family, the interaction of the family with other community institutions 3 cr

326 Urban Society and Ecology
Analysis of the metropolitan complex of central city, suburbs, and urban fringe and its impact on structures within its environs, ecological, demographic and planning factors will be analyzed 3 cr

327 Sociology of Work and Industry
Study of sociological theory and findings in the area of work and industry 3 cr

329 Religion in American Society
An analysis of American religious groups as social phenomena 3 cr

334 Delinquency
A study of the nature, trends, extent and causes of juvenile delinquency, evaluation of existing therapies will be examined 3 cr
335 Criminology 3 cr
A study of causes of crime and its treatment

337 Corrections 3 cr
A discussion of preventive and penological approaches to the delinquent and criminal and
their situations Prerequisite Sociology 334 or 335

338 Race Relations—Black and White 3 cr
Analysis of the contemporary racial crisis in America in the light of sociological concepts
and theories

340 Afro-American Minority 3 cr
Concentration on the structure and culture of the Afro-American group with its attendant
problems

341 Sociological Measurement 3 cr
Discussion of problems of measurement in sociological research For sociology majors
and minors only

454 Political Sociology 3 cr
A study of power relationships in government and other social systems

488 Field Research 3 cr
Independent study under a selected mentor Student performs a field research project
Prerequisite Sociology 204 For sociology majors only

489 Field Work 3 cr
Student does directed study in one or more social work agencies Prerequisite Sociology
203 and 314 For sociology majors only

491 Independent Reading and Study 3 cr
For sociology majors only

Department of Speech Communication and Theatre

Chairman Eva C. Robotti, M.A.

The program provides training essential to the several areas of speech communication. The department offers both its majors and interested students from other fields the opportunity to choose courses from a particular area of concentration or the whole range of the discipline

AREAS OF CONCENTRATION

Social Communication This focuses on the theories and techniques of human communication on both the personal and societal levels. The student of social communication examines the concepts and procedures which govern men's interactions as individuals and as parts of the mass. He also learns the practical arts of critical analysis and persuasive communication. This training is excellent preparation for careers in law, government, administra-

tion, personnel, public relations, industrial communications, advertising, sales, social work, and all fields which involve human symbolic interaction.

Recommended courses 101, 102, 204, 206, 300, 304, 311, 406, 421

Theatre/Media The Theatre/Media concentration prepares the student for the fields of applied communication - theatre, radio-television - and public relations. This area lays a solid groundwork for careers in acting, directing commercially or in educational theatre, producing, the many aspects of broadcasting, and public relations. Along with classroom theory, students will have opportunity to obtain practical experience on stage and backstage in Red Masquer productions, and by on-and-off-the-air work at WDUQ (90.5 FM), Duquesne's twenty-five thousand watt National Public Radio affiliate. Ideally, the theatre/media student combines both activities.

Recommended courses 190, 200, 201, 301, 305, 306, 307, 309, 310, 405, 407, 421

Aesthetics of Communication This is designed to introduce the student to the aesthetic values of the spoken language by providing courses which are related to speech as a presentational art. Among such offerings are courses which deal with the art of vocally projecting the experience of literature as manifested in works of great poetry and prose and courses in the vocal presentation of dramatic characters. One of the more singular department offerings is a course training the student in the art of orally presenting Biblical literature, considered by Duquesne to be a rare experience.

Student interested in this area have opportunity to display their artistic skills in oral presentation through Duquesne University Reader's Guild, oral presentation of poetry and oral performance of dramatic works are two of the major functions of this organization.

Recommended courses 190, 201, 301, 307, 309, 310, 419, 421

Speech Pathology The profession of speech pathology and audiology is concerned with impairments in the processes of communication — speech, language, and hearing. Upon completion of graduate education, a speech pathologist or audiologist may provide clinical services or work in basic and applied research. He or she may be employed in schools, hospitals, laboratories, community service centers, or colleges and universities. Speech pathology and audiology is a rapidly growing field, and the demand for trained personnel far exceeds the supply. This area of concentration at Duquesne is a pre-professional program designed to prepare the student for graduate study in speech pathology and audiology.

Required courses 201, 203, 204, 303, 308, 409, 410, 420, 421

REQUIREMENTS FOR THE MAJOR

A minimum of 30 semester hours is required for a major in Speech Communication
and Theatre. Majors will be required to enroll in three of the following four courses:

101, 102, 190, 201
A maximum of 12 transfer credits in speech can be applied to the major requirements

REQUIREMENTS FOR THE MINOR

The minor consists of 18 credits, six credits in required introductory courses and 12 additional credits. There are five emphases that the student may follow:

1. **Social Communication**
   - 101, 102, plus 12 credits in any of the following: 204, 206, 300, 304, 311, 406, 421

2. **Theatre/Media**
   - 190, 201, plus 12 credits in any of the following: 200, 305, 306, 307, 309, 310, 405, 407, 421

3. **Aesthetics of Communication**
   - 190, 201, plus 12 credits in any of the following: 301, 307, 309, 310, 419, 421

4. **Speech Pathology**
   - 201, 203, plus 12 additional credits. Courses 303 and 409 are required, the remaining six credits may be taken in any of the following: 306, 410, 420, 421

5. **General Speech Communication and Theatre**
   - 190 and either 101 or 102, with 12 additional credits apportioned in the following manner: six credits in any of the following: 204, 206, 300, 304, 311, 406, plus six credits in any of these: 200, 201, 301, 305, 306, 307, 310, 405, 407, 419

Suggested activities for majors and minors in Speech Communication and Theatre include the Red Masquer Dramatic Organization, the department-sponsored Reader’s Guild, WDUQ Radio and Television, the Debate Team, Intercollegiate Conference on Government, the Duke (student newspaper), and United Nations Organization.

101 **Process of Communication**
   - Provides an understanding of the nature of the communication process by examining man from the perspective of how he believes

102 **Techniques of Oral Communication**
   - Developed communicative skills necessary to critically analyze verbal discourse and to perform effectively in public speaking situations which confront the educated person

190 **Introduction to Theatre Arts**
   - A survey of theatre as an art form, involving the selective integration of a number of skills and disciplines to bring about the aesthetic of the theatrical moment. Beginning with lectures on the roles of the director, actor, designer, and various craftsmen, the course will work up to a sampling of the various modes and forms of drama in terms of the exigencies of production

200 **Radio and Television Announcing**
   - The application of the principles of proper delivery to the field of oral reporting and continuity announcing, including enunciation, pacing, selective emphasis, tonal variance, the use of technical material, and an introduction to foreign language pronunciation. The facilities of WDUQ-FM and WDUQ-TV will be available for laboratory experience

201 **Phonetics**
   - An approach to the English language based upon the fundamentals of vocal and articulatory speech sounds as systematized by the International Phonetic Association
with major concentration on the oral communication of a dramatic role. Prerequisite: 307 or permission of the instructor.

311 Communication Theories 3 cr
Communication theories applied to contemporary systems of belief. Prerequisite: 101 or permission of the instructor, recommended 304.

369 Methods of Teaching Communication 2 cr
A course for Education majors designed to equip the future teacher with procedures and methods used in the classroom.

405 American Theatre and Drama 3 cr
Survey of the major American theatrical movements and dramatic literature from the Colonial period to the present with emphasis on the twentieth century. Playwrights, designers, and theatrical companies are studied as reflections of American culture.

406 American Public Address 3 cr
Examines the interrelated impact of verbal communication and significant political issues in American history.

407 Stage Directing 3 cr
Studies principles, theories, and practices involved in the staging of a play for performance, emphasizing problems of staging and interpretation confronting the director. Enrollment by instructor’s permission only.

409 Hearing and Audiology 3 cr
This course will consider the nature of sound, the process of hearing, and hearing impairment. The different types, causes, and the measurement of hearing impairment will be discussed. Exposure to audiometric testing will also be available. Prerequisite: 203 or permission of the instructor.

410 Speech Problems for the Classroom Teacher 3 cr
This course focuses on the speech problems encountered in the classroom. Emphasis is placed on the recognition, and remediation of those speech problems. The classroom teacher will be exposed to the speech therapy program in the schools as well as to the teacher’s role in speech remediation in the classroom. Prerequisite: 203 or permission of the instructor.

419 Oral Communication of Biblical Literature 3 cr
A course devoted to the consideration of the Bible in terms of the spoken language with its accompanying oral interpretative connotations and techniques. Prerequisite: 301 or permission of the instructor.

420 Speech Problems of the Exceptional Child 3 cr
This course will investigate the speech and language development, speech problems, and speech remediation of the mentally retarded, brain injured, aphasic learning disabled, and cerebral palseid child. The role of other professionals, in addition to that of the speech pathologist in speech remediation will be explored. Prerequisite: 203 or permission of the instructor.

421 Independent Study 3 cr
The student will work on a selected project under the supervision and guidance of a faculty member. Prerequisite: Permission of the instructor and the department chairman.

Department of Theology

Chairman Rev. Charles J. Fenner, C S Sp, Ph D

Duquesne’s Department of Theology affirms that the academic study of man’s religious experience is essential to a complete education of man. The Department fulfills its role in theological studies by the pursuit of the following aims: 1) it emphasizes Catholic Theology, in brotherly dialogue with other Christian traditions, non-Christian traditions and Judaism, as the key element in Duquesne’s commitment to Catholic education on the university level; 2) it acknowledges the fact of man’s universal search for religious meaning and experience, and seeks not only to offer the possibility of a study of the varying approaches to religion, but also to place Catholic Theology in communion with that quest; 3) it aspires to a fruitful encounter with other university disciplines, since the department is convinced that theology’s concerns are related to all vital human issues, some of which other university disciplines explore.

Accordingly, the department has organized its courses into three divisions: Biblical Studies, Christian Studies, and Selected Religious Studies.

REQUIREMENTS FOR THE MAJOR

The major program consists of a minimum of 27 credits beyond the 100 level. These must include 201, 213, 214, 220, 498, the remaining credits will be chosen in consultation with the student’s advisor.

REQUIREMENTS FOR THE MINOR

A minor consists of four courses beyond the 100 level. The department has also prepared suggested sequences which may be helpful to a student wishing to concentrate in a certain area of theology, e.g., Biblical Studies, Roman Catholic Theology, World Religions, Religion and Culture, Christianity in History, etc. These sequences are available in the department upon request.

COURSE INFORMATION

The numbering of the course indicates the level of approach:
100 These courses are of the basic, survey type, wherein emphasis is on breadth rather than on depth, and serve as background for other courses.
200-300 These courses treat of subject matter in a specific area of theology and in greater depth than in the 100 category.
400 Selected topics are dealt with at a more advanced level, independent research is required.

BIBLICAL STUDIES

114 Interpreting Bible 3 cr

This course presents the tools necessary to understand an ancient literary work and affords a unified view of the historical events of the Old and New Testaments that are essential to an understanding of Jewish and Christian faiths, as well as the prominent religious ex-
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>213</td>
<td>Special Introduction To The Old Testament</td>
<td>3 cr</td>
</tr>
<tr>
<td>214</td>
<td>Special Introduction To The New Testament</td>
<td>3 cr</td>
</tr>
<tr>
<td>313</td>
<td>Biblical Archaeology</td>
<td>3 cr</td>
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<tr>
<td>321</td>
<td>Jesus In The Gospels</td>
<td>3 cr</td>
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<tr>
<td>413</td>
<td>Theology Of The Old Testament</td>
<td>3 cr</td>
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<tr>
<td>414</td>
<td>Theology Of The New Testament</td>
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**CHRISTIAN STUDIES**

**A Christian Studies In General**

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<th>Course Code</th>
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<tbody>
<tr>
<td>140</td>
<td>Christian Understanding of Man</td>
<td>3 cr</td>
</tr>
<tr>
<td>260</td>
<td>Origins of Protestantism</td>
<td>3 cr</td>
</tr>
<tr>
<td>274</td>
<td>Church History I</td>
<td>3 cr</td>
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<tr>
<td>275</td>
<td>Church History II</td>
<td>3 cr</td>
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<tr>
<td>351</td>
<td>Sexuality, Sex, and Morality</td>
<td>3 cr</td>
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<tr>
<td>352</td>
<td>Value of Human Life and Current Ethical Problems</td>
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**B Roman Catholic Theology**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>106</td>
<td>Rational Foundations of the Catholic Faith</td>
<td>3 cr</td>
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<tr>
<td>201</td>
<td>Introduction to Theology and Theological Method</td>
<td>3 cr</td>
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<tr>
<td>202</td>
<td>Catholicism</td>
<td>3 cr</td>
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<td>220</td>
<td>The Mystery of Christ</td>
<td>3 cr</td>
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<tr>
<td>230</td>
<td>The Church</td>
<td>3 cr</td>
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<tr>
<td>242</td>
<td>Contemporary Theological Issues</td>
<td>3 cr</td>
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<tr>
<td>250</td>
<td>Moral Perspectives in Human Development</td>
<td>3 cr</td>
</tr>
<tr>
<td>256</td>
<td>God and His Meaning</td>
<td>3 cr</td>
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the origins and development of the theology of God in the Judaeo-Christian traditions, with special focus on the Catholic tradition

301 Marriage 3 cr
A personally-oriented and practical treatment of the marital union seen in its theological, psychological, and sexual aspects, as a bond of love, as a Sacrament, and as a human fulfillment

330 The Theology of Evangelization 3 cr
A study of the missionary aspect of the Church, including the Church's missionary role in the liberation of all men

331 The Church in the Modern World 3 cr
In light of Vatican II, an analysis of the Church's role in the development of man today and in offering solutions to present problems of humanity

335 The Theology of the Sacraments 3 cr
A theological reflection on the sacramental nature of Christian worship. Investigation is done into man's natural need to concretize his beliefs and sentiment, with special and extended study of the Christian sacraments in Catholic tradition

442 Theological Anthropology 3 cr
A study of man in his unique dignity as image of God and as responsible for the development of the universe, in his experience of sin and alienation, in his liberation by divine grace given through his union with the Risen Christ

SELECTED RELIGIOUS STUDIES

180 The Phenomenon of Religious Experience 3 cr
The course examines mankind's universal experience of religious realities. It seeks to explore the way the divine is sensed and responded to, to discover what is common in all religious experience, and to discern differences in external response

241 Studies in Black Theology 3 cr
A study of the literature and the content of Black Theology and Religion as it has developed in America, the Caribbean and on the African continent. Emphasis will be given to American Black Theology and religious experience

245 Religion and Culture: Some Personal Dimensions 3 cr
A study of the influence of religion on the individual's experience in work, leisure, love, art, dying and death, etc.

280 World Religions 3 cr
The history, comparative theology, ritual, and contemporary influence of the world's major religions

283-284 Jewish Thought and Religion 3 cr
A survey course of Jewish Theology and Ethics as delineated in the Bible, the Talmud, and in medieval and modern Jewish thinkers

342 Religion and Social Issues 3 cr
A study of the influence of religious convictions in confronting major social issues of today's world, e.g., population growth, famine, ecology, liberation and revolution, media of communications, etc.

343 Religious Impact of Secular Thinkers 3 cr
A study of the effect modern writers (e.g., Herbert Marcuse, Marshall McLuhan, Hugh Hefner, Alvin Toffler, etc.) have had on the religious consciousness and behavior of today

345 Women in Religion 3 cr
The role and position of women in Hinduism, Islam, Judaism, and Christianity

372 Religious Themes in Literature 3 cr
An exploration of the relationship between the imagination and the intellect, the artistic and the scientific in the literary expression of fundamental theological concepts. The course examines significant literary works—past and present, English and continental—in the relationship of Western man as they explicitly or implicitly express man in his relationship to himself, other men, and God

373 Religion in America 3 cr
Analysis of the role of religion in the discovery, colonization, constitutional development, immigration trends, and growth of the American Republic

481 Islam 3 cr
A study of the origin and the historical development of Islam, its theology, institutions, and practices

482 Religions of India 3 cr
An introduction to the basic concepts of Hinduism and Buddhism, their origin, development, and interrelationship

492 Reading Seminar Selected Topics 1-3 cr
An analysis of selected books and topics by students under the direction of a faculty member
School of Business and Administration
HISTORY

The School of Business and Administration was established in 1913 as the School of Accounts and Finance. The rapid growth of the School necessitated a constant broadening of the curriculum until it covered all business subjects of fundamental importance. In 1931, it was designated the School of Business Administration, and with this change, definitely became a professional school of business administration. In 1971, the name was changed to the present designation to indicate broader preparation for activity in organizations of all types.

PHILOSOPHY AND OBJECTIVES

In accord with the educational philosophy and objectives of the University, the School of Business and Administration aims to assist the student in his development of the natural and supernatural virtues. The general aim is to provide through the media of instruction and related collegiate activity the facilitation of purposeful character, intellectual accomplishment, emotional and social maturity, and professional efficiency.

The School of Business and Administration has the professional responsibility of developing in the student such knowledge of business principles, procedures, and problems as will enable him to become a self-sustaining member of the business community, aware of his social and public responsibilities and dedicated to the enrichment of the resources for worthy living. It seeks to produce graduates who, upon entering their chosen careers, will be effectively prepared to discharge their obligations to God, to their community, and to themselves as intellectual and moral beings. The School attains this objective by guiding the student through a cultural core program, through a business core program, through an elective area of advanced business subjects chosen on the basis of professional interests, through co-curricular and extra-curricular activities, and through established personnel services.

As a division of the University, the School of Business and Administration is obviously dedicated to promoting those University aims and objectives contained in the general statement.

The professional objective of the School of Business and Administration is to produce graduates who have acquired and developed:

1. An appreciation of the importance of initiative and who consequently are willing to assume responsibility, work efficiently and harmoniously with others, and adjust to changing circumstances.
2. A respect for logical thinking and who strive energetically, therefore, to develop the capacities for analytical reasoning through the vigorous and orderly application of ethical and technical principles to problem solving.

3. An awareness of the important role of quantitative measurements in today's business and who have become skilled in the interpretation of mathematical, accounting and statistical data.
4. Sufficient knowledge in a professional area so that they can assume positions of responsibility with a background of learning-method and learning-impulse that will enable them to progress rapidly.

DEGREE

The School of Business and Administration grants the degree of Bachelor of Science in Business Administration. This degree may be awarded to those who satisfy the entrance requirements and complete successfully the School's degree program.

BUREAU OF RESEARCH AND COMMUNITY SERVICES

Activity complementing direct instruction takes place in four ancillary units grouped under the Bureau of Research and Community Services. All function to provide students and faculty with an opportunity for professional development as well as to provide services to the University and the community at large.

BUREAU OF RESEARCH

The Research Bureau carries out an independent research program, and cooperates with divisions of the School in facilitating the research of individual faculty members.

Through the University Press, the Bureau issues monographs and other publications. From time to time contract research is undertaken for business, community, and governmental agencies, insofar as this may fall within its academic aims of discovery and dissemination of knowledge.

The Bureau is a member of the Association for University Business and Economic Research, and maintains an interchange of publications with similar organizations in other universities throughout the country.

CENTER FOR ADMINISTRATION OF LEGAL SYSTEMS

The Center serves as the focal point for research activity in the administration of law. Its approach encompasses the outlook and makes use of the investigative techniques of the physical scientist, the educator, the lawyer, the social scientist, the behavioral scientist, and the administrator. Present research activities include studies of the interactions of law and psychology, the administration and management of the courts, educational programs in fundamentals of the law for youth.

The Center also serves as the coordinating agency for education and training programs of a non-credit nature for persons currently employed within the legal system. Such programs are tailored to meet the needs of specific groups and agencies. The objectives, content, time, and length of all programs are cooperatively determined with the agency involved. The Center calls upon professionally trained...
practitioners from the local community as well as full-time faculty to instruct in these programs.

**CENTER FOR ECONOMIC EDUCATION**

The Center is charged with the responsibility of initiating and promoting economic education in the society at large. More specifically it develops and coordinates economic education within the Western Pennsylvania and Tri-State area where the primary thrust of the Center focuses on upgrading economic literacy and teaching competency in the school systems of the area.

**DIVISION OF CONTINUING EDUCATION**

The Division conducts management training programs for industry ranging from the foreman level up through executive personnel, touching every phase of management to make the individual a better rounded person in meeting the current demands of business.

Also administered are non-credit programs which consist of courses in business and administration or special areas. These courses are offered for the continuing education of adults in the community.

**STUDENT ORGANIZATIONS**

Several organizations, limited to students in the School of Business and Administration, exist for the promotion of the scholarly and professional interests of members.

*The Zeta Chapter of Beta Gamma Sigma*, national honorary fraternity for accredited schools of the American Assembly of Collegiate Schools of Business, is established at Duquesne University. Membership in this honorary fraternity is limited to juniors in the highest five percent of their class and to seniors in the highest ten percent of their class.

*The Beta Alpha Phi Fraternity* is the honorary scholarship society of the school.

*Phi Chi Theta* is a national professional commerce sorority.

*The Student Accounting Association* provides for the interests of those who intend to become accountants.

*American Marketing Association*, the student chapter affords membership to students whose major interests include salesmanship, marketing advertising, transportation, or foreign trade. A selected group of seniors is permitted under faculty supervision, to participate in the meetings of the Sales Executives Club of Pittsburgh and the senior chapter of the A M A.

*Omicron Delta Epsilon*, a national honor society in Economics, is open to all students specializing in studies in Economics. The society is open to those having an overall academic average of B in their Economics courses.

*Delta Sigma Pi*, a national professional business fraternity, is represented by Theta Rho chapter.

**DIVISIONS AND PROGRAMS**

The School of Business and Administration is comprised of three Divisions: Quantitative Science, Behavioral Science, and Economic Science.

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**SCHOOL OF BUSINESS & ADMINISTRATION**

A student entering the School of Business and Administration is expected to state to his advisor his career objective along with his academic area of concentration, the latter of which can be several of the junior and senior courses indicated in the three Divisions. The student's proposed curriculum must, of course, include the University requirements and Business Administration Core requirements as indicated in the illustrations set forth in this catalog. Consistent with his stated career objective and with the concurrence of his advisor, the student is free to select any junior and senior courses from the School of Business and Administration curriculum to complete the 15 hours required for graduation. The single exception to this is the student who selects Accounting as his area of concentration. The regulations for certification in Accounting make this program very rigid; this is dealt with in the paragraphs following the Sample Program.

The faculty advisor in the School of Business and Administration plays an extremely important role in the academic guidance of each student. Because of this, each student is permitted to select his own advisor based on personal knowledge and available biographical sketches.

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**FOUR-YEAR SAMPLE PROGRAM**

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**FRESHMAN YEAR**

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**SOPHOMORE YEAR**

**SENIOR YEAR**

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Students concentrating in accounting should take Accounting 101, 102, 201, 202, 305, 309-310, 411, 451, 461, and 463. In addition to Legal Process 251, they must take at least one of these courses in Law 353, 354, 355. It is recommended that the student achieve an overall B average in Accounting 101-102 before attempting Accounting 201 and a minimum grade of C in both 201 and 202 before attempting the 300 and 400 level courses.

Students enrolled in the accounting program are encouraged to take the AICPA Level II Achievement Test. This will normally be taken in the Spring Semester during which Accounting 310 will be completed.

Three credits in theology are required for Catholic students. Others may take theology or may substitute three credits in the Departments of History, Philosophy, Political Science, Psychology, or Sociology.

COURSE DESCRIPTIONS

Division of Quantitative Science

Chairman Robert G. Borman, M.B.A., C.P.A.

ANALYTIC METHODS CURRICULUM

All students in the undergraduate School of Business and Administration are required to take a three-year, 18-credit sequence in Analytic Methods, which is concerned with the application of mathematics, statistics, and electronic data processing to the analysis of business and economic problems. Two programs are available: the regular program and an honors program.

The objective of the regular program is to increase the student's knowledge and understanding of the uses of mathematics, statistics, and computers as aids in decision-making. The student is required to do considerable problem-solving. The regular program is intended for the majority of students who will not be specialists in management science or operations research.

The honors program emphasizes a mathematical approach and is intended for students who have a stronger interest in and aptitude for mathematics. This program will cover essentially the same topics as the regular program, but in more depth and from a more theoretical viewpoint. The honors program provides the student with adequate preparation for advanced study in management science and operations research.

101, 102 Introductory Analytic Methods 3 cr.

Selected topics from algebra, analytic geometry, and calculus are covered. Among the topics are linear, parabolic, hyperbolic, exponential, and logarithmic functions, fitting functions to empirical data, instantaneous rate of change and the difference quotient, integral calculus and the area under a curve, arithmetic and geometric progressions, compound interest, and an introduction to computers and computer programming. Problem work is related to a business and economics setting. Must be taken in sequence 101, 102.

201, 202 Intermediate Analytic Methods 3 cr.

This sequence includes the basic ideas of descriptive and inductive statistics. Among the topics covered are frequency distributions, measures of central tendency, measures of dispersion, sets and set operations, elementary probability theory, probability distributions, sampling distributions, statistical estimation, testing of hypotheses, time-series analysis, simple linear regression and correlation. Prerequisites Analytic Methods 101, 102.

301, 302 Advanced Analytic Methods 3 cr.

This sequence stresses the model-building approach in the analysis of business and economic problems and introduces a number of operations research techniques. Topics include matrices and vectors, linear programming, transportation problems, multiple regression and correlation, statistical decision theory, Monte Carlo methods and simulation, and optimization models using numerical methods. Prerequisites Analytic Methods 201, 202, and all 200-level required business courses.

401 Operations Research 3 cr.

Advanced treatment and analysis of operations research techniques and methodologies, including linear programming, Monte Carlo simulation, Markov processes, dynamic programming, queuing problems, scheduling, and inventory control. Emphasis is placed on the use of operational research techniques to solve problems in business and the social sciences. Prerequisites Analytic Methods 204.

FINANCE CURRICULUM

204 Business Finance 3 cr.

The aim is to combine the descriptive study of external sources and processes of financing with the tools of financial analysis and to apply them to financial decision making. Primary attention is given to short- and long-term financing and to funds-flow approaches with secondary emphasis placed upon securities markets, financial projections, and financial-structure planning. Prerequisites Acct 101, 102.

308 Financial Markets 3 cr.

A broad introduction to the markets for lending and borrowing of capital, both short- and long-term, together with discussion of the institutions serving as sources, intermediaries, and users of funds. Emphasis is placed on the interrelationships among financial institutions participating in these markets, and among the various markets. Prerequisite Fin 204.

310 Investment Analysis 3 cr.

This course is a case method approach to investment problems of individuals of various financial institutions. It provides a comprehensive grounding in all types of investment analysis, including interpretation of statements, construction of pro forma reports, preparation and use of industry norms, and cash and capital budgets. Emphasis is placed upon the analysis of financial statements and the understanding and interpretation of financial data. Prerequisites Fin 204, Securities Analysis 417 or consent of instructor.
311 Money and Banking 3 cr
The primary aim of this course is to give students an understanding of the influence of money and the activities of monetary institutions on price levels, levels of income and employment, and the rate of economic growth. The first half of the course is devoted largely to study of the evolutionary development of money and the banking system and of the structure and operations of the present United States monetary system. Although attention is concentrated on the domestic operations and policies of the commercial banking system, the significant role of other private and governmental financial institutions is emphasized and occasion is taken throughout to illustrate international monetary relationships. Prerequisites: Econ 211, 212.

315 Risk Management 3 cr
A study of the broad spectrum of risk exposures in business enterprise, with attention to the need for identifying these in terms of nature and magnitude. Methods of alleviation, avoidance, and insurance are studied. Emphasis is placed not only on the traditional forms of insurable hazards, but also upon implicit risks such as those of loss in market value of inventories, use value of plant and equipment, and liquidation value of receivables.

321 Corporate Financial Problems 3 cr
A study of the financial problems unique to corporations, using the case method. Topics will center around the various types of securities and their issuance, conversion and repayment, direct placements, mergers, acquisitions, spin-offs, and sales of assets, determination of policy with respect to surplus, reserves, dividends, pension funds, and executive compensation, effects of taxation, and cash management, capital budgeting, and financial-structure planning. Prerequisites: Fin 308, 310.

