Duquesne University
Pittsburgh, Pennsylvania

UNDERGRADUATE CATALOG
1978-1979

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Duquesne University admits students of any sex, race, color, national and ethnic origin to all rights, privileges, programs, and activities generally accorded or made available to students at the school. It does not discriminate on the basis of sex, race, color, national or ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs.

The provisions of this catalog are to be considered directive in character. The University reserves the right to make any changes that seem necessary or desirable, including fees, tuition and room and board.

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ACADEMIC CALENDAR

1977-1978

FALL SEMESTER—1977

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<td>Preregistration with Pay-by-Mail Option Closes</td>
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<tr>
<td>August 25-27</td>
<td>Thursday through Saturday</td>
<td>Final Registration</td>
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<tr>
<td>August 27</td>
<td>Saturday</td>
<td>Latest Date to Cancel 1977 Fall Semester Registration Without Penalty</td>
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<td>August 29</td>
<td>Monday</td>
<td>Fall Semester Begins</td>
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<td>September 5</td>
<td>Monday</td>
<td>Holiday Labor Day</td>
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<td>September 6</td>
<td>Tuesday</td>
<td>Latest Date to Register and for Change of Schedule (No remission of charges for reduced class schedule after this date)</td>
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<td>September 6</td>
<td>Tuesday</td>
<td>Latest Date for December 1977 Graduates to Apply for Graduation</td>
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<td>September 10</td>
<td>Saturday</td>
<td>Latest Date for 80% Tuition Remission for Total Withdrawal from the University</td>
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<tr>
<td>September 17</td>
<td>Saturday</td>
<td>Latest Date for 40% Tuition Remission for Total Withdrawal from the University</td>
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<tr>
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<td>Latest Date for 20% Tuition Remission for Total Withdrawal from the University</td>
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<td>October 19</td>
<td>Wednesday</td>
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<td>Undergraduate I Grade Conversion Date for 1977 Spring Semester and Summer Session Courses (I grades not removed on or before this date convert to F's)</td>
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<tr>
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<td>Monday</td>
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<td>October 24</td>
<td>Monday</td>
<td>Due Date for Instructors to Submit Undergraduate I Grade Removal Grades</td>
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<tr>
<td>October 26</td>
<td>Wednesday</td>
<td>Latest Date for Undergraduates Other Than First Semester Freshmen to Withdraw with W Grade</td>
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<tr>
<td>November 1</td>
<td>Tuesday</td>
<td>Holiday All Saints Day</td>
</tr>
<tr>
<td>November 7-18</td>
<td>Monday through Friday</td>
<td>Pre-registration for 1978 Spring Semester</td>
</tr>
<tr>
<td>November 23-27</td>
<td>Wednesday through Sunday</td>
<td>Holidays Thanksgiving, Classes Resume</td>
</tr>
<tr>
<td>November 28</td>
<td>Monday</td>
<td>Latest Date for December 1977 Graduates to Submit Thesis and Schedule Comprehensives</td>
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<tr>
<td>December 5</td>
<td>Monday</td>
<td>Pre-registration for 1978 Spring Semester</td>
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### 1977

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<thead>
<tr>
<th>Date</th>
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<tr>
<td>December 8</td>
<td>Thursday</td>
<td>Holiday Immaculate Conception</td>
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<tr>
<td>December 9</td>
<td>Friday</td>
<td>Pre-registration with Pay-by-Mail Option for 1978 Spring Semester Closes</td>
</tr>
<tr>
<td>December 13</td>
<td>Tuesday</td>
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<td>December 14-20</td>
<td>Through</td>
<td>Latest Date for First Semester Freshmen to Withdraw with W Grade</td>
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<td>December 20</td>
<td>Tuesday</td>
<td>Holiday Immaculate Conception</td>
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<td>December 20</td>
<td>Tuesday</td>
<td>Pre-registration with Pay-by-Mail Option for 1978 Spring Semester Closes</td>
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### 1978

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<th>Date</th>
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<tr>
<td>March 13-22</td>
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<tr>
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<td>March 29</td>
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<td>March 31</td>
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<td>Latest Date for May 1978 Graduates to Submit Thesis and Schedule</td>
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<td>April 17</td>
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<td>Latest Date for First Semester Freshmen to Withdraw with W Grade</td>
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<td>April 27-29</td>
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<td>Pre-registration with Pay-by-Mail Option for 1978 Spring Semester Closes</td>
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<td>May 1-3</td>
<td>Monday</td>
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<tr>
<td>May 3</td>
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<td>Spring Semester Ends</td>
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<td>May 5</td>
<td>Friday</td>
<td>Honors Day Exercises</td>
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<tr>
<td>May 6</td>
<td>Saturday</td>
<td>Commencement Bacallaureate Mass</td>
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### SPRING SEMESTER—1978

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<td>January 9</td>
<td>Saturday</td>
<td>Latest Date for May, 1978 Graduates to Apply for Graduation</td>
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<tr>
<td>January 11</td>
<td>Wednesday</td>
<td>Latest Date to Cancel 1978 Spring Semester Registration without Penalty</td>
</tr>
<tr>
<td>January 12</td>
<td>Thursday</td>
<td>Spring Semester Begins</td>
</tr>
<tr>
<td>January 21</td>
<td>Saturday</td>
<td>Latest Date to Register and for Change of Schedule (No remission of charges for reduced class schedule after this date)</td>
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### FALL SEMESTER—1978

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<thead>
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<tr>
<td>July 21</td>
<td>Friday</td>
<td>Pre-registration with Pay-by-Mail Option Closes</td>
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<td>August 24-26</td>
<td>Thursday</td>
<td>Final Registration</td>
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<tr>
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<td>Saturday</td>
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<tr>
<td>August 28</td>
<td>Monday</td>
<td>Fall Semester Begins</td>
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<tr>
<td>September 4</td>
<td>Monday</td>
<td>Holiday Labor Day</td>
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<tr>
<td>September 5</td>
<td>Tuesday</td>
<td>Latest Date to Register and for Change of Schedule (No remission of charges for reduced class schedule after this date)</td>
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<td>September 9</td>
<td>Saturday</td>
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<tr>
<td>September 23</td>
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<td>March 11</td>
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<td>October 24</td>
<td>Tuesday, Due Date for Instructors to Submit Undergraduate I Grade Removal Grades</td>
<td>January 31</td>
</tr>
<tr>
<td>October 27</td>
<td>Friday, Latest Date for Undergraduates Other Than Freshmen to Withdraw with W Grade</td>
<td>February 7</td>
</tr>
<tr>
<td>October 31</td>
<td>Tuesday, Holiday (No classes)</td>
<td>March 5</td>
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<tr>
<td>November 1</td>
<td>Wednesday, Holiday All Saints Day</td>
<td>March 8</td>
</tr>
<tr>
<td>November 13-18</td>
<td>Monday through Saturday, and Wednesday, Pre-registration for 1979 Spring Semester</td>
<td>March 9</td>
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<td>November 27-30</td>
<td>Monday through Thursday, Pre-registration for 1977 Spring Semester</td>
<td>March 13, 14</td>
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<tr>
<td>November 19-26</td>
<td>