415 Financial Commercial Transactions 3 cr
A study of the financial aspects of various types of business transactions such as sales, loans, leases, consignments, shipments, and storage, also of the financing of the assets involved such as goods receivables, plant, equipment, and intangibles. Particular attention is given to loans made by commercial banks, factors, and finance companies from the point of view of both lender and borrower. Use is made of case problems in the field of working-capital management. Prerequisite: Fin 204.

416 Credit Management 3 cr
Consideration of the problems involved in extension of short-term and installment commercial credit by financial institutions, manufacturers, and wholesalers. Case problems are used exclusively in developing principles applicable in establishing terms of sale, approving credit limits, handling difficult collections, working out of insolvent situations, and evaluation of data found in mercantile-agency reports and similar sources. Prerequisites: Fin 310, 415.

417 Security Analysis 3 cr
An intensive study of analytic techniques applicable in selection of securities of corporations in various industries, and of municipal and other governmental units, for purposes of investment. Emphasis is divided between measurement of intrinsic values and of market conditions. Prerequisites: Fin 308, 310.

420 Life Insurance 2 cr
A study is made of the risks of death and longevity as they occur in personal and business situations. Analyses are made of various forms of life-insurance and annuity contracts and their uses, with emphasis upon their functions as instruments of estate creation and administration. Uses of insurance in connection with partners and key men, and in connection with bank loans, are explored. Attention also is given to accident and health coverages, group plans, pensions and regulation of the industry.

423 Property and Liability Insurance 2 cr
A study of business and personal applications of casualty, fire, and liability coverages in the form of both insurance and bonding, including the fields of workmen's compensation, landlords' and tenants' liabilities, burglary, robbery, and theft, automobile, credit and title insurance, fire and related lines, fidelity and surety bonding, and relevant aspects of inland and ocean marine.

425 Case Problems in Finance 2 cr
An integrated study of financial topics through the medium of case problems. Special emphasis is given to capital-expenditure policies, long- and short-term financing, credit control, consolidations and mergers, and analysis of financial statements. Senators only.

428 Real Estate Financing 3 cr
A study of the problems involved in financing residential, commercial, and industrial real estate from the points of view of both owner and lender. Methods of financing covered include use of individual and corporate equity, loans secured by mortgages, land contracts, sale-and-leaseback arrangements, and cooperatives, syndicates, and real-estate trusts. Attention is given to procedures for originating, securitizing, and foreclosing loans and mortgage arrangements by principals, agents, and mortgage bankers. Case problems are used to illustrate determination and implementation of policies by individuals and financial institutions for making investments in the loans against real property, and also to illustrate the effects upon corporate working capital of ownership of real estate. Special topics treated include tax considerations, construction and improvement loans, financing of shopping centers and residential developments, and the effects of governmental subsidies and assistance programs. Prerequisite: Fin 204.

450 Seminar in Finance 3 cr
Topical emphasis will vary depending upon current developments and the needs and interests of students. Required of finance majors.

ACCOUNTING CURRICULUM

CPA REQUIREMENTS

Students who desire to become certified public accountants in Pennsylvania and who have been graduated from a four-year program in a college approved by the State Board of Education may sit for the CPA examinations. The degree program of the University is so approved.

Graduates may sit for the CPA examination in other states, among them Colorado, New Jersey, and New York.

101, 102 Introductory Accounting 3 cr each
An introduction to the language of accounting, basic accounting concepts and brief exposure to recording financial information. An extensive study is made of accounting information for management decisions. Laboratory attendance to two hours per week is required.
This course is primarily concerned with an investigation and analysis of the accounting problems and practices of the corporation, with detailed study of the component elements of the balance sheet and income statement. Basic topics are accepted and alternative methods in the accounting cycle, financial statements, their form, content, and use, and accounting problems of the corporation, detailed analysis of the balance sheet accounts, determination of net income, statement of source and uses of working capital. Prerequisites: Acct 101-102.

Managerial Accounting 3 cr
A study of the technique involved in the gathering, recording, and interpretation of accounting and statistical data used in the solution of internal problems of management. Some of the topics covered are construction, analysis, and interpretation of reports, establishment of operating and financial standards, measurement of managerial performance, use of budgets in managerial control, use of cost data and interpretation of cost reports use of quantitative data in the formulation of policies consideration of various aspects of Federal, State, and local taxes and their effect on managerial decisions. Prerequisites: Acct 101-102.

Advanced Accounting 3 cr
This course applies fundamental theory to a number of important activities in business. Activities studied are partnerships, special sales procedures, consolidations and fiduciaries. Prerequisites: Acct 201-202.

Cost Accounting 4 cr each
Basic cost accounting procedures are discussed from the following viewpoints: cost principles, cost determination, cost control, cost analysis. Topics treated include cost terminology, planning and control techniques, and development and application of overhead rates. Cost behavior patterns are studied in conjunction with development and application of overhead rates. Standard costing, job order costing, process costing, and joint products, by-product costing are treated in detail. The subject of budgeting is dealt with extensively with emphasis on capital budgeting. Methods of judging managerial efficiency, inventory control, and management control systems are also stressed. Prerequisites: Acct 201, 202 or 203.

Auditing 3 cr
Standards and procedures employed by auditors in the examination of financial statements for the purpose of rendering an opinion are studied and evaluated. Emphasis is placed on theory and philosophy of auditing however case problems are used to demonstrate the application of the principles studied. Prerequisites: Acct 201, 202 or 203.

Introductory Income Tax Accounting 3 cr
This course is a study of basic tax and procedure affecting primarily individuals and to a lesser extent partnerships and corporations. Principal topics: returns, rates, exemptions, income deductions, sales and exchange of assets and credits. Emphasis is placed on problems to demonstrate the application of the principles studied and use of official forms for demonstration purposes. Prerequisites: Acct 202 or 203.

Seminar in Accounting 1 cr
This course is designed to develop a student's ability in technical expression, deepen his understanding of accounting theory, and acquaint him with contemporary accounting problems and literature. Students are made acquainted with the philosophy and methodology of research and required to prepare a research paper. Prerequisite: Acct 305.

Division of Behavioral Science
Chairman: Serge Grosset, Ph.D.

LAW ADMINISTRATION CURRICULUM
This curriculum is designed to prepare professionals to aid in the solutions of one of society's most critical problems, that of the administration of legal systems. Future executives in court management, correctional institutions, and control systems (law enforcement) receive a broad interdisciplinary educational experience with the basic core coursework in the School of Business and Administration.

Students in this program should take these courses:

453 Administration of Legal Systems
311 Behavioral Science
311 Personnel Management
411 Public Administration and either
309 Administrative Organization, or
463 Business Information Systems

Courses in the Law Administration sequence are supplemented by these courses which the student takes as liberal arts electives:

478 Youth and Drug Abuse
002 Drug Abuse
328 Psychology of Personality
352 Abnormal Psychology I
353 Abnormal Psychology II
334 Delinquency
335 Criminology
336 Social Control
337 Corrections

Other coursework may be appropriate to fit a student's career objective. Counselors and school officers should be consulted.

PRE-LEGAL PROGRAM
The curriculum of the School of Business and Administration meets the requirements for registration for general purpose of the State Board of Law Examiners in Pennsylvania, and of the State Education Department of New York. Coursework in the various areas of the School of Business and Administration provides good preparation for the professional study of law.
251 Legal Process 3 cr
An introductory course exploring the nature of law, its sources, its relation to society and government, relation of the judicial to the executive and legislative functions, law as an instrument of social change and control, understanding of the legal rights and duties of persons. Acquaintance with areas of legal concern to the administrator such as labor, environmental controls, products liability, anti-trust concerns such as pricing and mergers.

353 Contracts 3 cr
Study of the law pertaining to the formation of contracts, the legal requisites of an enforceable agreement, the transfer of contractual rights and duties, the discharge of contracts, the relationship between principal and agent. Prerequisite: 251 Legal Process.

354 Commercial Transactions 3 cr
Study of the provisions of the Uniform Commercial Code with reference to the nature and legality of sales of goods, the formality of the sales contract, transfer of title to goods, warranties, nature and kinds of commercial paper, requisites and meaning of negotiability, methods of transfer. Prerequisite: 251 Legal Process.

355 Business Organizations 3 cr
Consideration of the nature, creation, and dissolution of the proprietorship, various types of partnerships, other unincorporated organizations, and the corporation. Duties, rights, remedies, and liabilities of owners and managers are studied. Prerequisite: 251 Legal Process.

453 Administration of Legal Systems 3 cr
Study of the legal system and the procedures by which legal rights and duties are effectuated and enforced, current problems and issues related to the system in the attainment of its objectives, administrative problems in the legal system. Prerequisite: 251 Legal Process.

MANAGEMENT CURRICULUM

201 Principles of Management 3 cr
This course represents an initial introduction to the essential principles of management centered around the concept of management being a basic process which is distinct and applicable to all enterprises. Planning, organizing, actuating, and controlling comprise the fundamental functions of management, making up the management process. These functions constitute the framework around which this course is built. Emphasis is given to planning which is rapidly growing in managerial importance. Decision making, managerial creativity and the art of management are thoroughly developed.

301 Behavioral Science 3 cr
This course is an introduction to the scientific study of behavior. It incorporates concepts from the disciplines of anthropology, psychology, sociology, economics, law, and political science, as well as from the newer fields of organization theory, game theory, and decision theory. This interdisciplinary approach to behavior provides an integrative framework for transfer to any organizational setting. Prerequisite: 201 Principles of Management.

308 Operations Management 3 cr
A follow-up course to Principles of Management in which all important phases of management are developed. Topics such as purchasing, inventory control, motion and time study, plant layout, pricing, etc., are covered. An intermediate course to be used as a basis for further specialized treatment of management areas in the advanced courses. Prerequisites: 201 Principles of Management, 202 Advanced Analytic Methods.

309 Administrative Organization 3 cr
A course presenting organizational concepts as they relate to the operation of an enterprise. Line, staff, and functional relationships are thoroughly developed. Both formal and informal relationships are considered. As they are developed and exist within a firm. Authority, responsibility, delegation, centralization and decentralization of control and other related organizational problems are considered. Prerequisite: 201 Principles of Management.

311 Personnel Management 3 cr
A course presenting techniques of manpower management. Involves study of recruiting and screening techniques, training programs, merit rating, wage payment plans, safety, disciplinary programming, etc. Current practice is presented in the form of case material. Prerequisite: 201 Principles of Management.

314 Industrial Relations 3 cr
A course developed to present to the student historical knowledge of the labor movement, current status and importance in industry, and the legal status of labor governing the actions of management in a myriad of ways. Presents the role of labor, management and government in collective bargaining and current industrial relations policies and practices. Prerequisite: 201 Principles of Management.

403 Human Relations in Administration 3 cr
An advanced course treating of the human aspect as it is encountered in the industrial organization. Involves an analysis of behavioral patterns of individuals as individuals and as members of work groups. Deals with motivation, goals, needs, frustrations, etc., as they relate to the industrial situation. Prerequisite: 201 Principles of Management.

409 Executive Action Simulation 3 cr
A course incorporating the Games Theory Approach. The teaching techniques of Case Method and Role Playing are combined in a simulated business environment, in which the students make the decisions affecting the conduct of a business. Participants are divided into teams with key corporate duties being assigned, and several teams compete against each other in an attempt to operate the "firm" on the optimum profitable basis. Required of all seniors. Prerequisites: 201 Principles of Management and Senior Standing.

438 Wage and Salary Administration 3 cr
An advanced course involving a study of the major wage administrative problems. Wage evaluation programs are covered with emphasis placed on the point system and the factor comparison method. A study of wage payment plans and wage incentives comprises the second phase of the course. Merit rating and other areas related to the wage problem are also included. Prerequisite: 201 Principles of Management.

444 Collective Bargaining 3 cr
Study of the relation of federal and state legislature to collective bargaining, analysis of substantive issues and administrative aspects of collective agreements, specific provisions including adjustment of grievances, conciliation, mediation and arbitration, collective bargaining and public policy. Prerequisite: 201 Principles of Management.

411 Public Administration 3 cr
This course introduces the student to the content of public management and to the work of the public manager at federal, state, and local government levels. It also compares and contrasts public and private management and links management theory and practice. Lecture-discussions and participative methods are employed.
315 Marketing Problems 3 cr
This course employs the case method illustrative of typical marketing problems such as
merchandising, advertising, selection of channels of distribution, and development of new
products. These problems are analyzed as they affect different middlemen in the
marketing structure including manufacturers, wholesalers, retailers, jobbers, brokers,
agents, and similar functionaries. Theories of marketing are subjected to the test of prac-
tical examples so that the student may develop a more realistic grasp of the principles in-
volved and the value of the practitioner’s judgments. Current marketing developments are
studied. Prerequisite: Econ 204.

322 Sales Administration 3 cr
An introduction to the fundamentals of salesmanship and the problems confronted by the
sales manager. Topics include such areas as production planning, pricing, packaging,
quantitative and qualitative market analysis, and specific sales management functions of
selection, training, equipping, compensating, supervising, and controlling salesmen.
Prerequisite: Econ 204.

406 International Business 3 cr
A study of the techniques of international trade. Emphasis is given to the contract,
overseas shipment, customs procedure in this country and abroad, marine insurance,
packing for overseas trade, financing, exports and import shipments, foreign exchange,
carriage of goods by air. Prerequisites: Econ 204, Econ 211-212.

411 Marketing Research 3 cr
This course examines the means and methods business management uses to get the
necessary information for decision making involving what to produce, how much to
produce, and how to distribute goods that are produced. The various types of marketing
research—consumer research, motivational research, market analysis, sales analysis, and
sales forecasting, product research, and advertising research—are studied in some detail.

412 Transportation 3 cr
A comprehensive analysis of the historical evolution, operation and economic develop-
ment of the railroads, motor carriers, water carriers and air carriers of the United States.
The Interstate Commerce Act, with its amendments, and the public regulation, state and
federal of the various carriers will be emphasized. Prerequisites: Econ 204, Econ 211,
212.

414 Traffic Management 3 cr
This course deals with the organization and functioning of traffic departments of in-
dustrial concerns. Topics treated are organization of shipping departments, car records
for the control of private car lines, claims, routing, service and rating departments,
regulations governing packing, shipping and sales, shippers’ relations with carriers, freight
and express tariffs, delays in transit, receipt and delivery of property. Intensive work in the
rate structures of the United States will be an important item. Prerequisites: Econ 211,
212.

Division of Economic Science

101 Elements of Economics 3 cr
Economics 101 is an introductory course in economics intended to afford an understan-
ding of how our economic system works, of the forces which affect the level, composition,
and distribution of the output of the economy, and of the issues behind current economic
problems. The course content will define concepts, provide background materials, and
develop economic ideas necessary to an understanding of the policy issues constantly
before a complex dynamic economy.

102 Introduction to Micro Economics 3 cr
The emphasis is on the application of macro economic principles. A series of basic
economic problems and issues will be examined in terms of an understanding of the basic
problem. How society can achieve and maintain a full employment economy with
reasonable economic stability.

213 Introduction to Micro Economics 3 cr
The primary aim of this course is to enhance and deepen the student’s understanding of the
market mechanism and how this mechanism responds to various governmental policies.
More specifically, this course should enable the student to apply micro economic reason-
ing to current public issues, and use benefit-cost methodology in analyzing government
expenditures.

The above set of courses has been designed for non-business students. However, taking one
course does not obligate the student to take any additional courses in the sequence. The com-
pletion of the above sequence of courses will enable the student to take upper division courses
offered by the Economics Department. Thus the sequence 101, 102 and 213 is a substitute for
the 211, 212 sequence.

105 Economics of Discrimination 3 cr
The main interest of this course is the diagnosis of the nature and causes of the problem of
social, economic and educational underutilization and underdevelopment of Black
America. The course aims at the historic delineation of the factors responsible for this
situation and the programs current and possible that may be utilized to improve the situa-
tion.
128 DIVISION OF ECONOMIC SCIENCE

211 Principles of Economics I 3 cr
The first course in economics for the student who plans to major or minor in economics. The course seeks to acquaint the student with concepts and the logical basis to economic reasoning. Emphasis is placed on understanding the behavior of households and firms under competitive and imperfectly competitive market conditions.

212 Principles of Economics II 3 cr
This course is primarily concerned with aggregative economic relationships. The theory of the determination of national income is developed and attention is given to the construction of national income accounts. Attention is given to monetary and fiscal policy and their implications. Prerequisite: Econ 211.

301 National Income Analysis 3 cr
A conceptual analysis of national income theory, its tools, its basic principles and its social and economic significance. The course treats the macroeconomic method of economic analysis. It is concerned with explaining the development and nature of national income aggregates. The basic principles of national income theory are developed and explained in order to place into focus the operations of the American economy and the many problems relating to it. Prerequisites: Econ 211, 212 or 101, 102, 213.

302 Price and Production Economics 3 cr
An intensive study of the theory of demand, production and distribution. In addition, recent developments in the theory of imperfect competition and oligopoly are carefully examined. Prerequisites: Econ 211, 212 or 101, 102, 213.

312 Public Finance 3 cr
A study of the organization and management of government revenues and expenditures with emphasis on American practices and policies of the various levels of government. Welfare economics and benefit cost analysis receive heavy consideration. Prerequisite: 301 or 302.

402 Comparative Economic Systems 3 cr
A comparative study of capitalism, socialism, communism and other economic systems with emphasis on analysis rather than mere description of the economies of various countries. Prerequisites: Econ 211, 212 or 101, 102, 213.

403 Urban Economics 3 cr
Urban economics is intended to afford an understanding of how the urban economy works of the forces which affect the level, composition, and distribution of the output of the urban economy, and of the economic issues behind current urban problems. The course analyzes the processes, stages and determinants of urban economic growth and development. Urban economics focuses on the problems and policy in the urban economy: income inequality, manpower, local public finance, housing and land use patterns, and transportation. A particular emphasis of the course is to provide the student with the theoretical tools and show their application to the dynamic, complex urban economy. Prerequisites: Econ 211, 212 or 101, 102, 213.

405 International Economics 3 cr
This course is an introduction to international trade theory and the principles of international monetary economies as well as foreign trade policies. Topics to be discussed include the classical and neoclassical theory of comparative advantage, foreign exchange markets and balance of payments, adjustment mechanisms, analysis of the consequences of trade regulation and international liquidity problems. Prerequisites: Econ 211, 212 or 101, 102, 213.

406 International Business 3 cr
The course is offered by the Department of Commerce.

413 Labor Economics 3 cr
Analysis of the principles for wage and employment determination in contemporary American economy under non-union conditions as well as under collective bargaining. The institutional development underlying labor supply and demand is studied with direct emphasis on its impact on employment and production, on the general wage-level and on wage differentials, on the distribution of national income and on general social welfare. The course also includes a comparative study of problems in labor economics in American and other democratic countries. Prerequisites: Econ 211, 212 or 101, 102, 213.

417 History of Economic Thought 3 cr
A brief review of classical tradition emphasizing Smith, Ricardo, and Mill, and Marxian socialism showing their influence upon the evolution of Twentieth Century economic theory. Emphasis is placed primarily upon the writings of Marshall, Schumpeter, and Keynes, applying their theories to the problems of contemporary economic policy. Special emphasis is given to economic growth and development and the essentials of welfare economics in today's society. Prerequisites: Econ 301, 302.

418 Modern Economic Theory 3 cr
A seminar-like discussion of the state of the nation's economy and its current problems. Prerequisites: Econ 301, 302.

419 Business Cycles and Forecasting 3 cr
This course is designed to study the process of economic change. Analyses of Seasonal, Cyclical, and Secular movements will be undertaken. Theoretical and empirical aspects will be covered. Forecasting techniques will also be studied. Prerequisite: Econ 301.

420 Business and Public Policy 3 cr
A study of the regulatory techniques used by government to influence and modify business behavior. This course also includes an analysis of market structure, conduct and performance considerations pertaining to the firm and the industry. Emphasis is given to the anti-trust laws and special regulatory problems. Prerequisites: Econ 211, 212 or 101, 102, 213.

421 Current Economic Issues 3 cr
A seminar-like discussion of the state of the nation's economy and its current problems on the basis of critical examination of professional periodical articles and economic reports by official and private sources (such as the President's Council of Economic Advisers). The purpose of the course is to begin developing in the graduating senior the ability to coor-
dinate and apply the analytical knowledge he has acquired during his undergraduate study of economics and related fields of social science and business administration. Prerequisites: Econ 211, 212 or 101, 102, 213

422 Monetary Theory and Policy 3 cr
This course presents the chief theoretical contributions on money. The policy implications of these theories, past and present, will be emphasized. Concentration will center upon policy proposals and controversy in the monetary field since World War II. The theories and contributions of Wicksell, Fisher, J. M. Clark, Keynes, Robertson and Modigliani, among others, are reviewed. The role of interest rate is reviewed along with wage-price controversies, international gold flows, and the relationships between fiscal and monetary policies. Prerequisites: Econ 211, 212, 311 or 101, 102, 213

423 Theory of Economic Development 3 cr
The course is designed to acquaint students with the area of economic development. The subject matter of this course conveniently divides itself into five major categories: the nature of development and problems of measurement, theories of development, factors and forces affecting economic growth, different approaches to a higher standard of living, and problems of domestic and international stability. Approach to this course encompasses detailed study as well as a strong emphasis on theoretical and critical analysis. Prerequisite: Econ 301

424 Problems, Policies and Case Studies in Economic Development 3 cr
This course is a continuation of the first semester course in economic development. An attempt is made in this semester to apply the tools, techniques, and theories of development to selected regions and countries of the world. The course is divided into four broad areas—the nature and problems of the case study method, the nature of the socio-economic structure and its impact on development, problems of measurement and of comparison, and the changing role of the basic factors of production. Considerable time will be devoted to a critical study of the actual policy measures adopted for development by selected countries. Prerequisite: Econ 423

451 Seminar in Economics 3 cr
The purpose of the seminar is to provide a vehicle for the advanced student to investigate separate subject areas in the field of Economic Theory. The intention is to provide a sound basis for further study at the graduate level. Seminar procedure will stress written and oral reports. Prerequisites: Econ 301, 302, plus permission of the instructor.
HISTORY

Prior to 1929, teacher preparation courses were offered through a department of the College of Liberal Arts and Sciences, in that year the newly-organized School of Education granted its first degrees in programs of secondary education. The following programs have since been approved for certification by the Department of Education of the Commonwealth of Pennsylvania: music education, 1930; graduate education, 1936; elementary education, 1937; guidance, 1952; school administration and supervision, 1952; library science, 1956; special education (mentally retarded), 1964; reading specialist and reading supervisor, 1969; school psychologist, 1969; early childhood education, 1975.

SELECTION AND ADMISSION

Candidates who express a desire to become teachers are admitted to the School of Education through the University Office of Admissions. The curriculum for the first two years (approximately 60 credits) is devoted to the broad learnings in general education and beginning course work in a major discipline or area of concentration. The School of Education includes and maintains in its enrollment only those students who give definite indications of teacher potential. Students are, therefore, expected to demonstrate developing personal and professional characteristics, attitudes, and competencies which will recommend them as worthy candidates for the teaching profession. Evaluation and approval by the faculty is based on the student's development of:

1. A well-balanced personality as evidenced through personal appearance, health and vitality, emotional maturity, verbal fluency, self-confidence, cooperation, judgment and tact, adaptability and resourcefulness, cultural appreciation, and social relationship.
2. Professional attitudes and competencies as evidenced through interest in teaching, preparation in subject matter and in teaching methods and techniques, participation in laboratory experiences, including observation and student teaching, and the demonstration of necessary abilities and skills.

CURRICULUM

GENERAL EDUCATION

The School of Education requires completion of the established core program which includes courses in the humanities, social sciences, natural and behavioral sciences and, for Catholic students, theology.

PROFESSIONAL EDUCATION

The basic professional education program introduces the student to the teaching profession through thorough study of the principles and practices of education and the learning process. Special professional education programs introduce the student to the specific teaching techniques and methods required for specific fields of concentration—elementary, secondary, special, or early childhood education.

PROFESSIONAL LABORATORY EXPERIENCES

The School has developed a broad and diversified professional laboratory experience program designed to provide opportunities for observing and working with children and youth. These include:

1. Programs in neighborhood and community centers, hospitals, recreational and youth organizations, and summer camps.
2. Planned observation in public and private school classrooms.
3. Group observation in schools and institutions dedicated primarily to the care of exceptional children.
4. Teacher-aide or tutorial service in public and private schools.
5. Student-aide service at educational television station WQED.
6. Student teaching in a public school for an entire semester.

All of these experiences are completed under professional supervision from the University and from the off-campus agency or public school.

STUDENT ORGANIZATIONS

The School of Education includes in its program opportunities for participation in student organizations related to professional education preparation. Students are encouraged to take an active part in these professional organizations, for such interest is interpreted as reflecting social and educational development. The organizations are:

Duquesne University Chapter of the Council for Exceptional Children, national student organization in Special Education.

Kappa Phi Kappa, national education fraternity.

Kappa Delta Epsilon, national education sorority.

HONOR AWARDS

These permanent awards, presented at the annual Honors Day Convocation, are open to undergraduates in the School of Education.

"Who's Who in American Colleges and Universities" certificates.

School of Education Faculty Award for General Excellence in Secondary Education.

School of Education Faculty Award for General Excellence in Elementary Education.

School of Education Faculty Award for General Excellence in Special Education.
Kappa Phi Kappa National Professional Education Fraternity Award for Outstanding Member of Beta Pi Chapter
Kappa Delta Epsilon National Professional Education Sorority Award for Outstanding Member of Alpha Kappa Chapter
Kappa Delta Epsilon National Professional Education Sorority President's Award
Lawrence A Roche Memorial Award to a Junior Student for General Excellence in the School of Education
Philip C Niehaus Memorial Award for outstanding achievement in the School of Education
Helen S Platt Memorial Award to a Senior student majoring in Special Education who is in need of financial aid
Council for Exceptional Children Award for outstanding work in the organization

TEACHER CERTIFICATION
Through completion of a degree, a student will be eligible for a Pennsylvania Instructional I (Provisional) Certificate to teach a subject or in an area for which the curriculum pursued is designed. All programs are approved by State Department of Education, and certification in Pennsylvania enables a student to meet certification requirements in various other states. Application for the certificate must be made through the Dean's Office during the semester in which the student expects to be graduated

CLASS ATTENDANCE
The School of Education faculty has determined that the following policy will be in effect for the School of Education and will be adhered to by all professors who teach undergraduate courses. It is presumed that each student in a professional course will normally attend every session. The maximum number of cuts permitted is equated in credit units, not in periods the class meets, in other words, three cuts for a three credit course

DEGREE
Curriculums in Early Childhood, Elementary, Secondary, and Special Education lead to the degree of Bachelor of Science in Education

PROGRAMS

EARLY CHILDHOOD EDUCATION
The program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for

1. The Instructional I (Provisional) Certificate to teach early childhood education classes in the schools of Pennsylvania for a period of three years
2. Admission to graduate programs in education

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120

<table>
<thead>
<tr>
<th>General Education</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A English Area</td>
<td>15</td>
</tr>
<tr>
<td>1 English Composition</td>
<td>6</td>
</tr>
<tr>
<td>2 English Elective</td>
<td></td>
</tr>
<tr>
<td>3 Communications Area (Speech, Journalism, English)</td>
<td>6</td>
</tr>
<tr>
<td>B Mathematics and/or Science</td>
<td>12</td>
</tr>
<tr>
<td>C Social Science (Anthropology, Economics, Geography, History, Political Science, Sociology)</td>
<td>12</td>
</tr>
<tr>
<td>D Philosophy and/or Theology</td>
<td>9</td>
</tr>
<tr>
<td>E Psychology (Introduction to Psychology is a prerequisite to all others)</td>
<td>6</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Professional Education</th>
<th>Credits</th>
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<tbody>
<tr>
<td>All courses, for a total of 39 credits, are required</td>
<td></td>
</tr>
<tr>
<td>Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Child Development I</td>
<td>3</td>
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<tr>
<td>Child Development II</td>
<td>3</td>
</tr>
<tr>
<td>Early Childhood Education I</td>
<td>3</td>
</tr>
<tr>
<td>Early Childhood Education II</td>
<td>3</td>
</tr>
<tr>
<td>Curriculum Development I</td>
<td>3</td>
</tr>
<tr>
<td>Curriculum Development II</td>
<td>3</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Education Electives</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Select from below</td>
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<tr>
<td>Field Observations</td>
<td>1-5</td>
</tr>
<tr>
<td>Introduction to Art</td>
<td>3</td>
</tr>
<tr>
<td>Teaching Elementary Language</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Social Studies</td>
<td>3</td>
</tr>
<tr>
<td>Teaching Elementary Mathematics and Science</td>
<td>3</td>
</tr>
<tr>
<td>Children's Literature</td>
<td>3</td>
</tr>
<tr>
<td>Music for the Classroom</td>
<td>2</td>
</tr>
<tr>
<td>Teacher Problems in Speech</td>
<td>3</td>
</tr>
<tr>
<td>Reading in the Elementary School</td>
<td>3</td>
</tr>
<tr>
<td>Problems in Teaching Reading</td>
<td>3</td>
</tr>
<tr>
<td>Learning Resources</td>
<td>3</td>
</tr>
<tr>
<td>Human Development</td>
<td>3</td>
</tr>
<tr>
<td>Eurythmics</td>
<td>2-4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Electives</th>
<th>Credits</th>
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<tbody>
<tr>
<td>18</td>
<td></td>
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</tbody>
</table>

ELEMENTARY EDUCATION
This program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for

1. The Instructional I (Provisional) Certificate to teach in the elementary schools of Pennsylvania for a period of three years
2. Admission to graduate programs in education

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120

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<tr>
<td>E Psychology (Introduction to Psychology is a prerequisite to all others)</td>
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<tr>
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<tbody>
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<td></td>
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</tbody>
</table>

SCHOOL OF EDUCATION

Language Development and Reading | 3 |
Research Seminar | 2 |
Planning Programs for Young Children | 2 |
Student Teaching in Early Childhood | 8 |

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120
programs lead to certification in biological science, chemistry, communication arts, English, general science, history, Latin, mathematics, modern languages (French, German, Spanish), physics, social studies (economics, history, geography, political science, sociology), and speech.

2 Admission to graduate programs in education

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120.

**General Education**

- **A English Area**
  - 1 English Composition
  - 3 English Elective

- **B Mathematics and/or Science**
  - 12 Mathematics
  - 12 Social Science (Anthropology, Economics, Geography, History, Political Science, Sociology)

- **C Philosophy and/or Theology**
  - 9 Philosophy and/or Theology (Includes 3 credits in Theology required for Catholics)

- **D Psychology**
  - 6 (Introduction to Psychology is a prerequisite to all others)

Total General Education Requirements: 54

**Professional Education**

- A Minimum of 36 hours must be taken in this area

  - Foundations of Education: 3
  - Educational Psychology, Child Development: 3
  - Reading in Elementary School: 3
  - Teaching Elementary Language Arts and Social Studies: 3
  - Teaching Elementary Math and Science: 3

*Professional Semester: 12*

Supporting Courses: 6

- Speech and Phonetics
- History Elective
- Survey of American Federal Government
- Sociology Elective
- Psychology Elective
- Visual Arts
- Introduction to Music
- English Elective
- Modern Language
- Mathematics
- Science
- Introduction to Political Science

**Additional Requirements**

E Elect a minimum of nine (9) credit hours from the following group:

- Human Development: 3
- Children's Literature: 3
- Introduction to Art: 3
- Music for Classroom Teacher: 2
- Psychology of Identity and Fulfillment: 3
- Learning Resources: 3
- Eurythmics: 1-2
- Field Observation: 1-5
- Independent Study: 1-2
- Problems in Teaching Reading: 3

**D Social Science**

- 3 Social Science (Anthropology, Economics, Geography, History, Political Science, Sociology)

**C Philosophy and/or Theology**

- 9 Philosophy and/or Theology (Includes 3 credits in Theology required for Catholics)

**E Psychology**

- 6 (Introduction to Psychology is a prerequisite to all others)

Total Professional Education Requirements: 54

**Supporting Courses**

- Mathematics, Chemistry: 12
- Social Science: 6-8
- History Elective: 3
- English Elective: 6
- Modern Language: 12
- Speech and Phonetics: 6
- Eurythmics: 1-2
- Field Observation: 1-5
- Independent Study: 1-2
- Problems in Teaching Reading: 3
- Introduction to Political Science: 3

**MUSIC EDUCATION**

- General and professional course work and professional education courses required for this program are outlined in the School of Music section, page 153

**SECONDARY EDUCATION**

The Secondary Education Program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for

- The Instructional I (Provisional) Certificate to teach certain subjects in the secondary schools of Pennsylvania for a period of three years. Four-year

*No student may register for additional course work during this professional semester*

---

**SUBJECT AREA CERTIFICATION REQUIREMENTS**

A minimum of 30 credits (semester hours) is required for certification in the following disciplines: biology, chemistry, communication arts, English, general science, Latin, mathematics, modern languages, physics, social studies, and speech. This is in addition to the General Education requirements.

**Major Field Requirements**

<table>
<thead>
<tr>
<th>Major</th>
<th>Major Field Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>Consult with Biology Department</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Consult with Chemistry Department</td>
</tr>
<tr>
<td>Communication</td>
<td>Consult with English Department</td>
</tr>
</tbody>
</table>

**Supporting Courses**

<table>
<thead>
<tr>
<th>Supporting Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics, chemistry, and physics</td>
</tr>
<tr>
<td>Mathematics and physics</td>
</tr>
<tr>
<td>Speech, English</td>
</tr>
</tbody>
</table>

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*The Instructional I (Provisional) Certificate to teach certain subjects in the secondary schools of Pennsylvania for a period of three years.* Four-year
General Science
Minimum of eight credits in
Social Studies
Economics geography, history
English Consult with
Modern Languages Consult with Modern
Mathematics Calculus
Latin Consult with Classics Department

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120.

In addition to the General Education requirements (see page 137), a student must earn the following credits:

<table>
<thead>
<tr>
<th>Credits</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Professional Education (Required)</td>
<td>9</td>
</tr>
<tr>
<td>1</td>
<td>Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Choose two of the following</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>201 Child Development</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>202 Adolescent Development</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>351 Educational Psychology</td>
<td>3</td>
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<tr>
<td>3</td>
<td>33</td>
<td>Special Education (Required)</td>
</tr>
<tr>
<td>3</td>
<td>390 Intro to Exceptional Children</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>325 Reading in Elementary School</td>
<td>3</td>
</tr>
</tbody>
</table>

Special Education endorsement may be added to Secondary certification by completing the following program:

**SPECIAL EDUCATION**

The program, in accord with the philosophy and objectives of the School of Education, offers students opportunities to qualify for:

1. The Instructional I (Provisional) Certificate to teach special education classes in the schools of Pennsylvania for a period of three years.
2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120.

In addition to the General Education requirements (see page 137), a student must earn the following credits:

<table>
<thead>
<tr>
<th>Credits</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Professional Education (Required)</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>374 Music for the M R</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>376 Teaching the Physically Handicapped</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>377 Seminar in M R</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>379 Learning and Behavioral Disorders</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>485 Psychology of the M R</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>487 Curriculum for the M R</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>488 Curriculum for the M R II</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>399 Student Teaching—M R</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>420 Speech Problems</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>480 Independent Study</td>
<td>1-2</td>
</tr>
<tr>
<td>3</td>
<td>320 Introduction to Art</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>327 Human Development</td>
<td>3</td>
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<tr>
<td>3</td>
<td>352 Abnormal Psychology</td>
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<tr>
<td>3</td>
<td>361 Psychology of Identity</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>409 Hearing and Audiology</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>D</td>
<td>General Electives</td>
</tr>
</tbody>
</table>

**COURSE DESCRIPTIONS**

**Foundations and Psychology**

201 Child Development
Behavior and personality characteristics of children from birth to adolescence as they relate to school and home situations. 3 cr

202 Adolescent Development
Physical, mental, moral, emotional and social development of the adolescent, including needs, interest, and adjustment problems. 3 cr

203, 204, 205, 206, 207 Field Observation
Classroom and other school experiences as an aide or observer. Enrollment with consent of the Director of Student Teaching or a School of Education faculty advisor, one credit each semester for a maximum of five semesters. 1 cr each

301 Foundations of Education
Introduction to the study of the philosophical, social, and historical foundations of education and the relationships between the school and other institutions of society. Required for all types of state certification. 3 cr

327 Human Development
Growth and development of the child, with an emphasis on understanding personality development and problems of growing up. 3 cr

351 Educational Psychology
The genetic approach to mental development, the laws of learning and the principles of memory, motivation, transfer and personality development. Measurement in the school program will be studied, coupled with basic statistical concepts for the functional application of these principles. 3 cr

361 Psychology of Identity and Fulfillment
Implications of the psychology of personality for the wholesome development of personality and for the prevention of lasting personality disturbances. 3 cr

478 Youth and Drug Abuse
Problems of drug abuse and today's youth, including drugs used, the primary toxic and psychological effects, historical and legal aspects. Methods of teaching drug abuse at various levels in the school system are covered together with availability of literature and visual aids and demonstrations of drugs. 3 cr
Early Childhood Education

301 Child Development I 3 cr
Focuses upon the substantive developmental growth in the child from conception through the fourth year of life. Specific emphasis is given to normative physical, intellectual, social, and emotional faculties developing during infancy (ages 0 through 2 years) and during the pre-school years (ages 3 and 4). The role of the family as primary socializing agent is stressed.

302 Child Development II 3 cr
Emphasizes normative physical, intellectual, social and emotional growth and development in the child through the pre-primary and primary school years (ages 5 through 8). Attention is given to the role of the school as socializing agent during these years.

304 Early Childhood Education I 3 cr
The first half of the course encompasses the complete history of child development and early childhood education beginning with the contributions of early educators Pestalozzi, Froebel, etc., and continuing through the eighteenth, nineteenth, and twentieth centuries. The second half of the course examines recent trends, such as Day-Care Centers, Head Start Project Follow Through, etc., with participation in child-care programs required.

305 Early Childhood Education II 3 cr
Students will examine the humanistic, behavioristic, cognitive-developmental, and psychological theories of child development. In-depth study of early childhood education.

Elementary Education

203 Problems in Speech 3 cr
A survey of various speech and hearing disorders and causes, recognition and possible therapy. Prerequisite: Speech 201.

320 Introduction to Art 3 cr
Designed to acquaint the student with materials, methods, and techniques used in relating arts and crafts. An emphasis is placed on learning activities, with particular attention given to the needs of the mentally retarded child.

325 Reading in Elementary School 3 cr
Principles, materials, and methods of instruction in reading. Emphasis on growth toward independent reading skills, development of techniques, appraisal, and record and report of progress.

331 Teaching Elementary Language Arts and Social Studies 3 cr
The theories, techniques, practices, and content referring to the areas of language arts and social studies. Pre-professional laboratory experiences in a public school.
332 Teaching Elementary Mathematics and Science
The theories, techniques, practices, and content pertaining to areas of mathematics and science. Pre-professional laboratory experiences in a public school 3 cr

484 Children's Literature
A general survey of books and other printed materials for children, criteria for the evaluation and analysis of children's books, types of books available, considered in terms of interests, needs, and abilities of children 3 cr

490 Elementary Student Teaching
Student teaching in an approved public elementary school under the direct supervision of a cooperating teacher 9 cr

493 Seminar in Elementary Teaching
Exploration of learning styles, methods and practices of meeting individual differences in the classroom. Role-playing and simulated experiences 2 cr

Secondary Education
362 Teaching Communication (English) in Secondary Schools
A general survey of books and other printed materials for children, criteria for the evaluation and analysis of children's books, types of books available, considered in terms of interests, needs, and abilities of children 3 cr

363 Teaching Foreign Languages in Secondary Schools
Survey of available texts, materials, and varied techniques, supervised observation of master teachers in public schools 2 cr

365 Teaching the Sciences in Secondary Schools
Survey of available texts, materials, and varied techniques, supervised observation of master teachers in public schools 2 cr

366 Teaching Mathematics in Secondary Schools
Survey of available texts, materials, and varied techniques, supervised observation of master teachers in public schools 2 cr

475 Problems in Teaching Social Studies in Secondary Schools
The foregoing methods courses include examination of the principles, nature and trends in the various curricula in secondary schools, survey of available texts, materials, and varied techniques, supervised observation of master teachers in public schools 2 cr

490 Secondary Student Teaching
Student teaching in an approved public secondary school under the direct supervision of a cooperating teacher 8 cr

Special Education
374 Music for the Mentally Retarded
Singing and rhythmic movement activities are basic to this course. It also includes folk dance, listening, and instrumental (percussion instruments) experiences 3 cr

376 Teaching the Physically Handicapped
Overview of the education of children whose mental, sensory motor, language and emotional limitations and deviations are the result of a physical disability. Emphasis is placed on instructional models and techniques, curriculum content and evaluation aspects 2 cr

377 Seminar in Mental Retardation
Analysis of the problems of mental retardation as they relate to etiological factors, home community adjustment, personality development, and educational management. Emphasis is placed on current issues in the field and their application to the learning disorders of the mentally retarded 1 cr

379 Learning and Behavioral Disorders
Psychological effects of learning and behavioral disorders on children and youth. Attention is given to the use of psychological and educational evaluations, educational placement, and desirable teacher competencies through case studies. Consideration will be given to meeting the needs of such children in an educational setting 3 cr

390 Introduction to Exceptional Children
Survey of the social, psychological, and physical characteristics of the various types of exceptional children and of methods for meeting their educational needs, includes field trips to schools and classes which specialize in the education of the atypical child 3 cr

399 Student Teaching—Mentally Retarded
A full semester of supervised classroom experience at a carefully-selected school for mentally retarded pupils 9 cr

485 Psychology of the Mentally Retarded
Study in depth of the etiology and characteristic syndromes representative of the mentally retarded. Patterns of development, nature and needs, will be considered in relationship to education and rehabilitation 3 cr

487 Curriculum for the Mentally Retarded I
Evaluation and integration of the various theories, methodologies, curriculum content, instructional techniques, and evaluation procedures for the profoundly and trainable mentally retarded 3 cr

488 Curriculum for the Mentally Retarded II
A sequel to 487 which deals in a similar fashion with the teaching of educable and borderline mentally retarded children 3 cr
music who should possess a sensitive and intelligent musicianship, and who will be equipped by reason of their general and professional education, to accept positions in fields of performance and/or education.

ADMISSION

Students who are interested in applying for admission to the School of Music should request an application from the Office of Admissions, Duquesne University, Pittsburgh, Pennsylvania 15219. After applications have been processed, candidates will receive a notice requesting that they contact the Office of the School of Music to arrange an appointment for an audition and a theory entrance examination. Specific instructions concerning the audition will then be mailed to the applicant. A tape recording will be accepted for those living more than 150 miles from the University. However, in the event the recording is not satisfactory, a personal audition may be required. All applicants will be notified of the status of their candidacy as soon as possible.

Students planning to major in Music Education are urged to begin study of piano and theory prior to entrance.

ADVISEMENT

At initial enrollment, every student is assigned a faculty advisor who provides assistance with academic matters, especially during pre-registration periods. Guidance in professional objectives will also be provided by faculty committees established for that purpose.

SPECIAL FEES

- Student Teaching: $25.00
- Instruction in voice or instrument as a minor, each semester: $25.00
- Piano Class Fee, each semester: $10.00
- Instrument rental for use in major study (except harp, string bass, oboe, bassoon, tuba and percussion): $25.00
- Instrument rental for use in minor study (except harp, string bass, tuba and percussion): $10.00
- Instrument for class use: $10.00
- Organ practice (major or minor) each semester: $10.00

SUMMER SESSION

Private Instruction Fees
- Two hours a week (major): $75.00
- One hour a week (major): $37.50
- One hour a week (minor): $25.00

Instrument Rental
- Instrument for class use: $5.00
- Instrument for summer months: $15.00
- Instrument for use in six-week Summer Session: $5.00
- Organ practice for use in six-week Summer Session: $5.00
SPECIAL STUDENTS—PRIVATE INSTRUCTION
These fees are charged to non-degree students and others taking the instruction without credit

- One hour a week: $227.00
- One half hour a week: $113.50
- One hour a week (Summer Session): $113.50

FEES WHICH MAY BE APPLICABLE WHEN STUDENT IS TAKING FEWER THAN 12 CREDITS

- Instruction in voice or instrument as a major, each semester: $75.00
- Practice room, a semester: $15.00
- Music fee, a semester: $10.00

DEGREES

The School offers programs leading to two undergraduate degrees: The Bachelor of Music and the Bachelor of Science in Music Education. The Bachelor of Music degree may be earned with a major in piano, organ, voice, or orchestral instruments. These programs are intended for the student interested primarily in performance careers in concert, television, radio, symphony orchestra, and opera, as well as teaching careers in colleges or private studios. Two Music Education programs are offered, one in general music and the other in music therapy. The former is designed to meet certification requirements for teaching in elementary and secondary schools while the latter leads to certification as a registered music therapist. All programs begin at the undergraduate level, except music therapy, which may be continued at the graduate level.

EQUIPMENT

The School of Music has 73 pianos including 56 Steinways. All practice rooms have Steinway uprights. There are two Moeller and one Fischer practice organs, a three manual Moeller organ, and an electronic organ. More than 300 orchestral and band instruments are available for instrument classes, including an EMS Sound Synthesizer. Listening and recording equipment are of professional quality.

STUDENT ORGANIZATIONS

Chapters of the national music fraternity, Phi Mu Alpha Sinfonia, and the national music sorority, Mu Phi Epsilon, contribute substantially to the students' professional and social development. The Music Educators National Conference has an active student chapter which sponsors professional programs and attends and participates in the state, regional, and national activities of the association. There are active student chapters of the American Guild of Organists and the National Association of Music Therapists. Student Council is the organization which is designed to represent the total student body at the School of Music. In addition, it provides an excellent vehicle of communication among students, faculty, and administration.

HONOR AWARDS

- The Dean's Award is presented to a senior music student for general excellence.
- The Seibert Medal is presented to a senior for excellence in violin or piano.
- George Barrere Memorial Scholarship: This $300 scholarship is awarded to a freshman or a sophomore flutist.
- Polish Arts League Scholarship: This scholarship is made annually by the Polish Arts League of Pittsburgh to an outstanding performer in the School of Music. Preference will be given to a student of Polish ancestry. Other students will not be excluded from consideration.
- Pittsburgh Flute Club Award: This award is given to an outstanding woodwind student.
- Louis Rocereto Memorial Scholarship: This $300 scholarship is awarded to a freshman or a sophomore flute major.
- Ezio Pinza Memorial Scholarship: This award of $1000 is presented to an outstanding vocal student, male or female, between the ages of 17 and 25 who has not yet completed an undergraduate degree.

TEACHER CERTIFICATION

All undergraduate programs have been approved by the Pennsylvania Department of Education for the issuance of the Instructional I (Provisional) Certificate. Application for the certificate must be made in the semester in which the student plans to graduate.

RECITAL ATTENDANCE

Students are required to attend 75 percent of the recitals and concerts sponsored by the School of Music. While attendance at all events is encouraged, the number need not exceed 25 a year.

THEOLOGY REQUIREMENT

One, three-credit course in theology is required of every Roman Catholic student.

PROGRAMS

Students' interests are served and their abilities furthered through their selection from among six different programs, four in applied music and two in music education.

BACHELOR OF MUSIC—MAJOR IN PIANO

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fall</td>
</tr>
<tr>
<td>Mus 103, 104</td>
<td>4</td>
</tr>
<tr>
<td>Mus 111, 112</td>
<td>1</td>
</tr>
<tr>
<td>Mus 131, 132</td>
<td>2</td>
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</table>
### Bachelor of Music—Major in Voice

#### Freshman Year

<table>
<thead>
<tr>
<th>Dept</th>
<th>Cat No</th>
<th>Title</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus</td>
<td>109, 110</td>
<td>Applied Music (Voice)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mus</td>
<td>111, 112</td>
<td>Applied Music Minor (Piano)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mus</td>
<td>131, 132</td>
<td>Theory</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Mus</td>
<td>133, 134</td>
<td>Solfeggio</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Mus</td>
<td>134, 144</td>
<td>Ensemble Chorus</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Mus</td>
<td>121, 122</td>
<td>Physical Education (Eurhythmics)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Eng</td>
<td>101, 102</td>
<td>English Composition</td>
<td>3</td>
<td>3</td>
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</table>

#### Sophomore Year

<table>
<thead>
<tr>
<th>Dept</th>
<th>Cat No</th>
<th>Title</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus</td>
<td>203, 204</td>
<td>Applied Music (Voice)</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

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1Includes performance classes required by the piano department
2Includes performance classes required by the organ department
3Includes performance classes required by the organ department
4If 313, 314 Piano Methods is offered in the student's junior year it should be taken, and counterpoint should be taken in the senior year.
### BACHELOR OF MUSIC—MAJOR IN ORCHESTRAL INSTRUMENT

<table>
<thead>
<tr>
<th>Dept</th>
<th>Cat No</th>
<th>Title</th>
<th>Credits</th>
<th>Freshman Year</th>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>Mus</td>
<td>103, 104</td>
<td>Applied Music (Instrument)</td>
<td>3</td>
<td></td>
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</tr>
<tr>
<td>Mus</td>
<td>111, 112</td>
<td>Applied Music Minor (Piano)</td>
<td>1</td>
<td></td>
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<td>1</td>
</tr>
<tr>
<td>Mus</td>
<td>133, 134</td>
<td>Theory</td>
<td>2</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Mus</td>
<td>143, 144</td>
<td>Ensemble or Band</td>
<td>1</td>
<td></td>
<td>1</td>
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</tr>
<tr>
<td>Mus</td>
<td>121, 122</td>
<td>Physical Education (Eurhythms)</td>
<td>2</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Eng</td>
<td>101, 102</td>
<td>English Composition</td>
<td>3</td>
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<td>3</td>
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<tr>
<td>Mus</td>
<td>141, 142</td>
<td>Chamber Music</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Sophomore Year

| Mus  | 203, 204 | Applied Music (Instrument)            | 4       |               | 4    |        |
| Mus  | 211, 212 | Applied Music Minor (Piano)           | 1       |               | 1    | 1      |
| Mus  | 233, 234 | Theory                               | 2       |               | 2    | 2      |
| Mus  | 233, 234 | Solfeggio                            | 2       |               | 2    | 2      |
| Mus  | 243, 244 | Ensemble or Band or Band              | 1      |               | 1    | 1      |
| Mus  | 251, 252 | Music and Western Civilization        | 3       |               | 3    | 3      |

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1Includes performance classes required by the voice department

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### BACHELOR OF SCIENCE IN MUSIC EDUCATION

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<tr>
<th>Dept</th>
<th>Cat No</th>
<th>Title</th>
<th>Credits</th>
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<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>Eng</td>
<td>101, 102</td>
<td>English Composition</td>
<td>3</td>
<td></td>
<td>3</td>
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</tr>
<tr>
<td>Mus</td>
<td>131, 132</td>
<td>Theory</td>
<td>2</td>
<td></td>
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</tr>
<tr>
<td>Mus</td>
<td>133, 134</td>
<td>Solfeggio</td>
<td>2</td>
<td></td>
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<td>2</td>
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<tr>
<td>Mus</td>
<td>181, 182</td>
<td>Woodwind Class Methods (Instrumental)</td>
<td>2</td>
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<tr>
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<td>Applied Music Major</td>
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<tr>
<td>Mus</td>
<td>111, 112</td>
<td>Applied Music Minor (Piano)</td>
<td>1</td>
<td></td>
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<td>1</td>
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<tr>
<td>Mus</td>
<td>121, 122</td>
<td>Physical Education (Eurhythms)</td>
<td>2</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Mus</td>
<td>143, 144</td>
<td>Ensemble</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Sophomore Year

| Mus  | 233, 234 | Theory                               | 2       |               | 2    | 2      |
| Mus  | 233, 234 | Solfeggio                            | 2       |               | 2    | 2      |
| Mus  | 251, 252 | Music and Western Civilization        | 3       |               | 3    | 3      |
| Mus  | 281, 282 | Brass Class Methods (Instrumental)   | 2      |               | 2    | 2      |
| Mus  | 201, 202 | Applied Music Major                   | 2       |               | 2    | 2      |
| Mus  | 211     | Applied Music Minor                  | 1       |               | 1    | 1      |
| Mus  | 215     | Class Piano                          | 1       |               | 1    | 1      |

#### Junior Year

| Mus  | 303, 304 | Applied Music (Instrument)            | 4       |               | 4    |        |
| Mus  | 335, 336 | Counterpoint                          | 2       |               | 2    | 2      |
| Mus  | 351, 352 | Music and Western Civilization        | 3       |               | 3    | 3      |
| Mus  | 341, 342 | Chamber Music                          | 2       |               | 2    | 2      |
| Mus  | 343, 344 | Ensemble Orchestra or Band             | 1       |               | 1    | 1      |
| Mus  | 347, 348 | Small Ensemble                        | (1)    |               | (1) |        |
| Acad El |       | Academic Electives                    | 3       |               | 3    | 3      |

#### Senior Year

| Mus  | 403, 404 | Applied Music (Instrument)            | 5       |               | 5    | 5      |
| Mus  | 438, 439 | Composition                           | 2       |               | 2    | 2      |
| Mus  | 443, 444 | Ensemble Orchestra or Band             | 1       |               | 1    | 1      |
| Mus  | 447, 448 | Small Ensemble                        | (1)    |               | (1) |        |
| Mus  | 191      | Human Physiology                      | 3       |               | 3    | 3      |
| Mus  | 253      | Visual Arts                           | (3)    |               | (3) |        |
| Acad El |       | Academic Elective or Theology         | (3)    |               | (3) |        |
| Mus  | 491      | Physical Science (Acoustics)          | 3       |               | 3    | 3      |
| Mus  | 379      | Conducting                            | 2       |               | 2    | 2      |
| Mus  | 340      | Orchestration                         | (2)    |               | (2) |        |
| Mus  | 441, 442 | Chamber Music                         | 2       |               | 2    | 2      |

1Includes performance classes required by individual departments
### Bachelor of Science in Music Education—Major in Music Therapy

#### Freshman Year

<table>
<thead>
<tr>
<th>Dept</th>
<th>Cat No</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mus</td>
<td>243, 244</td>
<td>Ensemble</td>
<td>1</td>
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#### Junior Year

<table>
<thead>
<tr>
<th>Psych</th>
<th>103</th>
<th>Introduction to Psychology</th>
<th>(3)</th>
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<tbody>
<tr>
<td>Ed</td>
<td>301</td>
<td>Foundations of Education</td>
<td>(3)</td>
</tr>
<tr>
<td>Ed</td>
<td>351</td>
<td>Educational Psychology</td>
<td>(3)</td>
</tr>
<tr>
<td>Ed</td>
<td>201</td>
<td>Child Development</td>
<td>(3)</td>
</tr>
<tr>
<td>Ed</td>
<td>202</td>
<td>Adolescent Development</td>
<td>(3)</td>
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<tr>
<td>Mus</td>
<td>351, 352</td>
<td>Music and Western Civilization</td>
<td>3</td>
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<tr>
<td>Mus</td>
<td>381, 382</td>
<td>String Class Methods</td>
<td>2</td>
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<tr>
<td>Mus</td>
<td>340</td>
<td>Orchestration</td>
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<tr>
<td>Mus</td>
<td>379</td>
<td>Conducting</td>
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<tr>
<td>Mus</td>
<td>383</td>
<td>Elementary Methods</td>
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<tr>
<td>Mus</td>
<td>384</td>
<td>Secondary Methods</td>
<td>(2)</td>
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<tr>
<td>Mus</td>
<td>343, 344</td>
<td>Ensemble or Small Ensemble</td>
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<tr>
<td>Mus</td>
<td>347, 348</td>
<td>Small Ensemble</td>
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#### Senior Year

| Mus   | 191  | Human Physiology            | 3   |
| Acad El | 491 | Physical Science (Acoustics)| 3   |
| Mus   | 253  | Visual Arts                 | (3) |
| Mus   | 387  | Marching Band Methods       | (1) |
| Mus   | 385  | Choral Methods              |     |
| Mus   | 492  | Creative Personality        | (3) |
| Acad El | 481 | Academic Elective           |     |
| Mus   | 401, 402 | Applied Music Major        | 2   |
| Mus   | 443, 444 | Ensemble or Small Ensemble | 1   |
| Mus   | 447, 448 | Small Ensemble             | (1) |
| Mus   | 490  | Student Teaching            | (6) |

### BACHELOR OF SCIENCE IN MUSIC EDUCATION—MAJOR IN MUSIC THERAPY

#### Freshman Year

<table>
<thead>
<tr>
<th>Dept</th>
<th>Cat No</th>
<th>Title</th>
<th>Fall</th>
<th>Spring</th>
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<tr>
<td>Eng</td>
<td>101, 102</td>
<td>English Composition</td>
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<tr>
<td>Mus</td>
<td>131, 132</td>
<td>Music Theory</td>
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<td>Mus</td>
<td>133, 134</td>
<td>Solfeggio</td>
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<td>101, 102</td>
<td>Applied Music Major</td>
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<td>Mus</td>
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<td>Mus</td>
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<td>Music Therapy Orientation</td>
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<td>Mus</td>
<td>481</td>
<td>Percussion Class Methods</td>
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<td>Mus</td>
<td>121, 122</td>
<td>Physical Education (Eurhythmics)</td>
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<td>Mus</td>
<td>143, 144</td>
<td>Ensemble</td>
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</table>

#### Sophomore Year

| Mus  | 185, 186 | Voice Class                | 2    | 2      |

1. Includes performance classes required by individual departments.

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### SCHOLAR OF MUSIC

#### Freshman Year

| Mus  | 231, 232 | Music Theory            | 2    | 2      |
| Mus  | 233, 234 | Solfeggio               | 2    | 2      |
| Mus  | 251, 252 | Music and Western Civilization | 3   |
| Mus  | 181, 182 | Woodwind Class Methods  | 2    |
| Mus  | 183, 184 | Woodwind Class Methods  | 2    |
| Mus  | 108     | Music in Therapy        | 2    |
| Mus  | 201, 202 | Applied Music Major     | 2    |
| Mus  | 213, 214 | Piano Class             | 1    |
| Mus  | 211     | Applied Music Minor     | 1    |
| Mus  | 243, 244 | Ensemble                | 1    |

#### Junior Year

<table>
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<tr>
<th>Psych</th>
<th>103</th>
<th>Introduction to Psychology</th>
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<tr>
<td>Mus</td>
<td>351, 352</td>
<td>Music and Western Civilization</td>
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<td>Mus</td>
<td>381, 382</td>
<td>String Class Methods</td>
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<td>281, 282</td>
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<td>Orchestration</td>
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<td>Drug Abuse</td>
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<td>Mus</td>
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<td>Psychology of Music</td>
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<td>Mus</td>
<td>301, 302</td>
<td>Applied Music Major</td>
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<td>Mus</td>
<td>343, 344</td>
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<tr>
<td>Mus</td>
<td>447, 448</td>
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#### Senior Year

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<tr>
<th>Psych</th>
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<th>Abnormal Psychology</th>
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<tr>
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<td>191</td>
<td>Human Physiology</td>
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<td>Mus</td>
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<td>Survey of Sociology</td>
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<td>102</td>
<td>Survey of Anthropology</td>
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<tr>
<td>Mus</td>
<td>308</td>
<td>Influence of Music on Behavior</td>
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<td>Mus</td>
<td>401, 402</td>
<td>Applied Music Major</td>
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<td>Mus</td>
<td>443, 444</td>
<td>Ensemble or Small Ensemble</td>
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<td>Mus</td>
<td>447, 448</td>
<td>Small Ensemble</td>
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<td>Acad El</td>
<td>493</td>
<td>Academic Elective or Theology</td>
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</table>

1. Includes performance classes required by individual departments.

2. Piano Majors in Music Education select another instrument or voice for their Applied Music Minor. They also continue with the Applied Music Minor 211. (Organ Majors are required to select piano as their secondary instrument.)

3. For Orchestral Instrument and Voice Majors only.

4. For Piano and Organ Majors only.
COURSE DESCRIPTIONS

MUSIC THEORY

The Theory Department recognizes the individual differences of students and provides an opportunity for them to advance according to their abilities.

131, 132 Theory 2 cr each

This course is designed to acquaint the student with the materials of musical composition using diatonic harmony. Opportunities for the student to do creative work are provided. Three hours a week.

133, 134 Solfeggio and Ear Training 2 cr each

The goals of the course are to develop good intonation and the ability to sight sing, the ability to identify and notate melodies, rhythms, chords, and complete compositions, and to develop inner hearing and memory. The devices used are solfeggio (singing unison and ensemble music, prepared and on sight), drills on intervals and broken chords, unison and two-part rhythm exercises, keyboard work and clef reading and systematically graded dictation. The course uses the movable Do system, based on the Kodaly method. Two hours a week.

231, 232 Theory 2 cr each

A continuation of 132 introducing chromatic harmony and the basic principles of contrapuntal writing. Creative opportunities continued. Three hours a week.

233, 234 Solfeggio and Ear Training 2 cr each

A continuation of 134. Two hours a week.

335 Counterpoint 2 cr

The course is devoted to a study of the polyphonic technique of the sixteenth century.

336 Counterpoint 2 cr

A course study concerned with the harmonic contrapuntal technique of the period of J. S. Bach.

340 Orchestration 2 cr

A study of the basic problems of scoring for individual instruments, particular orchestral choirs, the entire orchestra, and unique instrumental combinations. Analysis of the techniques of orchestration of selected composers of the 18th, 19th, and 20th centuries.

440 Jazz Arranging 2 cr

A study of the basic techniques of scoring for individual instruments and jazz ensembles of various sizes, from small groups to studio orchestra. Special emphasis will be placed on harmonies, voicings, instrumentation, and articulations which are characteristic of this kind of music. May be taken in place of Orchestration 340. Offered in the spring semester only.

426 Jazz Improvisation I 2 cr

Melodic and harmonic creation on the basis of idiomatic jazz rhythms and articulations, employing elementary and advanced forms, chord structures and chromatic alterations. Permission of instructor required.

427 Jazz Improvisation II 2 cr

Continuation of 426.

138, 139 Composition 2 cr each

The study of writing of musical composition in the smaller forms.

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238, 239 Composition 2 cr each

The study and writing of musical composition in the larger forms.

338, 339, 438, 439 Composition 2 cr each

These courses are offered in order to provide gifted young composers an opportunity to receive guidance in the development of advanced compositional techniques. Permission of the chairman of the Theory Department is required.

EURHYTHMICS

121, 122 Eurhythmics 2 cr each

Fundamentals of rhythmic movement. Study of pulse, meter, rhythm, and duration, the expressive qualities of music such as tempo, dynamics, and phrasing realized and expressed through bodily movement. Two hours a week.

MUSIC HISTORY, LITERATURE AND ART

251, 252, 351, 352 Music and Western Civilization 3 cr each

An historical survey of the ideas and cultural achievements of Western man in the context of the political and sociological developments to which the art of music is bound. The survey embraces four semesters which are arranged chronologically.

These courses seek to provide a broad historical frame of reference within which the relationship of music to the development of man's thought can be clearly seen.

452 Organ Literature 2 cr

A survey of organ literature and organ building. Outside listening and readings will be required.

349, 350, 449, 450 Vocal Repertoire 1 cr each

Study and performance of vocal solo and ensemble literature. Four semesters encompass Italian, German, French, and Contemporary (United States and Britain) music, with concentration on one category each semester.

253 Visual Arts 3 cr

Designed to give the student a basic vocabulary in the visual arts (painting, sculpture, architecture, and the graphic arts) and to make him conversant with the most important styles he will encounter. During the course of the semester the course will include several visits to the museums and galleries in the Pittsburgh area.

TAMBURITZANS INSTITUTE OF FOLK ARTS

154 Introduction to Folklore 3 cr

An introductory examination of the definition and scope of folklore studies, and the role of folklore in people's lives. Examined are various forms of folklore and folk expression such as tales, ballads, myths, legends, beliefs, games, proverbs, riddles, folk songs, and folk customs and their role in societies.

255 Introduction to Balkan Music 2 cr

An analytical study of the primitive and traditional folk music of the Balkans, its musical styles, forms and characteristics in terms of its geographical setting and historical background, and its general structure and aesthetics.
256 Introduction to Balkan Dance 2 cr
A survey of folk dances of the Balkans highlighting their development, form, indigenous characteristics, differences and similarities from one ethnographic region to another

147, 148, 247, 248, 347, 348, 447, 448 Tamburitza Ensemble 1 cr each
The Tamburitza Ensemble involves the study and performance of music specifically composed and arranged for both small and large Tamburitza string ensembles. It encompasses the fundamental principles and techniques for both playing and teaching the Tamburitza and includes appropriate literature. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

APPLIED MUSIC

101, 102, 201, 202, 301, 302, 401, 402 Applied Music Major for the Bachelor of Science in Music Education 2 cr each
The study of voice, piano, organ, string, wind, or percussion instruments throughout all semesters. The university reserves the right to give equivalent instruction by way of private class lessons should it seem to the students’ advantage to do so.

103, 104, 109, 110, 203, 204, 303, 304, 403, 404 Applied Music Major for the Bachelor of Music 2 cr each
Private study of voice, piano, organ, string, wind, or percussion instruments throughout all semesters. Credits are distributed according to departmental curricula.

111, 112, 211, 212, 311, 312, 411, 412 Applied Music Minor for all Bachelor Degrees 1 cr each
All students must choose an applied music minor upon entrance. Those students who do not elect piano as a major must study it as a secondary instrument. Students failing to meet the minimum requirements in the time allotted for their particular degree must continue study until the requirements have been fulfilled.

379 Conducting 2 cr
This course provides a study of the fundamentals of conducting as a performing skill, teaching technique, and as an interpretive art. Use of the baton, choral and instrumental rehearsal techniques, and score reading. Two hours a week.

ENSEMBLE

Required for all students as laboratory work during each semester of full-time enrollment. At least four semesters (usually the first four) must be spent in one of the major ensembles—Orchestra, Band, Concert Choir—after which a student may, with the request or approval of the conductor, take one of the smaller ensembles for credit applicable toward the total ensemble requirement. Students must indicate the specific ensemble for which they are enrolling on forms completed during registration.

143, 144, 243, 244, 343, 344, 443, 444, 445, 446 Ensemble 1 cr each
Bachelor of Science in Music Education: Voice, Piano, and Organ Majors will participate in a choral ensemble for each semester of enrollment. Instrumental Majors will participate in Band, Orchestra, and/or other instrumental ensemble for each semester of enrollment. Instrumentalists are encouraged to take advantage of opportunities to participate in

SCHOOL OF MUSIC

choir, keyboard or voice majors are likewise encouraged to gain experience in one of the instrumental ensembles.

Bachelor of Music
Voice Majors will participate in choir or other choral/vocal ensemble. Piano and organ majors will accompany soloists as approved by the studio faculty. Instrumental Majors will participate in band, orchestra or other instrumental ensemble

147, 148, 247, 248, 347, 348, 447, 448 Small Ensemble 1 cr each
The Small or Minor Ensembles include Tamburitza Ensemble, Chamber Singers, Brass Ensemble, Percussion Ensemble, Woodwind Ensemble, and Jazz Ensemble. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

116, 117, 216, 217, 316, 317, 416, 417 Opera Workshop 1 cr each
A performing class in which students learn standard and other opera repertory in English and the original languages. There is one major production each semester plus several outside performances. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

141, 142, 241, 242, 341, 342, 441, 442 Chamber Music 1-2 cr each
Study and performance of all types of chamber music for the various instrumental combinations.

MUSIC EDUCATION

181 Woodwind Class Methods I 2 cr
Fundamental principles and techniques of playing and teaching the clarinet. Study of literature which is appropriate for beginning class instruction. For voice, piano, and organ majors in the music education program. Offered in the fall semester. Two hours a week.

182 Woodwind Class Methods II 2 cr
Performance technique on clarinet continued. Teaching technique of oboe, bassoon and saxophone covered. For voice, piano, and organ majors in the music education program. Prerequisite: Music 181. Offered in spring semester. Two hours a week.

183 Woodwind Class Methods I 2 cr
Fundamental principles and techniques of playing and teaching the clarinet. Study of literature which is appropriate for beginning class instruction. For woodwind, brass, string, and percussion majors in the music education program. Offered in the fall and spring semesters. Two hours a week.

184 Woodwind Class Methods II 2 cr
Fundamental principles and techniques of playing and teaching the saxophone, oboe flute and bassoon. Study of mechanism and evaluation of class methods and materials. Students are expected to develop a reasonable performing skill on each instrument. For woodwind, brass, string, and percussion majors in the music education program. Prerequisite: Music 183. Offered in the fall and spring semesters. Two hours a week.

185, 186 Voice Class 2 cr each
Fundamentals of voice production including placement, breathing, breath control, study of vowels and consonants, posture, elementary song materials, interval and scale drill, sight singing.
282 Piano Class

The development of functional keyboard skills in sight reading, transposition, harmonization of melodies, and improvisation of accompaniments. Required of all Music Education majors in the music education program. Offered in the spring semester. Two hours a week.

Prerequisite: Piano 111, 112 or Advanced Standing Examination

213, 214 Piano Class

The development of functional keyboard skills in sight reading, transposition, harmonization of melodies, and improvisation of accompaniments. Required of all Music Education majors in the music education program. Offered in the spring semester. Two hours a week.

Prerequisite: Piano 111, 112 or Advanced Standing Examination

215 Piano Class for Piano Majors in Music Education

Piano majors in Music Education study the development of functional keyboard skills in sight reading, transposition, accompaniments. Required of all Piano Majors. Offered in the fall semester. Two hours a week.

281 Brass Class Methods I

Fundamental principles and techniques of playing and teaching the trumpet. Study of literature which is appropriate for beginning class instruction. For voice, piano, and organ majors in the music education program. Offered in the fall semester. Two hours a week.

282 Brass Class Methods II

Performance technique on trumpet continued. Teaching technique of French horn, trombone, baritone and tuba. For voice, piano, and organ majors in the music education program. Prerequisite: Music 281. Offered in the spring semester. Two hours a week.

283 Brass Class Methods I

Fundamental principles and techniques of playing and teaching the trumpet. Study of literature which is appropriate for beginning class instruction. For woodwind, brass, string, and percussion majors in the music education program. Offered in the fall and spring semesters. Two hours a week.

284 Brass Class Methods II

Fundamental principles and techniques of playing and teaching French horn, trombone, baritone and tuba. Study of construction, fingering, and evaluation of class methods and materials. For woodwind, brass, string, and percussion majors in the music education program. Music 283 is not a prerequisite for this course. Offered in the fall and spring semesters. Two hours a week.

381 String Class Methods I

Each student selects one of the string instruments and studies it throughout the semester in order to attain greater technical proficiency. Two hours a week.

382 String Class Methods II

Fundamental principles and techniques of playing and teaching the violin, viola, cello, and bass. Bowing, positions, vibrato, and an examination of class methods and materials are presented. Two hours a week.

383 Elementary Methods

Principles, practices, and materials for the general program in the elementary grades. A program of scheduled observations and discussion periods will be required. Two hours a week.

384 Secondary Methods

Principles, practices, and materials for the general music program in the secondary schools including voice classification, the organization of ensemble activities, concerts, assembly programs, and the relationship of the school to the community. A program of scheduled observations and discussion periods will be required. Two hours a week.
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and the original languages. There is one major production each semester plus several outside performances.

349, 350, 449, 450 Vocal Repertoire
Study and performance of vocal solo and ensemble literature. Four semesters encompass Italian, German, French, and Contemporary (United States and Britain) music, with concentration on one category each semester.

PIANO

103, 104
Bach, Three Part Inventions, Haydn and Mozart, selected sonatas, Beethoven, Op 10 and Op 14, Chopin waltzes, mazurkas, nocturnes, selections from modern repertoire. All major and minor scales in different rhythms and tempi, dominant and diminished seventh arpeggios.

203, 204
Scarlatti selected sonatas, Bach, selections from Well-Tempered Clavier, Beethoven, Op 22 Op 31, Chopin, preludes, impromptus, and nocturnes, Brahms rhapsodies, selections from contemporary repertoire. Continue scales and arpeggios.

303, 304

313 Piano Methods I
Students will become acquainted with the techniques and materials for teaching piano at the elementary level. For piano majors, junior standing is required.

314 Piano Methods II
A continuation of 313 concentrating on the techniques and materials for teaching piano at the intermediate and advanced levels.

403, 404
Bach, Suites, Partitas, Toccatas, Well-Tempered Clavier, Beethoven sonatas from middle and late periods, more extensive compositions from the Romantic Period, Ravel, Jeux d'eau, at least one work selected from the standard concerto literature, contemporary literature.

ORGAN

103, 104

203, 204
Brahms Chorale Preludes, Mendelssohn, Schumann, Hindemith, Sonatas, Jenkins, Six Pieces, Dupre, Antiphons, Messe, Le Banquet Celeste or Ascension Suite, movements 1 or 4, Langlais, Franck, Cantabile or Prelude, Fugue and Variation, Schroeder or Pep-
303, 304
D'Aquin, Clerambault, deGrigny, Handel, Corelli, Franck, Fantaisies, Pince Henoque, Sowerby, and contemporary American selections, Mozart, Sweelinck, Bach, 18 Great Chorales, Hymn playing, Prelude and Fugue in G Major, D minor, C minor, F minor, Schubert, Chorales, free harmonizations, keyboard harmony, modulations to all keys, counterpoint arrangement.
4 cr each

403, 404
Franck, Chorales, Messiaen, Nativity, Liszt, Dupre, Preludes and Fugues, Durufle, Langlais, Vierne, and Widor, Symphonies, Alain, Tournemire, selected works by contemporary composers, Bach, Passacaglia and Fugue, Prelude and Fugue in D minor, E minor, G minor, Clavierubung, Part III Conducting from the console, accompaniment of larger choral works, improvisation.
6 cr each

VIOLIN
103, 104
Scales and arpeggios in three octaves, two octaves in thirds, sixths, octaves and tenths, Rode, Caprices, Wieniawski, Caprices, Mozart, Concerto No. 4, Vieuxtemps, Fantasia, Appassionato.
3 cr each

203, 204
Scales and arpeggios continued, Dont,Twenty-four Etudes, Mozart, Concerto No 5, Wieniawski, Concerto No 2, Bach, Sonatina for violin and clavier.
4 cr each

303, 304
Continue scales and arpeggios, add all possible four octave scales, Gavannes, Twenty-four Matines, Bruch, Concerto in D minor, No 2, Lalo, Symphonie Espagnole, sonatas by Beethoven and Brahms.
4 cr each

403, 404
Wieniawski, Ecole Moderne, Paganini, Caprices, Bach solo sonatas and partitas, concertos by Beethoven and Brahms.
5 cr each

VIOLA
103, 104
Scales and arpeggios in three octaves, selected scales in thirds, sixths, octaves and tenths, Flesch, Scale Studies, Sevek, Studies (Lisichey), Campagnoli, Forty-one Caprices, Fuchs, Twelve Caprices, Enesco, Concert Piece.
3 cr each

203, 204
All major and minor scales and arpeggios, scales in octaves, thirds, sixths, and tenths, Selected studies from Rode, Caprices, Hermann, Six Concert Studies Op 18, Concertos by C P E Bach and Hoffmeister, Vaughan-Williams, Suite, Sonata by Milhaud, parts from orchestral and chamber music literature.
4 cr each

303, 304
Continue scales and arpeggios, Selections from Rode, Caprices and Gavannes, Twenty-four Matines, Sonatas by Brahms and Cremona, Viola parts from orchestral and chamber music literature.
4 cr each

DOUBLE BASS
103, 104
Scales and intervals in all keys, Simandl, Thirty Etudes, Selected pieces, Orchestral studies.
3 cr each

203, 204
Hrabe, Eighty-six Etudes, Short pieces by Koussevitsky and Bottesini, Orchestral studies.
4 cr each

303, 304
Nanny, Etudes de Kreutzer et de Fiorillo, concertos by Koussevitsky, Dittersdorf, Orchestral studies.
4 cr each

403, 404
Nanny, Dix Etudes, Caprices, Storchi, Twenty Concert Etudes, concertos by Koussevitsky and Dragonetti, Orchestral studies.
5 cr each

HARP
103, 104
Lariviere, Exercises, and technical studies, Standard orchestra parts, Bochsa Etudes, opus 318, Book II, Pieces of grade of difficulty of Grandjany, Aria in Classic Style, Tournier, Images (Suite I), Saint-Saens, Fantasie.
3 cr each

203, 204
4 cr each
303, 304 4 cr each  
Technical studies, Orchestra parts, Boetsa Etudes, opus 34. Pieces grade of difficulty of Hindemith Sonata, Handel Concerto in B flat major, Ravel, Introduction and Allegro

403, 404 5 cr each  
Technical studies, Pieces grade of difficulty of Boetsa Impromptu, C P E Bach, Sonata, Salzedo Scintillation, Debussy, Danse Sacre et Profane

FLUTE

103, 104 3 cr each  

203, 204 4 cr each  

303, 304 4 cr each  

403, 404 5 cr each  

OBEO

103, 104 3 cr each  

203, 204 4 cr each  
Continue scales and arpeggios, including scales in thirds and measured trills. Barret, Grand Etudes and Duets, Andraud, Vade Mecum, Bleuzet, selected studies from Technique of the Oboe, Handel sonatas, Marcello Concerto.

303, 304 4 cr each  
Continue scales and arpeggios. Bleuzet selected studies for range and endurance. Orchestral studies: Cimarosa, Concerto Paris Conservatory, solos representative, contemporary compositions.

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403, 404 5 cr each  
Blauzet, Technique of the Oboe, scales in all articulations, scales in groups of five and seven, scales by interval, arpeggios and broken arpeggios. Orchestral studies including the works of J S Bach, sonatas by Telemann and Hindemith, solos by Busser, Jolivet, River, Mozart, Concerto, Symphonic Concertante and Quartet, Concerto by Goossens, contemporary solos.

CLARINET

103, 104 3 cr each  

203, 204 4 cr each  

303, 304 4 cr each  

403, 404 5 cr each  
Jeangean, Sixteen Modern Studies, Pierres, Vingt-deux Etudes Modernes, Spohr, Concerto, Debussy, Premier Rhapsodie, representative contemporary solos and sonatas.

BASSOON

103, 104 3 cr each  
Scales and arpeggios, in all keys. Kovar scales, five note studies and interval studies. Selected studies and Weissenborn and Milde solos by Weissenborn, Foret and Mouquet. Reed making.

203, 204 4 cr each  
Continue scales and arpeggios, Kovar technical studies, Oubradous, Scales and Daily Drills. Milde, Concert Studies, Handel, Sonata in C minor, solos by Bozza and Vidal.

303, 304 4 cr each  
Oubradous, Scales and Daily Drills, Milde, Concert Studies, Oubradous, Brava Stiques, selected passages from the Bach Cantatas, Mozart, Concerto in B flat, Beethoven, Qunitet, representative contemporary solos, orchestral studies.

403, 404 5 cr each  

SAXOPHONE

103, 104 3 cr each  
Mule, Scales and Arpeggios, Small, 27 Melodious and Rhythmic Exercises, Labradoraslasili, 33 Concert Etudes, Vol 1, Concertino by Mulhaud.

203, 204 4 cr each  
Mule, Scales and Arpeggios, Vol 11, Lamotte, 18 Studies for Saxophone, Labradoraslasili, Exercises in All the Practical Keys, Guillou, Sontane, Glazounov, Concerto.
HORN

103, 104
Scales and arpeggios in all keys, review of fundamentals of tone production, Alphonse, Deux Cents Etudes Nouvelles, Gallay.

203, 204
Alphonse, Deux Cents Etudes Nouvelles, Kopprasch Studies, Strauss, Seventeen Concert Studies, Chabrier, Larghetto Mozart, concertos, orchestral studies

303, 304
Alphonse, Deux Cents Etudes Nouvelles, Kopprasch Studies, Gallay, Twelve Caprices, Beethoven Sonata, Mozart, Concert Rondo, orchestral studies

403, 404
Alphonse, Deux Cents Etudes Nouvelles Studies by Kopprasch and Gallay, R. Strauss, Concerto Saint-Saëns, Moreau de concert, Schumann, Adagio and Allegro, Dukas, Villanelle orchestral studies

TRUMPET

103, 104
Schlossberg Daily Drills, Arban, Complete Method for Trumpet, Saechse One Hundred Etudes Brandt, Orchestral Studies, D'Ollone, Solo de Trompette, Videl Concertino

203, 204
Schlossberg Daily Drills, Saechse One Hundred Etudes, Brandt, Orchestral Studies, Bousquet Studies, Eresco Concerto, Sowerby Sonata

303, 304
Pietzsch Studies, Bousquet Studies, Brandt, Orchestral Studies Hindemith, Sonata for Trumpet, Persechetti, The Hollow Men, Intrada by Honegger

403, 404
Sauver, Techniques, Pauvert Sixty-two Exercises, Advanced Studies by Clarke, Lerveling and others. Concertos by Haydn, Giannini, Bohtnstedt, Peeters Sonata Orchestral Studies

TROMBONE

103, 104

203, 204
Scales and arpeggios in all keys, Stacey, Lip Flexibility Arban, Complete Method for Trumpet, Donal, Complete Method for Trombone, Laub, Complete Method for Trombone, Saechse, One Hundred Etudes Brandt, Orchestral Studies, D'Ollone, Solo de Trompette, Videl Concertino, Ibert, Concertino

303, 304
Rascher, Top Tones and Four Octave Studies, Mule, 53 Studies, Lavern, Thirty-two Studies, Montz Concerto, Contemporary solos, orchestral studies

403, 404

Percussion

103, 104
Fundamental snare drum technique and its application to musical notation, exercises in rhythm phrasing, control. Elements of tympani technique, their application to classical literature, tuning, Rudimentary xylophone technique scales, arpeggios, forms

203, 204
Advanced snare drum studies, repertoire Three and four tympani exercises, orchestral literature. Intermediate xylophone studies, transcriptions for solo

303, 304
Tympani study through romantic and contemporary literature. Advanced xylophone exercises, transcriptions. Latin American instrumental techniques, use of special accessories in late 19th and 20th century literature. Repertoire in all instruments

403, 404
Examination of representative solo material for all percussion instruments, preparation of solo for recital
Bachelor of Science in Music Education

VOICE

The Voice Department recognizes the individual differences of students, and therefore reserves the right to adjust Applied Music course content to accommodate such differences, thereby promoting optimum progress.

101, 102 2 cr each
Fundamentals of tone production, vocalises and songs to suit the needs of the student. Songs will be chosen from the repertory of easier materials in English and Italian.

201, 202 2 cr each
Exercises to develop flexibility, range and power, early Italian art songs by Bononcini, Pergolesi, Caccini, contemporary songs in English.

301, 302 2 cr each
More advanced technical study. Italian art songs of Scarlatti and Caldara, representative examples of easier German lieder and moderately difficult contemporary song literature.

401, 402 2 cr each
Advanced technical exercises to fit the student's need. Less difficult arias chosen from the standard operatic and oratorio literature, representative songs in German, French and English with emphasis on contemporary materials in English.

PIANO

101, 102 2 cr each
Bach, two part inventions, short preludes and fugues, easier sonatas of Haydn and Mozart, Beethoven, Rondo in G, easier nocturnes and mazurkas of Chopin. Major scales: M M quarter note equals 96, diminished seventh arpeggios: M M quarter note equals 88. All scales and arpeggios in triplet and quadruplet rhythms.

201, 202 2 cr each

301, 302 2 cr each
Bach, selected preludes and fugues from Well-Tempered Clavier, Beethoven Op. 10 No 2, Op. 27, Chopin, preludes and nocturnes, selections from contemporary repertoire. Continuation of major and minor scales, dominant, diminished seventh and triad arpeggios.

401, 402 2 cr each

ORGAN

101, 102 2 cr each
Gleason, Method of Organ Playing. Stanley, Voluntaries. Franck, L’Organiste, Vierne, 24 Pieces, Dupre, Chorale Preludes, Pachelbel, Fugues on the Magnificat, Selected compositions by Gabrieli, Frescobaldi, Buxtehude, Brahms, Bohm and Couperin, Bach, Orgelbuchlein selections, Eight Short Preludes and Fugues, Little Fugue in G minor and

SCHOOL OF MUSIC

Cathedral Prelude and Fugue. Hymn playing, transposition, modulations to closely related keys. Counterpoint.

201, 202 2 cr each
Brahms, Chorale Preludes, Mendelssohn, Schumann, Hindemith, Sonatas, Jenkins, Six Pieces, Dupre, Antiphons, Masses, Le Banquet Celeste or Ascension Suite movements 1 or 4, Langlais, Franck, Camille or Prelude, Fugue and Variation, Schroeder or Pemping. Vienne, Pieces de Fantaisie, Bach, Orgelbuchlein, Trio Sonata, Concerti, Prelude and Fugue in G Major, D minor, C minor, F minor. Schubler Chorales. Hymn playing, keyboard harmony, modulations to all keys. Counterpoint.

301, 302 2 cr each

401, 402 2 cr each

431, 432 Improvisation 1 cr each
A practical application of the basic tools of improvisation including harmonization of melodies at the organ. Two and three part counterpoint. Short ABA forms and chorale preludes with emphasis on their liturgical application.

VIOLIN

101, 102 2 cr each

201, 202 2 cr each

301, 302 2 cr each
Scales and arpeggios continued. scales in thirds, sixths, octaves and tenths. Rode, 24 Caprices, Mozart sonatas for violin and piano, Mozart, Concerto in G, selected compositions by Kreisler. Representative contemporary solos, selected movements of standard concertos.

401, 402 2 cr each
**VIOLA**

101, 102  2 cr each
Scales and arpeggios in three octaves, Sevcik Studies (Lifshey), Hermann, Technical Studies, Telemann Concerto in D, Bruch, Romance

201, 202  2 cr each
Continue scales and Sevcik Studies, selected studies from Kreutzer, 42 Etudes, Stamitz, Concerto in D

301, 302  2 cr each
Continue scales and arpeggios, scales in thirds, sixths and octaves, Palachko, 20 Etudes, Fiornullo, selected studies from 36 Etudes, Bach, three viola de gamba sonatas adapted for viola

401, 402  2 cr each
Scales and arpeggios continued, selected studies from Campagnoli, 41 Caprices, Concerto in B minor by Handel-Casadesus, Hindemith, Music of Mourning, selected contemporary solos, viola parts from orchestral and chamber music literature

**VIOLONCELLO**

101, 102  2 cr each
Scales and arpeggios in three octaves, Franchomme, 12 Studies, sonatas by Handel, Corelli, Concertos by Goltermann and Romberg

201, 202  2 cr each
Scales and arpeggios continued, Duport Etudes, Galeotti, Sonata No. 2, Marais Suite, Romberg Concerto in D minor

301, 302  2 cr each
Scales and arpeggios continued, Duport Etudes, Grutzmuehler Etudes, Sonatas by Grazioli, Sammartini, Goltermann Concerto No. 1

401, 402  2 cr each
Scales and arpeggios as before but including thirds, sixths and octaves, Duport Studies, selected studies from Franchomme, 12 Caprices, Concerto No. 2, Romberg, Sonatas by Nardini, Sammartini, orchestral studies

**DOUBLE BASS**

101, 102  2 cr each
All positions up to thumb position, scales and intervals in all keys, Simandl, New Method for the Double Bass

201, 202  2 cr each
Scales continued including thumb positions, Simandl Method continued, selected pieces

301, 302  2 cr each
Scales and intervals continued, Simandl Method completed, Simandl, Thirty Etudes, selected pieces, violoncello sonatas by Marcello and others, orchestral studies

401, 402  2 cr each
Simandl, Thirty Etudes, selected studies from Hrabe, Eighty-six Etudes, pieces by Koussevitzky and others, orchestral studies

**HARP**

101, 102  2 cr each
Lavignere Exercises and technical studies, Standard orchestra parts, Bochsa Etudes opus 318, Book II, Pieces of difficulty of Grandjany, Arias in Classic style, Tournier Images (Suite I), Saint-Saens, Fantasie

201, 202  2 cr each
Technical studies, Bochsa Etudes, opus 62, Standard orchestra cadenzas, Pieces of difficulty of Tournier, Feerie, Rousseau, Variations Pastorales, Grandjany, Fantasie on a Theme of Haydn

301, 302  2 cr each
Technical studies, Orchestral parts, Bochsa Etudes, Opus 34, Pieces of difficulty of Hindemith, Sonata, Handel Concerto in Bb major, Ravel, Introduction and Allegro

401, 402  2 cr each
Technical studies, Pieces of difficulty of Faure, Impromptu, C P E. Bach, Sonata, Salzedo, Scintillation, Debussy, Danse Sacre et Profane

**GUITAR**

Information and course content in preparation

**FLUTE**

101, 102  2 cr each
Kohler, Etudes Book 1, Tereschak Studies, Drouet, 25 Celebrated Etudes, scales and arpeggios in all keys, selected solos, Sonatas by Marcello, Handel, and Blavet

201, 202  2 cr each

301, 302  2 cr each

401, 402  2 cr each
Anderson Etudes, Op. 30, Bergguener, 18 Studies, Taffanel-Gaubert, Scales, scales in thirds and in sixths, chromatic scales, arpeggios and trills, pieces by Quantz, Donjon, Thomas, Ibert, sonatas by Handel, Telemann and Blavet, representative contemporary pieces

**OBEO**

101, 102  2 cr each
Review of previous work by student and corrective exercises as necessary, scales and arpeggios, Barret, Exercises in Articulation and Progressive Melodies, selected solos

201, 202  2 cr each
Scales and arpeggios in all keys, continue Barret, selected studies from Bleuzet, Technique of the Oboe, Vol. I, solos by Handel and Schumann

301, 302  2 cr each
Barret, Progressive Exercises, Bleuzet, Technique of the Oboe, Vol. II, continue scales and arpeggios in various articulations, Handel sonatas, orchestral studies, contemporary solos, reed making
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Course Number</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Clarinet</strong></td>
<td>401, 402</td>
<td>2 cr each</td>
<td>Barret, Etudes, selected etudes by Ferling, continue scales and arpeggios, solos by Bach and Handel, contemporary solos</td>
</tr>
<tr>
<td></td>
<td>101, 102</td>
<td>2 cr each</td>
<td>Scales and arpeggios, Klose, Celebrated Method for Clarinet, Part II, Baerman, Method Book II, selected solos</td>
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<tr>
<td></td>
<td>201, 202</td>
<td>2 cr each</td>
<td>Continue scales and arpeggios in various articulations, continue Klose Method, Rose, 32 Studies for Clarinet, Voxman, Duets, selected solos</td>
</tr>
<tr>
<td></td>
<td>301, 302</td>
<td>2 cr each</td>
<td>Langenus Scale Studies, continue Rose, 32 Studies, Klose, 20 Characteristic Studies, Weber, Fantasy and Rondo, orchestral and band studies</td>
</tr>
<tr>
<td></td>
<td>401, 402</td>
<td>2 cr each</td>
<td>Continue Langenus, Scale Studies, Rose, 42 Studies, Polatchak, 12 Etudes for Clarinet, Mozart Concerto in A, solos by Jeanjean, contemporary solos, orchestral studies</td>
</tr>
<tr>
<td><strong>Bassoon</strong></td>
<td>101, 102</td>
<td>2 cr each</td>
<td>All scales and arpeggios, Weissenborn Op 8 Vol 1, Milde Studies, Galliard, 6 Sonatas for Bassoon</td>
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<tr>
<td></td>
<td>201, 202</td>
<td>2 cr each</td>
<td>Continue scales and arpeggios with various articulations, Weissenborn Op 8 Vol II, continue Milde Studies, Kavor Studies, Weinberger, Sonatine</td>
</tr>
<tr>
<td></td>
<td>301, 302</td>
<td>2 cr each</td>
<td>Milde Studies in All Keys, Jancourt, Grand Method Book II, Kavor Studies, solos by Marcello and Cools, reed making, orchestral studies</td>
</tr>
<tr>
<td></td>
<td>401, 402</td>
<td>2 cr each</td>
<td>Selected studies from Milde, Concert Studies Vol I, Telemann, Sonata, orchestral studies reed making</td>
</tr>
<tr>
<td><strong>Saxophone</strong></td>
<td>101, 102</td>
<td>2 cr each</td>
<td>All major and minor scales and arpeggios, Universal Method for Saxophone or equivalent material, Bassi-Iasilli, Concert Etudes, selected solos</td>
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<tr>
<td></td>
<td>201, 202</td>
<td>2 cr each</td>
<td>Continue scales and arpeggios with various articulations, Bassi-Iasilli, Concert Etudes, selected solos</td>
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<tr>
<td></td>
<td>301, 302</td>
<td>2 cr each</td>
<td>Mule, Scales and Arpeggios, Gatti-Iasilli, 35 Melodious Technical Exercises, pieces by Faure and Jeanjean</td>
</tr>
<tr>
<td></td>
<td>401, 402</td>
<td>2 cr each</td>
<td>Mule, Scales and Arpeggios, Gatti-Iasilli, 35 Melodious Technical Exercises, Labanchi-Iasilli, 33 Concert Etudes, Premier Solo de Concours by Pares, Moritz, Sonata for Saxophone, representative contemporary solos</td>
</tr>
<tr>
<td><strong>Trumpet</strong></td>
<td>101, 102</td>
<td>2 cr each</td>
<td>All scales and arpeggios Schlossberg, Daily Drills, Arban, Complete Method for Trumpet, selected short pieces</td>
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<tr>
<td></td>
<td>201, 202</td>
<td>2 cr each</td>
<td>All major and minor scales and arpeggios, Schlossberg, Daily Drills, Arban, Complete Method for Trumpet, Kreutzer, Ten Studies, Concerto by Grote, selected solos, band and orchestral studies</td>
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<tr>
<td></td>
<td>301, 302</td>
<td>2 cr each</td>
<td>Continue scales and arpeggios in various articulations, Schlossberg, Daily Drills, Concerto, Fifty Lessons, Brandt, Etudes for Trumpet, Bernstein, Rondo for Lifey, Two Pieces for Trumpet by Karpev</td>
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<tr>
<td></td>
<td>401, 402</td>
<td>2 cr each</td>
<td>Continue Schlossberg and Concone, Laurent, Etudes Practiques Book I and II, Herrig, 32 Etudes, Clarke solos, Mouquet, Legende Heroique, Balay, Petite Piece Concertante</td>
</tr>
<tr>
<td><strong>Trombone and Baritone Horn</strong></td>
<td>101, 102</td>
<td>2 cr each</td>
<td>Studies and exercises in tone production and flexibility by Shiner, Arban, Method for Trombone, major and minor scales through two octaves, selected solos</td>
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<tr>
<td></td>
<td>201, 202</td>
<td>2 cr each</td>
<td>All scales and arpeggios, continue drills and Arban Method for Trombone, selected studies from Camer, 170 Etudes, Study of single, double and triple tonguing, Pryor solos and other selected materials, band and orchestral studies</td>
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<tr>
<td></td>
<td>301, 302</td>
<td>2 cr each</td>
<td>Continue technical exercises, Stacey, Lip Flexibility, Rockit, Melodious Etudes Book I-II, Blume, Studies Book I, LaFosse, Sight Reading Studies, study of tenor clef, Croce-Spinelli, Solo de Concours, Alary, Contest Pieces, Morel, Piece in F minor</td>
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<tr>
<td>COURSE</td>
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<td><strong>401, 402</strong></td>
<td><strong>2 cr each</strong></td>
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<tr>
<td>Continue technical exercises. Stacey, Lip Flexibility, Kopprasch Book I-II, Rochut, Melodious Etudes Book III, Blazhevich, Clef Studies, study of bass trombone, Guilmant, Moreau Symphonique, Camara, Valse Petic, Ropartz, Andante and Allegro</td>
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**TUBA**

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<th>COURSE</th>
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<tr>
<td><strong>101, 102</strong></td>
<td><strong>2 cr each</strong></td>
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<tr>
<td>All scales and arpeggios, Arban Method for Trombone and Baritone, selected solo material</td>
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<th>COURSE</th>
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<tr>
<td><strong>201, 202</strong></td>
<td><strong>2 cr each</strong></td>
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<tr>
<td>All scales and arpeggios with various articulations, continue Arban, Bell, Foundations of Tuba and Sousaphone Playing, selected solos</td>
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<th>COURSE</th>
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<tr>
<td><strong>301, 302</strong></td>
<td><strong>2 cr each</strong></td>
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<tr>
<td>Continue scales and arpeggios, chromatic scales, Bell, Foundations of Tuba and Sousaphone Playing, Vandercook Etudes, Rochut, Melodious Etudes Book I, Blume Studies Book I, Tyrrell, Advanced Studies for the BB flat Tuba, selected solos, band and orchestra studies</td>
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**PERCUSSION**

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<th>COURSE</th>
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<tbody>
<tr>
<td><strong>101, 102</strong></td>
<td><strong>2 cr each</strong></td>
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<tr>
<td>Rudimentary snare drum technique, analysis of existing methods Elementary tympani technique, uses of tympani in classical literature, tuning</td>
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<tbody>
<tr>
<td><strong>201, 202</strong></td>
<td><strong>2 cr each</strong></td>
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<tr>
<td>Intermediate snare drum studies, elementary xylophone technique Intermediate tympani studies, orchestral literature Beethoven to Wagner Performance techniques of most commonly used equipment</td>
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<tbody>
<tr>
<td><strong>301, 302</strong></td>
<td><strong>2 cr each</strong></td>
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<tr>
<td>Use of tympani and percussion in late 19th and 20th century literature Orchestral studies in all instruments Examination of percussion ensemble materials, group instruction methods Selection and care of instruments for professional and school use Extension of mallet study</td>
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<th>COURSE</th>
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<tbody>
<tr>
<td><strong>401, 402</strong></td>
<td><strong>2 cr each</strong></td>
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<tr>
<td>Deployment of instruments in band and orchestra settings, conducting the percussion ensemble Review of teaching methods in basic techniques, the role of the percussion clinician Problems in writing and scoring for percussion, discussion of available materials and sources for solo performance</td>
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**NON-MUSIC MAJORS**

<table>
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<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td><strong>253 Visual Arts</strong></td>
<td><strong>3 cr</strong></td>
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<tr>
<td>Gives students a basic vocabulary in the visual arts (painting, sculpture, architecture, the graphic arts) and to make them conversant with the most important styles they will encounter During the course of the semester, the course will include several visits to museums and galleries in the Pittsburgh area</td>
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<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td><strong>254 Introduction to Music</strong></td>
<td><strong>3 cr</strong></td>
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<tr>
<td>Gives the non-musician a basic musical vocabulary as well as familiarity with various aspects of musical style The course is approached from the listener's point of view, with the ultimate goal of enhancing the layman's listening pleasure During the semester the class will attend several concerts and other musical events in the Pittsburgh area</td>
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**SCHOOL OF MUSIC**

<table>
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<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td><strong>321 Music for the Classroom Teacher</strong></td>
<td><strong>1-4 cr</strong></td>
</tr>
<tr>
<td>The aim of this course is to assist the student in gaining an appreciation of the importance of music in the lives of children, a knowledge of fundamental principles of instruction in music and a familiarity with the variety of musically enriching experiences</td>
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**SCIENCE**

<table>
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<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td><strong>191 Human Physiology</strong></td>
<td><strong>3 cr</strong></td>
</tr>
<tr>
<td>A study of the fundamental principles of human physiology as a basis for the understanding of artistic expression and music therapy</td>
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<th>COURSE</th>
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<tr>
<td><strong>491 Physical Science (Acoustics)</strong></td>
<td><strong>3 cr</strong></td>
</tr>
<tr>
<td>A course in the science of sound designed to give the student a knowledge of the basic principles of the nature of sound, its production and transmission Considerations are also given to the mechanism of hearing and the physical basis of harmony, scales, electronic recording, and reproduction of recorded sound</td>
<td></td>
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</tbody>
</table>

**GENERAL EDUCATION**

Descriptions of courses in English, modern languages, psychology, sociology, and education, required in the several curricula will be found in the College of Liberal Arts and Sciences and School of Education sections
School of Nursing
HISTORY

Since it is the policy of the University to establish its schools under control of an already established school, the School of Nursing was originally organized in 1935 as a unit in the College of Liberal Arts and Sciences. On March 15, 1937, the Department of Nursing Education was given the status of a separate school with a Dean in charge. On December 3, 1937, the State Board of Education of the Commonwealth of Pennsylvania approved the school and authorized Duquesne University to confer the degree of Bachelor of Science in Nursing and the degree of Bachelor of Science in Nursing Education upon graduates according to the appropriate curriculum. Previously, the School of Nursing offered two programs both leading to the degree of Bachelor of Science in Nursing. Since 1964, the School of Nursing offers one program for both general nursing students and registered nurse students in which they enroll for courses leading to the degree of Bachelor of Science in Nursing.

PHILOSOPHY

Nursing is a profession which focuses on the maintenance of health, the prevention of illness, and caring for individuals and families who need assistance in coping with their health problems.

Within nursing the professional practitioner utilizes scientific and humanistic theories and concepts in performance of the following skills: interpersonal, teaching, management, observing and recording, manual, and problem solving. These skills are necessary for the functioning of the professional nurse in assessing client's needs, prescribing and directing a workable plan of approaches to meet those needs, implementing the prescribed plan, collaborating and coordinating with the health team members, and evaluating the effectiveness of care.

The professional nurse is a creative innovator who finds satisfaction in giving service to others, who regularly evaluates self, and who plans for continual growth. The professional nurse should be educated in an institution of higher learning in a program which grants a baccalaureate degree in nursing.

The student is the focus of the curriculum and shares responsibility with the faculty for the creation of an environment conducive to individuality. Throughout the nursing curriculum, the faculty strives to facilitate the student's growing, learning, adapting, and becoming. Liberal arts courses in the humanities, natural sciences, and behavioral sciences not only aid in the student's development but also serve as a foundation for and are an integral part of the professional nursing curriculum. To assist the student's continuing development, provision is made for electives throughout the program.

Professional nursing courses focus on adaptation with the concepts of life continuum, intersubjectivity and individuality interwoven throughout. The student has opportunities to learn how one's development on the life continuum can be affected by health and illness and what can be done to aid a person and his family in the process of adaptation.

OBJECTIVES

The objectives of the program, designed to prepare students to assume the role of professional nurses in a variety of settings and also provide foundation for further study in nursing, are to:

1. Formulate a philosophy of life that reflects concern for self and others.
2. Synthesize a philosophy of professional nursing.
3. Actively participate within a variety of health care systems.
4. Contribute to nursing research as a means for furthering the profession of nursing.

ADMISSION REQUIREMENTS

The specific entrance requirements for admission are:

1. The applicant's high school curriculum must include a minimum of 16 units distributed as follows:
   - English: 4 units required
   - Social Studies: 3-4 units recommended
   - Language: 2 units recommended
   - Mathematics and Science: 6 units recommended (1 unit Chemistry and 1 unit Algebra required)

2. A candidate must have been graduated from an approved secondary school in the upper two-fifths of the class, and must have demonstrated exemplary personal conduct in the institution.
3. The primary consideration for admissions is the secondary school academic record. This is considered to be the most important criterion of success at Duquesne University. It is the desire of the Admissions Committee to admit those candidates who possess qualities of character and intellect and who show promise of development into useful and contributing citizens.
4. A candidate must present satisfactory scores on the required College Entrance Examination Board Scholastic Aptitude Test in accordance with the standards adhered to by the University.
5. All candidates are required to take the College Entrance Examination Board Achievement Tests in English Composition.

In specific instances, and at the discretion of the Committee on Admissions, the genuine equivalent of these requirements may be accepted in lieu of the foregoing precise requirements.

ADMISSION OF REGISTERED NURSE STUDENTS

Registered nurses who have completed a diploma or associate degree program in nursing who wish to pursue study for a bachelor's degree must follow general admission procedures. In addition, they should...
SCHOOL OF NURSING

182 DUQUESNE UNIVERSITY

1 Present evidence of registration as a professional nurse in one state or territory
   before admission or during the first semester of enrollment
2 Submit an official copy of school of nursing transcript
3 Submit an official copy of transcript from previous college or university
   attended, if applicable
4 Submit a recommendation for collegiate study from the director of nursing of
   the school of nursing from which the student was graduated or recommendation
   from present employer
5 Arrange for a personal interview with the Academic Advisor in the School of
   Nursing, if applicant resides within a reasonable distance

SECOND BACCALAUREATE DEGREE PROGRAM

Applicants holding a baccalaureate degree with a major other than nursing must
follow transfer student admission procedures (see page 8). In addition they must
1 Arrange for a personal interview with the Academic Advisor in the School of
   Nursing
2 Submit a letter to the Student Standing Committee of the School of Nursing,
   stating reason(s) for pursuing the baccalaureate degree in nursing

SPECIAL FEES

All figures are for one semester only. For yearly total, double amounts where
applicable

CHEMISTRY LABORATORY COURSES
Laboratory Fee $20

BIOLOGY LABORATORY COURSES
Laboratory Fee $20
   (One $5.00 breakage card a semester will cover laboratory courses in biology,
    chemistry and physics)

ANATOMY AND PHYSIOLOGY 209, 210
Laboratory Fee $20
Breakage Deposit $5

CHALLENGE EXAMINATIONS
   each credit hour $10
   (non-refundable)

MISCELLANEOUS COSTS
1 Uniforms, approximate total cost $50
2 Special health requirements
3 Books and miscellaneous supplies
4 Transportation to and from agencies, approximate cost $5 weekly
5 School of Nursing pin for graduation, approximate cost $15
6 Student Liability Insurance (Professional), $10.95 yearly

STUDENT ORGANIZATIONS

The nursing student is a member of the general student body and may select and
participate in any of the campus organizations. There are numerous social
sororities and organizations as well as professional organizations

DUQUESNE UNIVERSITY NURSES ASSOCIATION—DUNA is open to all
nursing students who are encouraged to participate through their class
organizations. Faculty moderators act as liaisons between the student
classes and faculty. Opportunities for the development of leadership qualities are
given. Through this organization, students are eligible to join SNAP—the Student
Nurse Association of Pennsylvania

ALPHA TAU DELTA is a national professional fraternity for persons in nursing
Theta Chapter was chartered on the Duquesne University campus on April 21,
1938. Only full-time students who have completed a minimum of one semester in
the School of Nursing with a cumulative average of 2.5 are eligible

HONOR AWARDS

In addition to graduation honors, these awards are presented at Honors Day.
The Mary W. Tobin Gold Medal and the Dean Johnson Memorial Medal are
awarded annually to two outstanding seniors chosen by the faculty for general excellence in nursing. The Mary W. Tobin Medal is sponsored by Theta Chapter of
Alpha Tau Delta National Professional Fraternity for persons in nursing

GRADUATION REQUIREMENTS

Specific requirements for the Bachelor of Science in Nursing degree are
1 Two courses in English and one course in speech
2 Four courses in philosophy and theology. One course in theology is required
   for Catholic students
3 Seven courses in the behavioral sciences including human development, principles of management, two or three courses in psychology and two or three courses
   in sociology
4 A minimum of 14 credits selected from chemistry, biology, microbiology, and/or physics
5 Nursing Sciences Anatomy and Physiology, Pathophysiology and Nutrition
6 Nursing Major Nursing 303, 305, 307, 401 and Nursing electives
Degree requirements must be completed within ten years after initial enrollment.
At the end of the ten-year period, the student's record is re-evaluated in terms of the
curriculum in effect at that time, and the student is advised of any additional re-
quirements for graduation. The responsibility for fulfilling degree requirements
rests with the student.
PROGRAM OF STUDY

The School of Nursing offers a program with a major in nursing leading to a baccalaureate degree to qualified high school graduates, registered nurses, and non-nursing baccalaureate degree graduates who wish to prepare themselves for professional responsibilities in beginning positions in nursing. The program includes four years of study, and is designed to provide the student with the knowledge and skills needed to function as a professional nurse generalist upon graduation. The foundations in general and professional education acquired in this program provide a basis for the graduate to progress to positions of increasing responsibility and to undertake graduate study.

The curriculum design is basically that of a professional education program. Selected courses in the humanities and the behavioral, natural, and social sciences provide the foundation for the nursing major. Professional nursing courses, which constitute the nursing major, include theory and practice in the nursing care of individuals and families. Learning opportunities are provided in the hospital, in the home, and in the community. To strengthen and enrich the personal and professional development of the student, courses in the liberal arts are taken throughout the program.

The faculty of the School of Nursing conduct all of the professional nursing courses and also guide and direct the clinical nursing learning experiences. Several hospitals and agencies cooperate with the School of Nursing to provide a wide selection of excellent clinical nursing practice. Some of these are Allegheny General Hospital, Central Medical Health Services, Mercy Hospital, St. Clair Memorial Hospital, Western Pennsylvania Hospital, St. Francis General Hospital, Leech Farm Veterans' Administration Hospital, North Hills Passavant Hospital, Pittsburgh Hospital Division of the Forbes Hospital System, the Visiting Nurse Association of Allegheny County, the Allegheny County Health Department, United Cerebral Palsy Association, and Home for Crippled Children.

Upon the successful completion of this program, graduates will be eligible to write the examination for licensure in the state in which they wish to practice.

The faculty reserves the right to make changes in the curriculum and program requirements which it believes are in keeping with the changing health needs of society and/or the best interests of the students and the School to maintain quality professional nursing education.

REGISTERED NURSES

Registered nurse students who are graduates of a diploma or associate degree program in nursing may receive credit for selected nursing courses depending on evaluation of the previous educational program and satisfactory achievement on challenge examinations offered by the School of Nursing. Non-nursing courses taken at another college or university may be considered for transfer of credit, subject to University policy regarding transfer students stated elsewhere in this catalog.

SUGGESTED CURRICULUM PLAN

Freshman Year

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<td>3 cr</td>
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Senior Year

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<tr>
<td><strong>15 cr</strong></td>
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Notes

To remain in good standing in the School of Nursing, the student must attain a minimum of a C grade in each clinical nursing course. A Pass-Fail grade is given in clinical practice. An F in either theory or clinical practice will result in an F grade for the course.

The School of Nursing faculty reserves the right to withdraw any student from the nursing major who, in its opinion, has not progressed satisfactorily in clinical practice, even though the quality point average meets required standards.
COURSE DESCRIPTIONS

Course descriptions for courses in liberal arts and sciences may be found in the College of Liberal Arts and Sciences section, pages 46 to 111.

209, 210 Anatomy and Physiology 4 cr each
A study of the normal human body structure and function. Laboratory includes physiological experiments, dissection of preserved and fresh specimens, and a study of microscopic slides. Lecture, four hours, Laboratory, three hours each semester.

211 Pathophysiology 3 cr
Introduction to the basic scientific concepts of the disease process. Lecture, three hours. Prerequisite: 209 or 210.

255 Nutrition 3 cr
Nutrition principles and their importance to all ages. Factors influencing food habits, exploration of ways in which nurses may help families and individuals apply nutrition facts for increased health and well-being. Recent research in relation to such national problems as heart disease, obesity, and increased life span. Lecture, three hours.

303 Commonalities in Nursing 9 cr
Introduction to the cognitive framework of the curriculum, provides opportunities for the student to apply the nursing process in caring for individuals and their families in the health continuum in a variety of settings. The concept of adaptation with the strands of intersubjectivity, individuality, and life continuum serve as the focus for the study of man and his environment as they relate to nursing. Lecture, four hours, Laboratory, 15 hours. Prerequisites: 209, 210, 211, 255.

305 Nursing and the Family I 9 cr
Designed to enable nursing students to utilize the nursing process in family situations involving the childbearing and childrearing years. Emphasis is placed on prevention of illness, promotion of health, and adaptation of family members to varying life experiences within the expanding family. Lecture, four hours, Laboratory, 15 hours. Prerequisite: 303.

307 Nursing and the Family II 9 cr
Provides nursing students with opportunities to apply the nursing process in caring for individuals and families encountering life altering situations. Emphasis is placed on not only the adaptation of each family member but also the role of the nurse in facilitating this adaptation to changing life situations in a stable and contracting family. Lecture, four hours, Recitation, one hour, Laboratory, 15 hours. Prerequisite: 303.

400's Nursing Electives 9 cr

401 Systematic Inquiry into Nursing 3 cr
Designed to assist participants to consume nursing research in a meaningful way and to provide them with opportunity to learn the multiple variables in a research situation. Learning opportunities invite participants to develop an informed stance toward nursing research and to evaluate the validity and applicability of findings for nursing practice. Lecture, three hours.
HISTORY

Plans for establishing a School of Pharmacy were instituted in 1911, when the charter of the University was amended and authority obtained to grant degrees in Pharmacy. On April 20, 1925, the final work of organizing the School of Pharmacy was completed. The first class was received September 21, 1925.

The Duquesne University School of Pharmacy is housed in Richard King Mellon Hall of Science whose design by master architect Mies van der Rohe won the "Laboratory of the Year" award for 1969 in the annual Industrial Research, Inc, survey of new science buildings across the country. The School's specialized facilities include the Hugh C. Muldoon Model Pharmacy, animal operating room, electronics laboratory equipped with individual kits, bioclinic laboratory, eight additional teaching laboratories, and a manufacturing pharmacy laboratory containing basic pharmaceutical manufacturing equipment and separate tableting and aerosol technology rooms.

PHILOSOPHY AND OBJECTIVES

The School of Pharmacy, as an integral part of the University, embodies as its own, the aims and objectives set forth by the University. Its primary purpose is to afford men and women with an education in the fields of Pharmacy and its allied sciences which will enable them to meet both the present and future demands of their chosen profession. Through a well-integrated curriculum which includes professional elective courses, laboratory work, careful supervision by experienced teachers, and coursework in the liberal and cultural areas, the School of Pharmacy seeks to develop the student both professionally and individually. The comprehensive and specialized nature of this curriculum offers the Pharmacy graduate a choice of occupations within the profession and its closely allied fields as well as an adequate foundation for the continuation of studies on a graduate level in one of many areas.

Within the profession of pharmacy, he may become a community pharmacist, hospital pharmacist, or a pharmacist in government service. Many pharmacists find employment as medical service representatives for drug manufacturers. Some enter the wholesale drug business and the pharmaceutical manufacturing industry. Graduates in pharmacy are exceptionally well-qualified to become agents for the enforcement of narcotic and pure food and drug laws. Many pharmacists find employment as chemists or biologists in industrial and research organizations in allied fields, others enter the profession of teaching. Additional study is required for some of these positions. A few pharmacists continue their study in other health professions leading to a second professional degree or an advanced degree in the basic pharmaceutical and medical sciences.

PROGRAMS

Bachelor of Science in Pharmacy

The School of Pharmacy offers a Bachelor of Science degree in Pharmacy upon completion of the undergraduate professional program. The first two years encompass many courses offered by the College of Liberal Arts and Sciences in addition to several professional courses. The latter three years of study are taught mainly by the pharmacy faculty, with electives being available from both that faculty and all other schools of the University. Students are enrolled in the School of Pharmacy for all years. Transfer students are enrolled according to qualifications up to the start of the third year of the five-year sequence. Legal requirements of all states are met with regard to graduation from an accredited college of pharmacy. Licensure in the several states may be acquired by meeting specific additional requirements of each particular state.

Curriculum

A minimum of 15 credits in the combined areas of humanities and social sciences is required for graduation from the School of Pharmacy (nine in the humanities and six in the social sciences, including economics). A three-credit course in theology which may be applied toward the humanities area is required for all Catholic students. A minimum of 160 credits is required for graduation.

The student is cautioned to seek regular advice from the faculty and to keep a record of credits earned and the calculated averages. The School assumes no responsibility for such errors appearing in student records which may prevent the student from being graduated.

The pharmacy curriculum has been designed to provide a sequence of courses leading to professional competence. The minimum time period in which this may be accomplished has been determined by the faculty to be three years of full-time residency. This residency requirement for the final years of the professional curriculum is in accordance with a policy statement ratified by the American Association of Colleges of Pharmacy and followed by all colleges of pharmacy in establishing minimum residency requirements, as well as guidelines for professional education.

The Graduate School of Liberal Arts and Sciences of Duquesne University offers programs through the School of Pharmacy leading to the Doctor of Philosophy degree in pharmaceutical chemistry, and Master of Science degree in the fields of pharmacy, pharmaceutical chemistry, and pharmacology-toxicology.

The School of Pharmacy directs the professional program leading to the Doctor of Pharmacy degree in Hospital Pharmacy. These graduates are qualified for placement in clinical pharmacy positions in hospitals across the nation.

Medical technologists work under the direction of a pathologist or clinical scientist. In the field of Medical Technology positions are available in hospitals and industrial laboratories preparing tissue samples and slides for microscopic study, taking blood samples, storing plasma, and keeping records of tests.

In the field of Radiological Health, positions of health physicist are available in hospitals and any laboratories and industrial facilities which use radioisotopes.
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THE DuQUESNE University SCHOOL OF PHARMACY

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### First Year

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### Fourth Year

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<td>21 Biopharmaceutics and Dosage Forms</td>
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<td>33 Pharmacology</td>
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<td>26 Natural Products</td>
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<td>27 Analytical Chemistry</td>
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<td>34 Pharmacology</td>
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<td>28 Organic Pharmaceutical Analysis</td>
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<td>Pharmacy Administration</td>
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* D — Didactic hours  L — Laboratory Hours  C — Credit hours

Minimum credits for B.S. in Pharmacy Degree: 160, sufficient elective courses must be taken to satisfy the minimum credit requirements
502—Pharmaceutical Formulation and Development
539—Bionucleonics
525—Electronics for Scientific Instrumentation

4 Radiopharmaceuticals
525—Electronics for Scientific Instrumentation
539—Bionucleonics
540—Advanced Bionucleonics
541-542—Radiological Health
543—Biostatistics and Epidemiology

5 Pre-Graduate Study
Students who elect this option must consult with the chairman of the department of their area of interest in order to select courses most adaptable to the program they desire to pursue.

Bachelor of Science in Medical Technology
This program, leading to the degree B.S. in Medical Technology, is a joint effort between Duquesne University and Mercy Hospital, Pittsburgh, Pa. The program involves completion of 125 credits, with 30 of the credits being taken in Mercy Hospital’s School of Medical Technology in the fourth year of the program. Graduates from the program are eligible for the National Examinations conducted by the Board of Registry of Medical Technologists.

The School of Medical Technology at Mercy Hospital is approved by the Board of Schools of Medical Technology which acts as adviser to the Council on Medical Education of the American Medical Association. It is responsible for establishing and maintaining high standards of education in A M A-approved schools of medical technology.

Students in the program enroll in the School of Pharmacy as medical technology majors. These students are advised through the office of the Dean of the School of Pharmacy.

Admission to the fourth year of the program will be on a competitive basis with these as the determining factors:
1. A student must have a quality point average of 2.5 in the sciences.
2. No student with a grade lower than C in any chemistry course will be considered for admission.
3. Written recommendations.
4. Personal interview with the Education Coordinator of Mercy School of Medical Technology.

Applications for entrance to the fourth year are to be made before October 31 of the third year. Information about applications is available from the School Office or the Education Coordinator for Medical Technology.

During the fourth year of the program, students will register and pay tuition to Duquesne University. They will be permitted to reside in the University dormitories and enjoy all of the privileges of Duquesne University students.

Failure in any of the major courses included in the fourth year will lead to immediate dismissal from the Mercy School of Medical Technology.

SCHOOL OF PHARMACY

Curriculum

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<thead>
<tr>
<th>First Year</th>
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<tr>
<td><strong>Fall Semester</strong></td>
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<td>101 English Composition</td>
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<td>105 Basic Math</td>
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<td>111 General Biology</td>
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<td>121 General Chemistry</td>
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<th><strong>Second Year</strong></th>
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<th><strong>Third Year</strong></th>
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<td><strong>Fall Semester</strong></td>
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<tr>
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<td>171 Anatomy and Physiology Laboratory</td>
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<tr>
<td>27 Analytical Chemistry Elective</td>
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| **Fourth Year** | | |
|-----------------|-----------------|
| **Fall Semester** | 61 Clinical Chemistry | 7 credits |
| | 62 Urinalysis | 2 credits |
| | 63 Hematology | 5 credits |
| | 64 Blood Banking | 3 credits |
| | 65 Bacteriology | 5 credits |
| | 66 Parasitology | 2 credits |

*D — Didactic hours  L — Laboratory hours  C — Credit hours
Immunology 2 credits
Mycology 1 credit
Virology 1 credit
Nuclear Pathology 2 credits

Total 30 credits

Bachelor of Science in Radiological Health

Since 1972 the School of Pharmacy has offered a four-year 6-credit program leading to a Bachelor of Science degree in Radiological Health. Graduates from the program qualify for positions of health physicist in any facilities using radioactive isotopes.

Students in the radiological health program enroll in the School of Pharmacy as radiological health majors. These students are advised through the office of the Dean of the School of Pharmacy.

Curriculum

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<td>215 Calculus III</td>
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Three credits in theology are required for all Catholic students. Non-Catholic students must choose a humanities elective.

* D — Didactic hours  L — Laboratory hours  C — Credit hours

ADMISSION

Students who plan to enter any of the programs offered by the School of Pharmacy are encouraged to meet with Dean of the school for a personal interview. Entrance requirements are listed under Admissions Policies in the General Information section of this catalog. Applications should be submitted as early in the year of matriculation as possible.

The National Pharmacy College Admissions Test (PCAT) may be taken by applicants. Results should be reported to the Admissions Office and to the School of Pharmacy. The test is not required for admission to the School, but the results are used by advisement personnel to assess the level of knowledge in pertinent areas related to the program. Superior performance in certain topics will alert the student to enroll for advanced placement examinations.

* D — Didactic hours  L — Laboratory Hours  C — Credit Hours
The School of Pharmacy admits students into each of the first three years of the pharmacy, medical technology and radiological health baccalaureate programs. Procedures for entrance are outlined under Application Procedures in the General Information section.

All transfer students must be interviewed by the Dean or Assistant Dean of the School of Pharmacy. Students intending to transfer into the School of Pharmacy must prepare themselves by completing the program of courses, or their equivalents, presented in the curricula of interest. Advisors at the School of Pharmacy are available to meet with students attending other institutions to suggest plans of study which will qualify them for future placement in the School's programs.

Pharmacy students in good standing at any accredited college of pharmacy and eligible to continue their studies at that institution may transfer to Duquesne University School of Pharmacy upon written recommendation of their Dean and fulfillment of all requirements for transfer students as determined by the Admissions Committee. In cases, transfer applicants must have been granted honorable dismissal from their previous institution.

Transfer pharmacy students must fulfill a residence requirement of one year or more depending on their sequence of professional courses. This sequence extends through a minimum of three academic years of residence in an accredited college of pharmacy. In extenuating circumstances and with the permission of the School of Pharmacy, a waiver of the three years of residence required by the American Association of Colleges of Pharmacy will be sought by the faculty on behalf of the student. Failure to request and obtain such a waiver requires the pharmacy students to complete a minimum of six semesters in residence as full-time students.

Advanced credit may be allowed for those courses which appear in the Duquesne curriculum. No credit is allowed in any subject in which a grade lower than C was earned or for a course not equivalent to one among the School's curricula. Transfer applicants must have completed a minimum of 30 credit hours for entrance into the second year and 60 credit hours for entrance into the third year.

Advanced standing is conditional until the student completes a minimum of one semester's work (16 semester hours). If the student's work proves unsatisfactory, the student will be requested to withdraw. Applicants who have completed advanced courses in high school are encouraged to take advanced placement tests as detailed under College Level Examination Program in the General Information section.

LABORATORY FEES

Required laboratory courses scheduled by all schools of the university are subject to fees as published. Pharmacy laboratories require a fee of $30 each a semester. Other courses offered in the program of medical technology and radiological health are subject to special fees. No laboratory fees are assessed for courses scheduled in the fourth year of the medical technology program.

PHARMACY ACTIVITIES FEE

Instituted by student request, this fee of $25 a semester covers such miscellaneous items as local and national Student American Pharmaceutical Association dues and journal subscription, laboratory jacket rental and laundry fees, class dues and support of the pharmacy student newsletter, *Phorum*, and travel expenses for one required field trip to a pharmaceutical manufacturing firm. Payment is made at registration each semester. This fee is assessed only to those students in the last three years of the pharmacy program.

REGULATIONS

Students in the School of Pharmacy are preparing themselves for entry into a respected health profession where the highest degree of character and sense of responsibility are basic requirements. As such, they are expected to conduct themselves, at all times, in a manner befitting this position and according honor to it. For these reasons, the School of Pharmacy insists on strict adherence to the following regulations.

1. **Class Attendance**

   Regular class attendance is normally essential for maximum educational advantage and is strongly encouraged. The responsibility for all course material rests wholly with the student. Under no circumstances will class attendance be used as the basis for altering a grade in a course. This principle shall not modify the prerogative of each instructor to establish policy for attendance at tests and examinations, deadlines for reports, and other specific school or course requirements.

   A student who is absent is expected to complete all of the work in the course. It is the student's responsibility to make up all assignments and to be familiar with any instructions which may be given in his absence.

2. **Academic Standards**

   All students who are admitted to the School of Pharmacy must maintain a 2.0 QPA (quality point average) in the required courses in the professional pharmacy curriculum, throughout the program. Students who do not achieve a 2.0 QPA by the end of the first professional year may be admitted to the second year on a probationary basis. No student will be admitted to the third, fourth, or fifth years of the program with less than a 2.0 QPA.

3. **Required Programs**

   Pharmacy students in the fourth year of the curriculum are required to participate in one industrial visit arranged by the School. The School of Pharmacy arranges for students to participate in a special course in surgical appliance fittings offered by a field representative of a manufacturer of such devices. The biennial programs are required for all pharmacy students in the last two years of the curriculum. Record of participation is made in the students' permanent files.
STUDENT ORGANIZATIONS

THE STUDENT AMERICAN PHARMACEUTICAL ASSOCIATION whose membership includes all pharmacy students registered in the last three years of the School of Pharmacy aims to promote their interests, scholastic and professional. Under its auspices, many worthwhile events are arranged during the school year. The executive committee meets regularly with the Dean and the faculty moderator to act as liaison between student and faculty. The annual membership fee includes one year's student membership to the American Pharmaceutical Association and a year's student membership to the American Pharmaceutical Association and a year's subscription to its Journal. Interested pharmacy students enrolled in their first and second years at the University are also eligible for membership.

THE ALPHA BETA CHAPTER OF RHO CHI, national pharmacy honor society at Duquesne University, was organized to promote the advancement of the pharmaceutical sciences. Pharmacy students who have completed three and one-half years of work at the University level and have achieved a B average are eligible for membership. A maximum of 20 per cent of the class enrollment may be admitted to membership. Doctor of pharmacy candidates are eligible under the same conditions. Faculty and graduate students in the pharmaceutical sciences may also be invited to join.

TAU CHAPTER OF LAMBDA KAPPA SIGMA, an international pharmaceutical fraternity for women, was established at Duquesne University in 1932. The organization numbers among its members some of the most outstanding women in pharmacy. Its purposes are to promote the profession of pharmacy and to create a center of culture and enjoyment for its members.

THE BETA GAMMA CHAPTER OF PHI DELTA CHI, an international professional pharmaceutical fraternity, was chartered at Duquesne University in 1960. The fraternity endeavors to integrate academic, spiritual and social activities and thereby foster the highest professional and personal ideals among its members. Membership is open to men students in pharmacy.

THE DELTA EPSILON CHAPTER OF KAPPA PSI PHARMACEUTICAL FRATERNITY was chartered in 1967. This international fraternity strives to develop industry, sobriety, and fellowship and to foster high ideals, scholarship, and pharmaceutical research while supporting all projects advancing the profession of pharmacy. Membership is open to men students in pharmacy.

CLASS ORGANIZATION Each of the five classes is an officially recognized organization in the School of Pharmacy. Each class elects its own officers and conducts such programs and affairs as its members deem desirable toward achieving its goals. All students are included in these organizations regardless of major curriculum.

HONOR AWARDS FOR GRADUATING STUDENTS

Allegheny Wholesale Drug Company Award Annually an award of $25 is presented to the graduate who has shown outstanding ability and interest in the field of pharmacognosy.

American Pharmaceutical Association Award A certificate of recognition is presented annually to the graduate who has made the most significant contribution to the Student American Pharmaceutical Association at Duquesne University.

Bernard and Blanche Schiller Award in the Humanities and Social Sciences An award of $25 is presented annually to the graduate who has demonstrated an understanding of the value of the humanities and social sciences in his development as a professional person. This award is to be used for the purchase of books on any aspect of the humanities in which the student is interested.

Mary McPartland Beck Award An award of $25 is presented annually to the graduate who has shown outstanding ability and interest in the clinical practice of pharmacy.

Bristol Award A copy of a standard reference book is awarded annually by the Bristol Laboratories, Inc., New York City, to the graduate who has in the opinion of the faculty attained unusual distinction in the work in pharmaceutical administration.

Faculty Award The faculty of the School of Pharmacy may present an appropriate award to an outstanding member of the graduating class who has displayed exceptional qualities of academic excellence and a QPA of over 3.75.

Galen Society Award The Galen Society of Pittsburgh annually offers two $25 awards to the two members of the graduating class who have achieved the highest standing in the departments of pharmacology and pharmaceutical chemistry.

Samuel W. Curtis Award An award of $25 is presented annually to the graduate who has shown outstanding ability and interest in the field of pharmaceuticals.

Johnson and Johnson Award A replica of a rare Revolutionary War Mortar and Pestle is awarded annually to an outstanding student of Pharmacy Administration.

Lilly Achievement Award A gold medal is presented annually to a member of the graduate class who has demonstrated superior scholastic and professional achievement as well as qualities of leadership.

Merck Sharp and Dohme Award Each year Merck and Company, Rahway, New Jersey, offers a set of valuable reference books to a member of the graduating class who attains the highest average in medicinal chemistry.

Revall Award The Rexall Drug Company of Los Angeles, California, annually awards a bronze mortar and pestle to a graduate who has demonstrated outstanding leadership and interest in the field of community pharmacy.

Rho Chi Award Alpha Chapter of Rho Chi awards annually a suitably inscribed key to the student who earns the highest general average in all subjects during the first two years of the pharmacy program. The award is presented at a meeting of the Student Chapter of the American Pharmaceutical Association.

James L. Strader Memorial Award Each year Mrs. Joan V. Ansberry and Marshall Goldstein, proprietors of the James L. Strader Pharmacy, Pittsburgh, present a stainless steel replica of the awardee's diploma to the graduating student who has demonstrated outstanding general intelligence and maturity in the opinion of the graduating class.

Student American Pharmaceutical Association Award An award of $5.00 is presented annually to the graduating student who has demonstrated through service, reporting and activity an avid interest in organization work.
GRADUATION REQUIREMENTS

A committee of the faculty will review the record of each candidate for graduation to ascertain full compliance with specific School of Pharmacy curriculum requirements and the general University Graduation Requirements, as stated on page 34 of this catalog. This committee will then recommend candidates for faculty certification for graduation or for remedial work to be fulfilled during the last semester of residence. Communications pertaining to this certification may be entered in the Office of the Dean.

STATE LICENSING

PENNSYLVANIA

A candidate for licensure as a Registered Pharmacist in the Commonwealth of Pennsylvania must meet the following requirements before he may be admitted to the licensing examinations which are conducted by the Pennsylvania State Board of Pharmacy.

1. Character—be of good moral character
2. Professional Training—have a degree in Pharmacy granted by a School or College of Pharmacy, which is accredited by the American Council on Pharmaceutical Education
3. High School Preparation—have a State Preliminary Certificate certifying to not less than four years of high school work, or the equivalent in approved subjects. The certificate must bear a date not later than November 1 of the year of matriculation.

As evidence of State approval, the candidate must present before November 1 of the year in which the third year of course work in Pharmacy is begun, a Pennsylvania State Preliminary Certificate issued by the Pennsylvania Department of Education at Harrisburg. Such certificates are granted, upon payment to the State of a five dollar fee, to candidates who have completed an approved four-year high school course. Full instructions for securing the certificate are provided through the Office of the Dean.

Specific information concerning practical experience requirements as well as all other requirements concerning licensure may be obtained from the State Board of Pharmacy, Department of State, Box 2649, 279 Boas Street, Harrisburg, Pennsylvania 17120.

STATES OTHER THAN PENNSYLVANIA

According to law, the licensing of an applicant seeking to become registered as a pharmacist is under the sole jurisdiction of the state in which he seeks to practice. Although the requirements for licensure in the Commonwealth of Pennsylvania are similar to those of other states, differences may exist. Space limitations preclude a complete listing of the requirements of other states and the District of Columbia here. The candidate for licensure in another state is advised to consult the Board of Pharmacy in that particular state for complete information.

PHARMACY CAREER GUIDANCE CENTER

A guidance center has been established within the School of Pharmacy to keep students informed about the latest career opportunities available to those possessing a pharmacy education and to attract high school and junior college students to the profession.

The Center consists of faculty members, School of Pharmacy alumni, and pharmacy practitioners. It provides upon request speakers for career day programs and information to high school counselors on all matters relating to a pharmacy education and career.

Pamphlets containing career information on pharmacy are also available through the Guidance Center. Inquiries should be directed to the Pharmacy Career Guidance Center, School of Pharmacy, Duquesne University, Pittsburgh, Pennsylvania 15219.

RESEARCH FOUNDATION

The Hugh C. Muldoon and Pharmacy Alumni Foundation of Duquesne University, established in 1950 to celebrate the twenty-fifth anniversary of the founding of the School of Pharmacy, is an increasingly valuable aid in helping to achieve the aims of the University and of the School of Pharmacy. The Foundation provides funds for improving the instructional and research facilities of the School, it assists in the advancement of pharmacy by supporting the training of undergraduate and graduate students in industrial and research procedures, it helps to extend the knowledge from research being conducted under the auspices of the School. Contributions are solicited from graduates and others interested in the work of the Foundation. They may be addressed in care of the School of Pharmacy.

COURSE DESCRIPTIONS

The courses of instruction are numbered in accordance with a plan uniform throughout the University.
Courses numbered 100 are Freshman courses, 200 Sophomore, 300 Junior, 400 Senior Courses numbered 10 through 39 reflect required courses in the professional curriculum Courses numbered 500 are graduate level courses in which qualified undergraduate students may be enrolled with the permission of the Dean of the Graduate School Credit for these courses cannot be used to satisfy requirements for a second degree.

Course descriptions for the liberal arts and science courses may be found in the section of this catalog under the heading College of Liberal Arts and Sciences and School of Business and Administration.

Department of Pharmaceutical Chemistry and Pharmacognosy

Chairman Mitchell L. Borke, Ph.D.
Associate Chairman Alvin M. Galsky, Ph.D.

1 Pharmaceutical Orientation 1 cr
Introduction to pharmacy Discussion of various phases of pharmacy and their relationship to the profession as a whole. Pharmaceutical organizations are discussed and evaluated. The pharmaceutical literature is discussed and a brief history of pharmacy is presented. Lecture, one hour.

11 Physical Pharmacy 4 cr
A course designed to acquaint the student with the theory upon which the principles and processes of pharmacy are based. The theories of emulsification, drug extraction, isometry, hydrogen ion concentration, nephology, mercurimetry, etc., are discussed and the instruments which are used in their measurements are described and utilized in the laboratory. Prerequisites: Mathematics 115 General physics, organic chemistry (concurrent registration in organic chemistry may be accepted). Lecture, three hours, Laboratory, four hours.

12 Physical Pharmacy 4 cr
A continuation of Physical Pharmacy 11. Prerequisite: Physical Pharmacy 11. Lecture, three hours, Laboratory, four hours.

14 Pharmaceutical Mathematics 3 cr
A course designed to familiarize the student with the mathematical problems and calculations encountered in pharmaceutical practice. Lecture, two hours, Recitation, one hour.

16 Biochemistry 4 cr
A general course in biochemistry. Chemistry of carbohydrates, lipids, and proteins is presented. Enzymes, vitamins, and hormones are discussed in relation to their roles in metabolism. Prerequisite: Organic Chemistry Lecture, three hours, Laboratory, three hours.

19 Electronics for Medical Technologists 4 cr
A course for science students who have little or no background in electronics but who need a working knowledge of electronic devices and circuitry. Principles of electronics, servomechanisms, operational amplifiers, and digital control problems are covered. Prerequisites: Calculus I, general physics. Class, three hours, Laboratory, four hours.

21 Biopharmaceutics and Dosage Forms 4 cr
A study of the pharmaceutical, physico-chemical, and biological factors which affect the absorption, availability, and distribution within the body of drugs from the various classes of dosage forms. Emphasis is placed on the formulation and evaluation of specific official and unofficial solid, semi-solid, liquid and gaseous dosage forms and the development of the skills necessary for their preparation. Prerequisite: Physical Pharmacy 12 Lecture, three hours, Laboratory, four hours.

22 Biopharmaceutics and Dosage Forms 4 cr
A continuation of Biopharmaceutics and Dosage Forms 21. Prerequisite: Biopharmaceutics and Dosage Forms 21. Lecture, three hours, Laboratory, four hours.

23 Medicinal Chemistry 3 cr
Relationship between chemical structure and the biological action of drug molecules. Emphasis is on underlying principles as well as on specific therapeutic agents. Organization is by pharmacological classification, with chemical properties relating to mechanism of action, stability, biodistribution and metabolism considered for each class. Lecture, three hours. Prerequisites: Physical Pharmacy 11, 12, or its equivalent.

24 Medicinal Chemistry 3 cr
A continuation of Medicinal Chemistry 23. Prerequisite: Medicinal Chemistry 23. Lecture, three hours.

27 Analytical Chemistry 4 cr
Rigorous training in stoichiometric relationships and in the application of analytical principles, with laboratory experience in the principal methods of gravimetric and volumetric analysis. Prerequisites: Physical Pharmacy 11, 12 or Physical Chemistry I Lecture, three hours, Laboratory, seven hours.

28 Organic Pharmaceutical Analysis 3 cr
A course devoted to the identification and determination of the relative amounts of active constituents in pharmaceutical and medicinal substances. Prerequisite: Analytical Chemistry Lecture, three hours, Laboratory elective four or eight hours for additional credits.

Department of Pharmacognosy

Chairman Norbert A. Pilewski, Ph.D.

26 Natural Products 4 cr
This course deals with the important medicinal agents which are derived from natural sources, chiefly from plants. Emphasis is placed on the medicinally important alkaloids, glycosides, and enzymes. The course includes a description of the natural source of the drug, its precise chemical nature, its pharmacological effect on the body, and its importance in medicine today. Prerequisite: Organic Chemistry Lecture, three hours, Laboratory, three hours.
35 Medical Microbiology
4 cr
This course covers the general characteristics and morphology of bacteria, the important staining techniques, methods of growing bacteria on artificial media, and testing the effects of chemotherapeutic agents on pathogenic bacteria. It includes discussions of the important bacterial diseases, their causes, symptoms, and treatments. It also includes a discussion of the medically important antibiotics, sulfas and nitrofurans. These chemotherapeutic agents are discussed from the standpoint of their chemical structure, their source, their effectiveness, and range against bacteria and their side effects. Lecture, three hours; Laboratory, three hours.

36 Public Health
3 cr
A discussion of Public Health measures such as immunization, water purification, sewage disposal, treatment of contaminated individuals and objects, control of rodents and insects, and the relationship of these to the spread of disease. The course also includes a comprehensive discussion of the important communicable diseases, chiefly those of viral, rickettsial, and fungal origin and the important human worm and amoebic infestations. Each disease is discussed from the standpoint of cause, symptoms, way in which it is spread, public health measures to be taken to prevent it and treatment. Lecture, three hours.

Department of Pharmacology-Toxicology

Chairman Gene A Riley, Ph D

2 Drug Abuse
1 cr
A course designed to present the pharmacological and toxicological properties of substances of abuse. The major classes of drugs are described with direct reference to toxic and adverse effects. The myths and misconceptions commonly attributed to some substances of abuse are clarified. The philosophy of the course is to present an objective picture of the "drug abuse era" in this country. The course is intended for all students beginning their collegiate studies. Admission to this course for students who have completed Pharmacology 33 or its equivalent is by approval of the instructor.

3 Basic Pharmacology
3 cr
A course dealing with the major classes of therapeutic agents, designed for students with a limited background in biological sciences. Drugs are considered from a "disease state" point of view and include basic mechanisms of action. Important drug interactions as they relate to patient care are included. Not open to Pharmacy Students. Prerequisites: Six credits of biological science, including physiology. Lecture, three hours.

4 Social Diseases
1 cr
A course covering the prevention, treatment, and social effects of venereal diseases. Awareness and common sense should be awakened in students by the course. Lecture, one hour a week. Open to students who have not completed Pharmacy 33.

17 Anatomy and Physiology
4 cr
A continuation of Anatomy and Physiology 17. Prerequisite: Anatomy and Physiology 17 and 20. Lecture, four hours.
providing pharmaceutical services to patients and to other members of the health team. Emphasis is placed on the use of modern medicinals in a variety of patient sociological and disease situations. Advanced teaching techniques utilizing case discussions, the computer and clinical interactions with patients requires the student to pool his background of social, physical and biological sciences in dealing with complications of modern drug therapy. Prerequisite: Biopharmaceutics and Dosage Forms 22. Lecture, three hours, Laboratory, six hours.

32 Professional and Clinical Practice 4 cr
A continuation of Professional and Clinical Practice 31. Prerequisite: Professional and Clinical Practice 31. Lecture, three hours, Laboratory, six hours.

Department of Medical Technology

Acting Director: Jeanne A Cooper, M D
Education Coordinator: Eileen Steele, M T (ASCP)

61 Clinical Chemistry 7 cr
A comprehensive study of the chemistry and metabolism of proteins, carbohydrates, lipids, and electrolyte, enzyme, and hormone systems as revealed by the various examinations performed on blood and other body fluids.

62 Urinalysis 2 cr
The study of renal function and its abnormalities as portrayed by alterations in the composition of the urine.

63 Hematology 5 cr
Detailed study of the anatomy and physiology of the blood and various laboratory methods used in establishing inherited or acquired abnormalities of blood or blood forming organs.

64 Blood Banking 3 cr
Essentials and importance of proper selection of blood for transfusion, pretesting methods, records, and administration of blood. Also included are studies of tests pertaining to isoemunization.

65 Bacteriology 5 cr
The study of clinical bacteriology, including culture methods, biochemical and immunological aspects of identification and the application of these to the disease state.

66 Parasitology 5 cr
Methods of identification of the various parasites infesting man, with detailed study of their morphology and habitat.

67 Immunology 2 cr
Study of the procedures used in analysis of immune mechanisms of the body and their application in disease processes.

Department of Radiological Health

Chairman: Mitchell L Borke, Ph D

51 Radiological Health Practice 4 cr
Students will be sent to a National Laboratory where they will have the opportunity to observe and participate in daily practical problems on radiation protection and to familiarize themselves with broader environmental health. Specific experience will be obtained in film badge processing and personnel monitoring, radio-chemical assays of biological materials, field surveying of chemical plant operations involving large quantities of fissile products and other radioactive materials, environmental monitoring practices, etc.

525 Electronics for Scientific Instrumentation 3 cr
A course for science students who have little or no background in electronics but who need a working knowledge of electronic devices and circuitry. Principles of electronics, servomechanisms, operational amplifiers, digital control problems. Prerequisites: Mathematics 115, Physics 212.

539 Bionucleonics 3 cr
A study of the fundamental techniques of manipulation and measurement of radioisotopes. Experiments performed individually by each student include measurement of radioactivity with G-M counters, flow counters, ionization chambers, proportional counters, crystal and liquid scintillators, study of the characteristics of radiation, gamma spectrometry, some applications of radioisotopes in pharmacy, chemistry, biology, etc. Prerequisites: Chemistry 121, 122, Physics 211, 212.

540 Advanced Bionucleonics 3 cr
A course devoted to the practical application of radioisotopes in chemistry and biology. The scope of the course includes neutron activation analysis, gamma spectrometry, tracer methods, and diagnostic procedures based on the use of radioisotopes. Prerequisite: Bionucleonics 539.
541, 542 Radiological Health I and II
4 cr each
A course designed to review the fundamental physical and biological principles of radiation protection, and the application of these principles to the measurement techniques, radiation hazard evaluation, radiation protection surveillance and administration. Scientific principles most applicable to solving problems of protecting humans from unacceptable levels of radiation exposure both in occupational and public environment are emphasized.

543 Biostatistics and Epidemiology
3 cr
A course designed to introduce the student to the fundamental statistical and epidemiologic methods utilized in the radiological and environmental health sciences, both in solving practical problems and in the design and interpretation of experimental and epidemiologic investigations.

RECOMMENDED PROFESSIONAL ELECTIVES
The following elective courses are taught in the School of Pharmacy and may be chosen by students who have met the prerequisites.

29 Emergency Treatment
3 cr
A lecture-demonstration course. The course teaches how to render first-aid cases of emergency while awaiting the arrival of a physician. Special emphasis is placed on emergencies which the pharmacist is most likely to be confronted with, e.g., epileptic seizures, heart attacks, fainting, diabetic coma, etc. Prerequisite: Anatomy and Physiology 17 and 18. Lecture, three hours, demonstrations included during lecture hours.

52 Hospital Pharmacy
3 cr
An introductory course designed to acquaint the student with the history, organization, and development of pharmacy practice in hospitals. The responsibilities of the pharmacy service in the modern hospital are discussed. Field trips to area hospitals complement the lecture material. Prerequisite: Physical Pharmacy 12. Lecture, three hours.

54 Sterilization and Parenteral Pharmaceuticals
1 cr
Sepsis and asepsis, sterilization, bacterial filtration, pyrogen and sterility testing. Class size limited to 18 students. Laboratory, 16 hours. Prerequisite: Physical Pharmacy 12.

53 Advanced Clinical Pharmacy
3 cr
A course designed to present the pharmacy student with actual patient-drug relationships as observed in the hospital. Lecture, one hour. Recitation, one hour. Laboratory, three-four hours.

56 Clinical Chemistry
3 cr
A course adapted to familiarize the student with qualitative and quantitative determinations of biochemical body constituents in order that the information may be utilized in clinical medicine. Prerequisite: Biochemistry 16. Lecture, three hours, Laboratory, four hours.

58 Community Practice I
3 cr
The course considers the principles and functions of management as applied to a community pharmacy operation so that the objectives of the pharmacist-manager are attained.

SCHOOL OF PHARMACY

with maximum efficiency. Prerequisite: Pharmacy Administration 37. Lecture, three hours.

59 Community Practice II
3 cr
The course concerns itself with the operational aspects of a community pharmacy with emphasis on the business or commercial matters pertinent to a successful operation. Prerequisite: Pharmacy Administration 37. Lecture, three hours.

Any course taught in the University may be chosen as an elective course by students who have met the prerequisites.

The following courses offered by the Graduate Department of Pharmaceutical Sciences are available to qualified upperclassmen in the School of Pharmacy:

501 Manufacturing Pharmacy
502 Pharmaceutical Formulation and Development
505 Methods of Pharmaceutical Control
510 Advanced Biopharmaceutics
523, 524 Medicinal Chemistry
525 Electronics for Scientific Instrumentation
539 Bionucleonics
540 Advanced Bionucleonics
541, 542 Radiological Health
543 Biostatistics and Epidemiology
560 Biosynthesis of Natural Products
561 General Toxicology
563 Pathology
567, 568 Clinical Pharmacology
569 Toxins: Their Chemistry, Biology and Toxicology

Descriptions of these courses may be found in the Graduate School Bulletin.

RECOMMENDED ELECTIVES FOR RADIOLOGICAL HEALTH
103 Logic
111 Introduction to Philosophy
102 Ethics
101 Introduction to Political Science
312 International Law and Organization
103 General Psychology I
101 Survey of Sociology
201, 202 English Literature
Reserve Officer
Training Corps
PROGRAMS
The Army and Air Force Reserve Officer Training Corps (ROTC) programs are offered to male and female students on a voluntary basis. Both offer two-year and four-year programs in elective subjects which may be taken in conjunction with the required course of study in most of the University’s undergraduate degree programs. Because failure to enroll in the four-year program at the beginning of the freshman year sometimes makes it difficult subsequently to elect and complete the program in phase with the academic major, the heads of the departments of Aerospace Studies (Air Force) and Military Science (Army) invite questions from and encourage immediate enrollment in the program by interested incoming freshmen. The basic requirement for entry into the two-year program is that the student have two academic years remaining, either at the undergraduate or graduate level, or a combination of the two. The two-year program and the last two years of the four-year program are identical in academic content.

RESERVE OFFICER TRAINING SCHOLARSHIPS
Army and Air Force ROTC offer a number of scholarships for cadets enrolled in both the four-year and two-year programs. These scholarships cover tuition, incidental fees, and a textbook allowance. For details see ROTC Scholarships in Financial Aid section, page 25.

AIR FORCE ROTC
The Air Force ROTC program is offered on a cross-enrollment basis at the University of Pittsburgh. Students interested in Air Force ROTC should contact the Department of Aerospace Studies, University of Pittsburgh for detailed information and enrollment procedures.

Department of Military Science

Department Head Colonel James R. Bambery, USA

FOUR-YEAR PROGRAM
All students in the four-year Military Science program are required to take 12 credits in Military Science and eight non-credit pre-professional laboratories. One three-credit course offered within the University’s curriculum approved by the PMS will be taken each academic year and one non-credit Military Science laboratory will be taken each semester. Basic Course students (first and second year) will select two of these courses.

MS-101 Modern American Military History 3 cr
Soc 195 The Military and Society 3 cr

TWO-YEAR PROGRAM
All students in the two-year program are required to successfully complete the six-week ROTC Basic Summer Camp prior to their last four semesters at the University and to fulfill all the requirements of the corresponding Advanced Course.

SAMPLE PROGRAM

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Spring Semester
Courses in Academic Major 12
MS-301 Defense Management 3
MS-006 Leadership Development 0
Summer
Attendance at 6-Week ROTC Advanced Camp 15

Senior Year
Fall Semester
Courses in Academic Major 15
MS-007 Leadership Development 0
Spring Semester
Courses in Academic Major 12
MS-401 Professional Seminar 3
MS-008 Leadership Development 0

COURSE DESCRIPTIONS

BASIC COURSE
MS-101 Modern American Military History 3 cr
The course will systematically study modern U.S. conflicts from 1914 to the present. The
course focuses on the political, social and economic conditions leading to each major con-
flict, evaluates in general terms the conduct of military operations, and assesses the im-
pact of the conflict upon the nation. Special emphasis is placed upon the role of the U.S.
as a world leader, modernization of the Armed Forces, military-business relationships,
selective service, and public opinion.

Soc 195 The Military and Society 3 cr
To relate to the student the military's social processes and organizational setting. To treat
the military profession as an object of social inquiry to enable the student to gain a fuller
and more accurate assessment of the military. Furthermore, to attempt to present the
military as objectively as possible. In addition, the fundamental changes that the
American military has undergone in the 1960's and 1970's will be presented and how these
changes relate to the civilian environment. Prerequisite: Soc 101

Pol Sci 215 National Strategy 3 cr
In examining national security strategy, analysis will address such independent variables
as qualitative and quantitative power factors, perceptions, physical and subjective
bargaining capability, and the external and internal environment. Attention is focused
also on the perceived institutional role of the military and its impact on the evolution
of strategy with particular emphasis placed on the national strategies of the United States in
the post World War II era.

ADVANCED COURSE
MS-301 Defense Management 3 cr
This course will examine the defense structure as a hybrid organization responsible to and

dependent upon two opposing segments of American society. 1) Elected and appointed
officials 2) Representatives from private enterprise. This unique interaction provides
added dimension to organizational theory, motivation, communication, and related
management practices.

MS-401 Professional Seminar 3 cr
To relate to the student facts concerning Army Career Development, organization and
traditions, which he should know prior to Active Duty specifically those facts which he
will receive little or no orientation during his basic officer course. To give the student in-
formation concerning the establishment of a financial plan for himself and his family,
whether in the Army or in civilian life. Furthermore, to give the student an orientation on
the other services. In addition, the student will have a chance to broaden his knowledge
on current military and civilian affairs by researching and presenting certain topics out-
lined by the course.

PRE-PROFESSIONAL LABORATORIES  Non-Credit
MS-001, 002 Leadership Development
MS-003, 004 Leadership Development
MS-005, 006 Leadership Development
MS-007, 008 Leadership Development

ROTC FLIGHT TRAINING
Army ROTC Flight Instruction is offered to students in the second year of the Ad-
vanced Course. It is an FAA approved flight program consisting of 35 hours of
ground instruction and 36 hours of in-flight training. Successful completion of the
course leads to a private pilot's license. The course is free of charge to students
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Patricia Smith Ingram
Associate Professor in Art Division, Department of Classics
B A , A M , Oberlin College
Jerome Edward Janssen
Associate Professor of History
B A , St. Norbert College
M A , University of Wisconsin
Peter R Johnson
Lecturer in Speech
B S , Northern Illinois University
M S , Ph D , University of Pittsburgh
College of Liberal Arts and Sciences

James J. Johnston, Jr
Lecturer in Speech
B.A., University of Pittsburgh

Nancy C. Jones
Associate Professor of Journalism
B.A., University of Pittsburgh
M.S., Northwestern University
Ph.D., University of Missouri

Chester A. Jurczak
Professor of Sociology and Department Chairman
B.A., St. Mary's College
M.A., Fordham University
Ph.D., University of Pittsburgh

Joseph J. Keenan
Associate Professor of English
B.A., M.A., Duquesne University
Ph.D., University of Wisconsin

Donald H. Kellander
Assistant Professor of French
B.A., M.A., Pennsylvania State University

Tatiana Sokolova Kelly
Associate Professor of Russian
B.A., University of Pittsburgh
M.A., Middlebury College

Rev. Charles D. Keyes
Associate Professor of Philosophy
B.A., University of Oklahoma
B.D., S.T.M., Seabury-Western Theological Seminary
M.A., University of Toronto
Th.D., Trinity College, Toronto
Ph.D., Duquesne University

Mark King
Assistant Professor of Psychology
B.A., University of Maryland
M.A., University of Connecticut
Ph.D., Iowa State University

Emma Kirk
Assistant Professor of Classics
B.A., Barnard College
M.A., Bryn Mawr College

Richard T. Knowles
Associate Professor of Psychology

B.A., M.S., Fordham University
Ph.D., Purdue University

Carl Kohlman
Lecturer in History
B.A., M.A., Duquesne University

Andrew J. Kozora
Professor Emeritus of Physics
B.S., M.S., Duquesne University

Paul Krakowski
Professor of Journalism
B.A., Westminster College
M.A., University of Wisconsin

Very Rev. Donald W. Kraus
A.B., M.A., St. Vincent College
M.A., Duquesne University
Ph.D., St. Louis University
S.T.L., S.T.D., Angelicum University

Michael Kupersmann
Assistant Professor of Sociology
A.B., M.A., Kent State University

Albert C. Labrolo
Associate Professor of English
B.Ed., Duquesne University
M.A.T., Columbia University
M.A., Ph.D., University of Virginia

Rosaline H. Lee
Assistant Professor of Mathematics
B.S., Webster College
M.S., University of Michigan

Rev. Henry J. Lemmens C.S.Sp
Professor of German
B.S., Knocksteden Germany
M.A., University of Pittsburgh
Ph.D., University of Cincinnati

Norman C. Li
Professor of Chemistry
B.S., Kenyon College
M.S., University of Michigan
Ph.D., University of Wisconsin

Pei-Tung Lu
Professor of Biology
B.S., University of Shanghai, China
M.S., Boston University
Ph.D., Catholic University of America

Administration and Faculty

Charles A. Loch
Assistant Professor of Mathematics
B.A., M.A., Duquesne University

Carla E. Lucente
Instructor in Spanish
B.A., M.A., Duquesne University

James G. Lydon
Professor of History
B.A., Harvard University
M.A., Boston University
M.A., Ph.D., Columbia University

Robert E. Madden
Instructor in Philosophy
B.S., St. Joseph's College
M.A., Villanova University
Ph.D., Duquesne University

Charles D. Maes
Assistant Professor of Psychology
B.A., University of Denver
M.S.W., Tulane University

Anne M. Massen
Assistant Professor of German
B.A., Columbia University
M.A., University of Illinois

Rev. Francis X. Malinowski, C.S.Sp
Assistant Professor of Theology
B.A., St. Mary's Seminary
B.S., Th., Fribourg University, Switzerland
Ph.D., Duke University

William Ewald Markus
Assistant Professor of Political Science
B.A., Harvard University
M.Ed., University of Pittsburgh

Paul Tyler Mason
Professor of History
B.S., M.A., Ph.D., St. Louis University

Cornelius S. McCarthy
Professor of Journalism and Department Chairman
B.S., Ed M., Boston University

James A. McCulloch
Professor of Classics and Dean of the College of Liberal Arts and Sciences
B.A., Duquesne University
M.Litt., Ph.D., University of Pittsburgh

Robert G. McDermott
Associate Professor of Mathematics and Department Chairman
B.S., Ph.D., University of Pittsburgh

Scott P. McPherson
Assistant Professor of Anthropology and Sociology
B.A., Roosevelt University
M.A., University of Chicago

Willard M. Mecklenburg
Associate Professor of Journalism
B.A., Hamline University
B.D., Garrett Theological Seminary
M.S.J., Northwestern University

Samuel S. Meli
Professor of Speech, Communication and Theatre

Helena A. Miller
Professor of Biology
B.A., B.S.Ed., M.S., Ohio State University
Ph.D., Radcliffe College, Harvard University

Lois Misko
Assistant Professor of French
B.A., M.A., University of Pittsburgh

Robert E. Mitchell
Professor of English
B.A., Miami University
M.A., Duke University
M.A., Ph.D., Harvard University

Joseph R. Morice
Professor of History
B.A., LaSalle College
M.A., Fordham University
M.Litt., Ph.D., University of Pittsburgh

Edward F. Munson, Captian, USA
Lecturer in Sociology
B.A., M.A., Duquesne University

Rev. Edward L. Murray, C.S.Sp
Associate Professor of Psychology and Department Chairman
B.A., M.A., St. Vincent College
M.A., Ph.D., Duquesne University
George F. Provost, Jr.
Professor of English
B.S., Ph.D., Louisiana State University
M.A., University of Oregon

Peter A. Puccetti
Associate Professor of Philosophy
B.A., M.Ed., Duquesne University

Eileen C. Ryan
Associate Professor of Biology
B.S., M.S., University of Oklahoma
Ph.D., University of Wisconsin

Constance Deucher Ramirez
Instructor in English
B.A., Duquesne University
M.A., University of North Carolina

J. Roland Ramirez
Professor of Philosophy
B.A., University of Notre Dame
Licentiate, Le Saulchoir, Etiolles, France
Ph.D., Catholic University of Paris

T. Frederick Remington
Lecturer in Journalism
B.A., Colgate University

William Russell Robinson
Lecturer in Political Science
B.A., Ohio State University

Eva Cappellanti Robotti
Assistant Professor of Speech and Department Chairman
A.B., M.A., West Virginia University

Herschel Sacks
Assistant Professor of Mathematics
B.S., Ph.D., University of Pittsburgh
M.A., Yeshiva University

Marc Cuccone Sakmar
Instructor in Spanish
A.B., Geneva College
M.A., Western Reserve University

Rev. George Edward Saladino
A.B., St. Vincent College
S.T.L., Gregorian University
S.S.L., Pontifical Biblical Institute

John C. Salter
Professor of Philosophy
B.A., University of Arkansas
M.A., Ph.D., Tulane University

John D. Scanlon
Associate Professor of Philosophy

Paul Neumarkt
Associate Professor of Modern Languages
B.A., Brooklyn College,
City University of New York
M.A., Ph.D., New York University

Dale R. Newman
Lecturer in Speech
A.B., University of Pittsburgh

Reginald A. Ney
Instructor in Physics
B.S., Duquesne University

Jerome L. Niedermeier
Assistant Professor of English
B.A., University of Pittsburgh
M.A., Ph.D., Duquesne University

John Ope, Jr.
Professor of History
B.A., DePauw University
B.D., Union Theological Seminary
M.A., Ph.D., University of Chicago

Margaret Heyle Parker
Assistant Professor of English
B.Ed., M.A., Duquesne University

Manuel P. Perlas
Assistant Professor of Math
A.B., Ateneo de Manila University, Philippines
M.S., Ph.D., Carnegie-Mellon University

Ann C. Peterson
Lecturer in Art Division, Department of Classics
B.A., M.A., University of Pittsburgh

Herbert H. Petig
Professor of English Philology
A.B., Transylvania College
M.A., University of Kentucky
Ph.D., Western Reserve University

Noel A. Plummer
Adjunct Professor of Psychology
B.S., Juniata College
M.S., University of Miami
Ph.D., University of Florida

George F. Provost, Jr.
Professor of English
B.S., Ph.D., Louisiana State University
M.A., University of Oregon

Peter A. Puccetti
Associate Professor of Philosophy
B.A., M.Ed., Duquesne University

Eileen C. Ryan
Associate Professor of Biology
B.S., M.S., University of Oklahoma
Ph.D., University of Wisconsin

Constance Deucher Ramirez
Instructor in English
B.A., Duquesne University
M.A., University of North Carolina

J. Roland Ramirez
Professor of Philosophy
B.A., University of Notre Dame
Licentiate, Le Saulchoir, Etiolles, France
Ph.D., Catholic University of Paris

T. Frederick Remington
Lecturer in Journalism
B.A., Colgate University

William Russell Robinson
Lecturer in Political Science
B.A., Ohio State University

Eva Cappellanti Robotti
Assistant Professor of Speech and Department Chairman
A.B., M.A., West Virginia University

Herschel Sacks
Assistant Professor of Mathematics
B.S., Ph.D., University of Pittsburgh
M.A., Yeshiva University

Marc Cuccone Sakmar
Instructor in Spanish
A.B., Geneva College
M.A., Western Reserve University

Rev. George Edward Saladino
A.B., St. Vincent College
S.T.L., Gregorian University
S.S.L., Pontifical Biblical Institute

John C. Salter
Professor of Philosophy
B.A., University of Arkansas
M.A., Ph.D., Tulane University

John D. Scanlon
Associate Professor of Philosophy

B.A., St. Mary's Seminary
M.A., University of Detroit
Ph.D., Tulane University

Marilyn Schaub
Associate Professor of History
B.A., Rosary College
Ph.D., University of Fribourg

Rev. Henry S. Schomberg, C.S.Sp
Assistant Professor of Classics
B.D., St. Mary's Seminary
M.A., Duquesne University
M.A., University of Pennsylvania

Kurt C. Schreiber
Professor of Chemistry
B.S., City College of New York
A.M., Ph.D., Columbia University

Reiner Schurmann
Assistant Professor of Philosophy
B.A., M.A. Le Saulchoir, France
M.A., Paris Institute of Political Studies
Ph.D., University of Paris, Sorbonne

Rev. Andre L. Schuwer, O.F.M
Professor of Philosophy and Department Chairman
B.Ph., State University of Amsterdam
Licentiate, Ph.D., University of Louvain

Charles F. Sebesta
Professor of Mathematics
A.B., M.A., Ph.D., University of Pittsburgh

Emmanuel I. Silliman
Professor of Biology
B.S., Bucknell University
M.A., Ph.D., University of Michigan

Walter S. Skinner
Professor of Physics and Department Chairman
B.S., Monmouth College
M.S., Lehigh University

Eugenia M. Skwarecki
Associate Professor of French and Italian
Doctor of Modern Languages and Literature, University of Turin, Italy

John W. Smeltz
Instructor in English
B.A., M.A., Duquesne University

F. Michael Smith
Assistant Professor of Speech
B.A., University of Pittsburgh
M.A., University of Georgia

Marten D. Snyder
Associate Professor of Classics
A.B., Loyola College, Baltimore
M.A., Ph.D., Catholic University of America

Rev. David L. Smith, C.S.Sp
Associate Professor of Psychology
B.A., St. Mary's Seminary
S.T.L., University of Fribourg
M.S., Duquesne University
Ph.D., University of Montreal

Omar W. Steward
Professor of Chemistry
B.S., University of Delaware
Ph.D., Pennsylvania State University

Michael W. Strasser
Professor of Philosophy
B.S., St. Louis University
M.A., Ph.D., University of Toronto

Tata Subhas
Associate Professor of Biology
B.Sc., Utkal University, India
Bachelor of Veterinary Science, University of Madras, India
M.S., Utah State University
Ph.D., University of Georgia

Rev. Edmund R. Supple, C.S.Sp
Associate Professor of Theology
B.A., St. Mary's Senior Scholasticate
S.T.L., Gregorian University, Rome, Italy

Kathleen A. Taylor
Assistant Professor of Mathematics
B.A., University of Dayton
M.S., Ph.D., Michigan State University

Richard H. Thanes
Instructor in Speech
B.A., Southwestern-at-Memphis
M.Div., Pittsburgh Theological Seminary

Steven P. Thomas
Assistant Professor of Biology

ADMINISTRATION AND FACULTY

B.A., St. Mary's Seminary
M.A., University of Detroit
Ph.D., Tulane University

Marilyn Schaub
Associate Professor of Theology
B.A., Rosary College
Ph.D., University of Fribourg

Rev. Henry S. Schomberg, C.S.Sp
Assistant Professor of Classics
B.D., St. Mary's Seminary
M.A., Duquesne University
M.A., University of Pennsylvania

Kurt C. Schreiber
Professor of Chemistry
B.S., City College of New York
A.M., Ph.D., Columbia University

Rev. Henry S. Schomberg, C.S.Sp
Assistant Professor of Philosophy
B.A., M.A. Le Saulchoir, France
M.A., Paris Institute of Political Studies
Ph.D., University of Paris, Sorbonne

Rev. Andre L. Schuwer, O.F.M
Professor of Philosophy and Department Chairman
B.Ph., State University of Amsterdam
Licentiate, Ph.D., University of Louvain

Charles F. Sebesta
Professor of Mathematics
A.B., M.A., Ph.D., University of Pittsburgh

Emmanuel I. Silliman
Professor of Biology
B.S., Bucknell University
M.A., Ph.D., University of Michigan

Walter S. Skinner
Professor of Physics and Department Chairman
B.S., Monmouth College
M.S., Lehigh University

Eugenia M. Skwarecki
Associate Professor of French and Italian
Doctor of Modern Languages and Literature, University of Turin, Italy

John W. Smeltz
Instructor in English
B.A., M.A., Duquesne University

Michael W. Strasser
Professor of Philosophy
B.S., St. Louis University
M.A., Ph.D., University of Toronto

Tata Subhas
Associate Professor of Biology
B.Sc., Utkal University, India
Bachelor of Veterinary Science, University of Madras, India
M.S., Utah State University
Ph.D., University of Georgia

Rev. Edmund R. Supple, C.S.Sp
Associate Professor of Theology
B.A., St. Mary's Senior Scholasticate
S.T.L., Gregorian University, Rome, Italy

Kathleen A. Taylor
Assistant Professor of Mathematics
B.A., University of Dayton
M.S., Ph.D., Michigan State University

Richard H. Thanes
Instructor in Speech
B.A., Southwestern-at-Memphis
M.Div., Pittsburgh Theological Seminary

Steven P. Thomas
Assistant Professor of Biology
Jin Tsai Wang

Rev. Steven Bela Vardy

Ronald Rolf H. Von Eckartsberg

Rev. Vladimir N. Vanek

Elfred Toney

C. Donnell Turner

Ronald S. Vallee

Rev. Vladimir G. Vanek

B. A., Pennsylvania State University
M.A., Ph.D., Indiana University

Frank J. Thornton

Associate Professor of Speech, Communication and Theatre

B. S., M. A., Villanova University

Samuel J. Tindall, Jr.

Associate Professor of English

A. B., Columbia University
M. A., Ph. D., University of South Carolina

M. S., Ph.D., University of Missouri

Ronald S. Vallee

Assistant Professor of Psychology

B. A., Carnegie-Mellon University
M. S., Ph. D., University of Pittsburgh

Rev. Vladimir G. Vanek

Associate Professor of Theology

Ph. L., Angelicum
S.T.D., Gregorian University
Bachelor in Eastern Christian Theology, Pontifical Institute Orientale

Steven Bela Vardy

Professor of History

B. S., John Carroll University
M. A., Ph. D., Indiana University

Rolf H. Von Eckartsberg

Associate Professor of Psychology

A. B., Dartmouth College
M. A., Ph. D., Harvard University

Rev. J. Gerald Wahb, C. S. Sp

B. A., St. Mary's Seminary
Ph. B., Catholic University of Louvain
M. A., Duquesne University
Ph. D., University of Montreal

Jin Tsai Wang

Assistant Professor of Chemistry

B. S., Oregon State University

M. S., Ph.D., Carnegie-Mellon University

Harold Webb, Jr.

Professor of Political Science

B. A., M.A. University of Pennsylvania
Ph. D., Brown University

Bernard J. Weiss

Associate Professor of History

B. A., Ph. D., University of Illinois
M. A., University of Chicago

Imre E. Wessler

Associate Professor of Sociology

B. A., St. Lawrence University
M. A., George Washington University
Ph. D., New York University

Kenneth R. Whippa

Assistant Professor of Sociology

A. B., University of Notre Dame
M. A., Syracuse University

Marsha Nye Woot

Assistant Professor of Political Science

B. A., Mary Baldwin College
M. A., American University
Ph. D., University of Illinois

Frank T. Zhon

Associate Professor of English

B. A., M. A., Duquesne University
Ph. D., University of Pittsburgh

SEMINAR ADVISORS

Byzantine Catholic Seminary of Sts. Cyril and Methodius
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St. Paul Seminary
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James F. Acklin
Associate Professor of Accounting
B. S., M. A., Duquesne University
C. P. A., Pennsylvania

Glen Beeson
Associate Professor of Economics
B. A., West Virginia Wesleyan
M. A., Ph. D., University of Pittsburgh

Richard Bond
Assistant Professor of Economics
B. A., Boston College
Ph. D., University of Maryland

Robert G. Borman
Associate Professor of Accounting and Chairman, Division of Quantitative Sciences
B. S., Duquesne University
M. B., University of Pittsburgh
C. P. A., Pennsylvania

William H. Carlson
Assistant Professor of Finance
B. C. E., M. S., Carnegie-Mellon University

William P. Caywood
Associate Professor of Analytic Methods
B. S., M. S., Ph. D., Carnegie-Mellon University

Clarence I. Jones
Associate Professor of Analytic Methods
B. S. E. E., University of California
M. S. E. E., West Virginia University
Ph. D., Carnegie-Mellon University

Blair J. Kolasa
Professor of Behavioral Sciences and Dean of the School of Business and Administration
B. S., Allegheny College

Dean
Assistant Dean for Administration

Lee Glick
Associate Professor of Economics
B. A., M. A., M. Litt., Ph. D., University of Pittsburgh

Geza Grosschmid
Professor of Economics
J. U. D., University of Pannonian Peter, Budapest

Serge Grosset
Professor of International Business and Chairman, Division of Behavioral Sciences
Licentae in Sciences Commerciales, Doctorat en Sciences Economiques, University of Geneva

James R. Hayes
Instructor
B. A., St. Vincent College
M. B. A., Duquesne University
C. D. P.

Thomas J. Hogan
Associate Professor of Analytic Methods
B. A., M. S., Duquesne University

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School of Education

ADMINISTRATION
Helen M Kleye, Ph.D
Rev Louis F Dolan, C.S.Sp., Ph.D
Leo F Semes

FACULTY
V Robert Agostino
Assistant Professor of Education
B.S., M.S., Duquesne University
Ph.D., University of Pittsburgh

William W W. Cadogan
Professor of Education
B.S., M.A., M.Ed., Duquesne University
Ed.D., University of Pittsburgh

Bruno A Castile
Professor of Education
B.S., Slippery Rock State College
M.S., Ed.D., University of Pittsburgh

Dolores A Cobucci
Assistant Professor of Education
B.S., University of Houston
M.Ed., Duquesne University
Ph.D., University of Pittsburgh
SCHOOL OF EDUCATION

Coordinator, Undergraduate Education, Director of Student Teaching
B.S., Lock Haven State College
M.Ed., Ed.D., Pennsylvania State University

Joseph F. Maola
Assistant Professor of Education
B.A., M.Ed., Duquesne University
M.A., Indiana University of Pennsylvania
Ph.D., University of Akron

Michael F. Moran
Associate Professor of Education
B.S., Shippensburg State College
M.Ed., Pennsylvania State University
M.A., Michigan State University
Ph.D., University of Pittsburgh

Kathleen A. Neumont
Assistant Professor of Education
B.S., M.S., Duquesne University

Frank N. Ribich
Assistant Professor of Education
B.Ed., M.Ed., Duquesne University
Ed.D., Pennsylvania State University

Alfonso A. Rizzo
Associate Professor of Education
B.S., Massachusetts State College
M.S., Springfield College
Ph.D., University of Connecticut

Glora M. Rocereto
Associate Professor of Education
B.S., Indiana University of Pennsylvania
M.S., Duquesne University
Graduate Study, University of Pittsburgh

Leo F. Semes
Assistant Professor of Education, Assistant to the Dean
B.S., Duquesne University
M.Ed., University of Pittsburgh

C. Arthur Sherman
Assistant Professor of Education
B.S., Slippery Rock State College
M.Ed., Ed.S., University of Pittsburgh

Theodora A. Siedle
Assistant Professor of Education

ADMINISTRATION AND FACULTY

B.S., Allegheny College
M.A., Ph.D., University of Pittsburgh

J. Bernard Smith
Assistant Professor of Education
B.S., M.Ed., Duquesne University
Doctoral Studies, University of Pittsburgh

LECTURERS

Maureen Sullivan
Assistant Professor of Education
M.S., Duquesne University
Dalcroze School of Music

Jacqueline S. Jablonski
B.S., Seton Hill College
M.A., Duquesne University

Joseph A. Mascetta
B.S., University of Pittsburgh
M.S. in Ed., University of Pennsylvania
Certificate of Advanced Study in Education, Harvard University

Charles L. Winek
B.S. (Pharmacy), M.S., Duquesne University
Ph.D., Ohio State University

The School of Music

ADMINISTRATION

Robert F. Egan, Ph.D
Gerald F. Kennan, Ph.D
Robert Shankovich, M.M

FACULTY

Susan Bennett
Teacher of Voice
B.M., University of Houston
M.M., Duquesne University

Janko Bezec
Visiting Professor,
Tamburitza Institute of Folk Arts
M.A., Academy of Music

Francis X. Klevle
Graduate Study, University of Pittsburgh

Ljubljana, Yugoslavia
D.M.S., University of Ljubljana

Bernard Cerilli
Teacher of Clarinet
Clarinetist, Pittsburgh Symphony

William V. Clark
Teacher of Flute
SCHOOL OF MUSIC

B S., M S., Juilliard School of Music
Principal Oboe, Pittsburgh Symphony

Bernard Z. Goldberg
Teacher of Flute and Chamber Music
Diploma in Flute, Juilliard School of Music
Pupil of Diran Alexanian, Marcel Moyse, Georges Barrere
First Flute Pittsburgh Symphony
Member of Musa Viva Trio
Assistant Conductor, Pittsburgh Youth Symphony
Cleveland Orchestra
Soloist, Casals Festival

Richard Goldner
Professor of Strings and Chamber Music
Conductor of the Orchestra
Vienna Conservatorium
Pupil of Carl Flesch, Otokar Sevcik, Bronislaw Huberman

Richard M. Grav
Music Therapist
B S., M Ed., University of California
M M., Post-graduate study, University of Kansas
Music Therapist-Consultant, Ohio Division of Mental Health

Gilles Guilbert
Teacher of Piano and Foreign Language
M A., Schola Cantorum, Paris
Ph D., Ecole Cesar Franck
California Institute of Technology
Linguistic Pedagogy, Sorbonne, Paris

Louann K. Hall
Teacher of Oboe
B M E., University of Houston

Marshall A. Hill
Assistant Professor of Music Education
Director of Choral Activities,
Teacher of Voice
B A., M A., Utah State University
Ph D., Florida State University

Howard Hiller
Teacher of French Horn
B M., University of Southern California
First Horn, First Army Symphony
Orchestra

ADMINISTRATION AND FACULTY

First Horn, New York City Opera
First Horn, Pittsburgh Symphony

Charles Hors
Teacher of Trumpet
First Trumpet, Pittsburgh Symphony

Al Hofburg
Teacher of Guitar
M M., West Virginia University
Pittsburgh Public Schools

James C. Hunter
Professor of Music History and Literature,
Chairman, Department of Music History and Literature
Director of Graduate Studies
B A., Carnegie-Mellon University
M A., Duquesne University
Ph D., Eastman School of Music,
University of Rochester

Joseph Wilcox Jenkins
Professor of Theory,
Chairman, Department of Theory
B S., St. Joseph's College, Philadelphia, Pa
B M., M M., Eastman School of Music,
University of Rochester
Ph D., Catholic University of America

Nicholas Jordanoff
Assistant to the Director for Performing Ensembles,
Tamburitzan Institute of Folk Arts
Associate Professor
M Ed., Duquesne University

Eugenia Popescu Judetz
Visiting Professor, Tamburitzan Institute of Folk Arts
Bucharest, Romania

David René Kolaf
Instructor and Administrator of Library, Museum, and Archives,
Tamburitzan Institute of Folk Arts
B A., Duquesne University
M A., Wayne State University

Walter W. Kolaf
Director, Tamburitzan Institute of Folk Arts

M Ed., Duquesne University

Stephen Kovacev
Assistant to the Director, Business Affairs
Tamburitzan Institute of Folk Arts

Nestor Koval
Instructor of Woodwinds
Paris Conservatoire

Myra Lebow
Teacher of Piano
B F A., Carnegie-Mellon University
M A T., Yale University

Robert Leininger
Teacher of String Bass
Assistant Principal, Pittsburgh Symphony

Pamela Lewis
Teacher of Voice
A B., Middlebury College
M A., Stanford University
M F A., Carnegie-Mellon University

Frank T. MacQuown
Teacher of Piano
B S., University of Pittsburgh

Donald E. McCutchen
Associate Professor of Music Education,
Chairman, Wind and Percussion Department,
Chairman, Duquesne University School of Music Mid-East Instrumental Music Conference
B S. in M Ed., Indiana University of Pennsylvania
Navy School of Music
M M., Chicago Musical College
Mus D. Honors Causa, Huron College

Joan Condre
Teacher of Piano
B M., Baldwin-Wallace Conservatory
M A., Duquesne University

Robert J. Croan
Associate Professor of Music History and Literature
B A., M A., Columbia University
Ph D., Boston University
Private Voice Study, Gerhard Pechner and Aksel Schottz
Music Critic, Pittsburgh Post Gazette

Leslie L. Dean
Teacher of Lower Brass Instruments
M M., Duquesne University
Moon Union School

Anthony Di Vittorio
Teacher of Piano
B S., Duquesne University

Brunhilde E. Dorsch
Professor of Eurythmics
B A., Carnegie-Mellon University
M S., Duquesne University
Dalcroze School of Music

Robert F. Egan
Professor of Music Education and Dean of the School of Music
B S., Case Western Reserve University
M A., Ph D., New York University

Gene A. Felice
Teacher of Clarinet
Diploma, Cincinnati Conservatory of Music
B S., University of Cincinnati
M M., Duquesne University

Chairman Gadd
Artist in Residence
Assistant Professor of Violin
Diploma, New South Wales State Conservatory of Music, Australia
Pupil of Richard Goldner and Joseph Gingold

Elden Gatwood
Teacher of Oboe

M Ed., Duquesne University

Stephen Kovacev
Assistant to the Director, Business Affairs
Tamburitzan Institute of Folk Arts

M Ed., Duquesne University

Nestor Koval
Instructor of Woodwinds
Paris Conservatoire

Christine Kuniko
Instructor of Solfeggio

Myra Lebow
Teacher of Piano
B F A., Carnegie-Mellon University

M A T., Yale University

Robert Leininger
Teacher of String Bass

Pamela Lewis
Teacher of Voice
A B., Middlebury College
M A., Stanford University
M F A., Carnegie-Mellon University

Frank T. MacQuown
Teacher of Piano
B S., University of Pittsburgh

Donald E. McCutchen
Associate Professor of Music Education,
Chairman, Wind and Percussion Department,
Chairman, Duquesne University School of Music Mid-East Instrumental Music Conference
B S. in M Ed., Indiana University of Pennsylvania
Navy School of Music
M M., Chicago Musical College
Mus D. Honors Causa, Huron College
SCHOOL OF MUSIC

Jean M. Raevens
Assistant Professor in Theory and Organ
Lemmens Institute, Mechelen, Belgium, (Laureat)
Royal Conservatory, Ghent, Belgium—First Prize in Organ
Sister Carole Riley
Teacher of Piano
B S , M M , Duquesne University
James Ronecic
Lecturer, Tamburitzan Institute of Folk Arts
B A , M B A , Duquesne University
Carmen Rummo
Assistant Professor of Piano
Pupil of Lena Borrelli, John Koening, Harry Archer, Maurice Dumensil
William Schneiderman
Teacher of Percussion
Diploma in Percussion, Institute of Music Art, Juillard School of Music
Ballet Russe, Ballet Theatre, New Opera Co
Chautauqua Symphony and Opera
Faculty Summer School
Member Pittsburgh Symphony
Robert L. Shankovech
Associate Professor of Music Theory
Assistant Dean
B S , M M , Duquesne University
Post-graduate study Peabody Conservatory and University of Pittsburgh
Doctoral studies, Carnegie-Mellon University
Allen Sher
Teacher of Violoncello and Chamber Music
B A , Brooklyn College
M A , Columbia University
New York College of Music
Edwin Shiner
Associate Professor of Trumpet
B F A , Carnegie-Mellon University
Matthew Shiner
Associate Professor of Brass Instruments
Pupil of Ottavio Farrara
Salvatore Shippign
Teacher of Violoncello and Chamber Music
B M , Eastman School of Music
M A , Ball State University
Certificate, St Cecilia Academy, Rome, Italy
Chigi Academy, Siena, Italy
Benjamin Spiegel
Teacher of Bassoon
Brooklyn College
Formerly Bassoonist Pittsburgh Symphony
Paul G. Stafura
Lecturer, Tamburitzan Institute of Folk Arts
B S , M M E , Duquesne University
Anna Laboumny Steele
Instructor of Organ
B M , Eastman School of Music
M M , University of Michigan
Fulbright Grant
Pupil of David Craighead, Marilyn Mason, Andre Marchal, Jean Langlas
Diplome (Mention Maximum), Schoia Cantorum, Paris
Ecole Normale, Paris
Gladys Stein
Assistant Professor of Piano
Diploma, B S , M S , Juilliard School of Music
Special Artist Degree, Vienna State Academy
Pupil of Clarence Adler, Rosina Lhevinne, Victor Babin, and Richard Hauser
Assistant of Rosina Lhevinne
John Stodolsky
Teacher of Guitar
Yee Ha Chiu Sutton
Teacher of Piano
The Royal College of Music, London, England
Diploma, Juilliard School of Music
School of Nursing

ADMINISTRATION
Regina E. Fuson, R.N., M.Ed
Alice C. Feetham, R.N., M.Ed
Vera S. Donovan, R.N., M.S

FACULTY
Rosalind C. Anderson
Associate Professor of Anatomy
B.S., M.T., Holyoke College
M.S., Ph.D., Yale University

Theresa Balog, R.N.
Assistant Professor of Nursing
B.S.N., Duquesne University
M.S.N., University of Pittsburgh

Mary Maxine Bargar, R.N.
Assistant Professor of Nursing
B.S.N., University of Pittsburgh
M.N., University of California, Los Angeles

Irene Bosco, R.N.
Associate Professor of Nursing
B.S.N.E., M.Ed., Duquesne University
Ed.D., Teachers College, Columbia University

Alice Long Walker
Music Director, Congregation Beth Shalom

Adam Aburano
Associate Professor of Medical Technology
B.S., M.A., Ed.D., New York University

John H. Wilson
Assistant Professor in Music Education
B.S., M.A., Ed.D., New York University

Samuel C. Yahres
Associate Professor of Music Education
M.M., University of Pittsburgh

Grace Cattell, R.N.
Assistant Professor of Nursing
B.S.N., University of Miami
M.P.H., University of Pittsburgh

Therese Clifford, R.N.
Associate Professor of Nursing
B.S.N.E., Duquesne University
M.S.N., The Catholic University of America

Janet Coluzzi, R.N.
Instructor in Nursing
B.A., M.S., Duquesne University

Mary Grace Connors, R.N.
Associate Professor of Nursing
B.S.N.E., University of Pittsburgh
M.A., Teachers College, Columbia University

A. Barbara Coyne, R.N.
Associate Professor of Nursing

Music Director, Congregation Beth Shalom

Music Conservatory, Cracow, Poland

Institute of Haifa, Israel

Shalom

Pupil of Bernard Goldberg

Pupil of Anne Griffiths

Solos, Mendelssohn Choir, Pittsburgh Symphony Orchestra

John H. Wilson
Assistant Professor in Music Education
B.S., M.A., Ed.D., New York University

Samuel C. Yahres
Associate Professor of Music Education
M.M., University of Pittsburgh

Grace Cattell, R.N.
Assistant Professor of Nursing
B.S.N., University of Miami
M.P.H., University of Pittsburgh

Therese Clifford, R.N.
Associate Professor of Nursing
B.S.N.E., Duquesne University
M.S.N., The Catholic University of America

Janet Coluzzi, R.N.
Instructor in Nursing
B.A., M.S., Duquesne University

Mary Grace Connors, R.N.
Associate Professor of Nursing
B.S.N.E., University of Pittsburgh
M.A., Teachers College, Columbia University

A. Barbara Coyne, R.N.
Associate Professor of Nursing

Music Director, Congregation Beth Shalom

Pupil of Bernard Goldberg

Pupil of Anne Griffiths

Solos, Mendelssohn Choir, Pittsburgh Symphony Orchestra

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B.S., M.A., Ed.D., New York University

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M.M., University of Pittsburgh

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Assistant Professor of Nursing
B.S.N., University of Miami
M.P.H., University of Pittsburgh

Therese Clifford, R.N.
Associate Professor of Nursing
B.S.N.E., Duquesne University
M.S.N., The Catholic University of America

Janet Coluzzi, R.N.
Instructor in Nursing
B.A., M.S., Duquesne University

Mary Grace Connors, R.N.
Associate Professor of Nursing
B.S.N.E., University of Pittsburgh
M.A., Teachers College, Columbia University

A. Barbara Coyne, R.N.
Associate Professor of Nursing

School of Pharmacy

ADMINISTRATION
Bruce D. Martin, Ph.D.
Ralph R. Kreuer, B.S.

FACULTY
Akio Aburano
Associate Professor of Medical Technology
B.S., M.A., Ed.D., New York University

Anthony J. Amadio
Professor of Pharmaceutical Administration
B.S., M.S., University of Pittsburgh
B.S., M.A., Duquesne University

Lawrence H. Block
Associate Professor of Pharmaceutical Chemistry
B.S., M.S., Ph.D., University of Maryland

Mitchell L. Boske
Professor of Pharmaceutical Chemistry
B.S., M.S., University of Pittsburgh

Allen Brodsky
Adjunct Research Professor and Radiological Physicist
Mercy Hospital
Sc.D., University of Pittsburgh

Gayle A. Cochran
Clinical Instructor
B.S., University of Pittsburgh

Todd G. Cochran
Assistant Professor of Pharmaceutical Chemistry
B.A., Princeton University
Ph.D., University of Washington

Martin Cohen
Associate Professor of Medical Technology
(Microscopy, Electrophoresis)
SCHOL OF PHARMACY

Frederick W Fochtman
Instructor in Pharmacology
B S (Pharmacy), M S, Ph D, Duquesne University

Henry R Freedy
Assistant Professor of Clinical Pharmacy
B S (Pharmacy), Pharm D, Duquesne University

Alvin M Gainisky
Professor of Pharmaceutical Chemistry and Pharmacognosy
B S (Pharmacy), M S, Ph D, University of Illinois

John Georges
Instructor in Medical Technology (Virology)
M S, Duquesne University

Marilyn F Harris
Associate Professor of Pharmacognosy
B S, M D, University of Saskatchewan

John J Kenny
Associate Professor of Medical Technology (Blood Banking, Hematology)
B S, M D, University of Pittsburgh

Spyros Komnos
Associate Professor of Medical Technology (Bacteriology, Mycology)
B S, M S, Duquesne University

Ralph R Kreiser
Associate Professor of Pharmacognosy and Assistant Dean of the School of Pharmacy
B S, Ph G, Duquesne University

Joseph M Krzostik
Instructor in Pharmaceutical Law
B S (Pharmacy), J D, Duquesne University

John G Lech
Clinical Instructor
B S (Pharmacy), Duquesne University

M Elaine Linkhauer
Instructor in Medical Technology (Bacteriology, Parasitology)
B A, Mt Mercy College
M T (ASCP), M S, Duquesne University

Bruce D Martin
Professor of Pharmaceutical Chemistry and Dean of the School of Pharmacy
B S (Pharmacy), Albany College of Pharmacy
M S, Ph D, University of Illinois

Thomas J Mattes
Assistant Professor of Clinical Pharmacy
B S (Pharmacy), Pharm D, Duquesne University

Reginald A Ney
Health Physicist
B S, Duquesne University

Edward J Pavek
Associate Professor of Medical Technology
Director, Division of Nuclear Medicine and Ultrasound, Mercy Hospital (Radioscopy)
M D, University of Pennsylvania

Norbert A Pilewski
Associate Professor of Pharmacognosy
B S (Pharmacy), M S, University of Pittsburgh

Margaret Plunzaki
Instructor in Medical Technology (Coagulation)
B A, Mt Mercy College
M T (ASCP)

Gene A Riley
Professor of Pharmacology
B S (Pharmacy), Duquesne University
Ph D, Western Reserve University

Frank K Schwenghardt
Lecturer in Pharmaceutical Chemistry
B S, Seton Hall University
Ph D, Duquesne University

Sydney P Shanor
Professor of Pharmacology

ADMINISTRATION AND FACULTY

R N, St John's Hospital
B S, M S, Ph D, University of Pittsburgh

Nancy Simmons
Instructor in Medical Technology (Blood Banking)
B S, Eastern Nazarene College
M T (ASCP)
B B (ASCP)

Eileen Steele
Assistant Clinical Professor of Medical Technology and Education Coordinator, Mercy School of Medical Technology (Hematology, Urinalysis)
B A, Mt Mercy College
M T (ASCP)
M S in Education, Duquesne University

John F Ward
Associate Professor of Medical Technology

AUXILIARY FACULTY

Harvey M Arbit, Pharm D
Senior Clinical Research Coordinator
Travenol Laboratories, Inc
Morton Grove, Illinois

Mark M Bracken, M D
Pathologist
Mercy Hospital

William K Buchanan, M D
Associate Department of Anesthesiology
St Francis General Hospital

Earl R Davis, M D
Pathologist
St Joseph's Hospital

Regina A Greenwood, B S, M S
Consultant in Health Physics
Greenwood Radiation Consulting

Norman Haywood, J D
Livingston and Miller, Attorneys at Law

Carl Kaplan, M D
Chairman
Division of Radiation Therapy
Radiology Department, Mercy Hospital

Arthur Kateh, Ph D
Research Associate
Radiology Department, Mercy Hospital

Edward F Keating
Adjunct Professor of Pharmaceutical Administration
Director of Trade Relations
Merrick, Sharp & Dohme Laboratories, West Point, Pennsylvania

Delbert D Konnor, M S, R Ph
Adjunct Lecturer in Pharmaceutical Administration, Staff Coordinator for Volunteer Compliance
Drug Enforcement Administration, U S Department of Justice
ASSOCIATED PHARMACIES AND 
ADJUNCT INSTRUCTORS IN PHARMACY

Joan Ansberry, B S  
Strader's Pharmacy  
3005 Willow Avenue  
Pittsburgh, Pa 

Thomas Bache, B S  
St Francis Hospital  
Pittsburgh, Pa 

Mark Davia, B S  
Thrift Drug Co  
615 Alpha Drive  
Pittsburgh, Pa 

Dickson Drug Store  
2900 West Liberty Avenue  
Pittsburgh, Pa 

Thomas Fowler, B S  
Director of Pharmacy Services  
Sewickley Valley Hospital  
Sewickley, Pa 

Edward Hudak, B S  
Bells Pharmacy  
1220 Swissvale Avenue  
Pittsburgh, Pa 

Mervin A Kendall, B S  
Veterans Administration Hospital  
Leech Farm Road  
Pittsburgh, Pa 

Thomas R Kim Jr, B S  
Amsler Pharmacy  
818 Warrington Avenue  
Pittsburgh, Pa 

SCHOOL OF PHARMACY  

Lawrence M Mulhern, M D  
Chief of the Division of Rheumatology  
Mercy Hospital 

Angelo L Pantalone, M D  
Director of the Department of Anesthesia  
St Francis General Hospital 

Frank J Pohl, L L B  
Burgwin Ruffin, Perry & Pohl,  
Attorneys at Law 

Silvestri Silvestri  
Judge  
Court of Common Pleas,  
Fifth Judicial District,  
Commonwealth of Pennsylvania 

Cyril H Wecht, M D , J D  
Adjunct Professor of Pathology  
Coroner, Allegheny County 

ASSOCIATED PHARMACIES AND  
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Strader's Pharmacy  
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Commonwealth of Pennsylvania 

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Coroner, Allegheny County 

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Court of Common Pleas,  
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Commonwealth of Pennsylvania 

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Coroner, Allegheny County 

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Pittsburgh, Pa 

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Pittsburgh, Pa 

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Director of Pharmacy Services  
Sewickley Valley Hospital  
Sewickley, Pa 

Edward Hudak, B S  
Bells Pharmacy  
1220 Swissvale Avenue  
Pittsburgh, Pa 

Mervin A Kendall, B S  
Veterans Administration Hospital  
Leech Farm Road  
Pittsburgh, Pa 

Thomas R Kim Jr, B S  
Amsler Pharmacy  
818 Warrington Avenue  
Pittsburgh, Pa
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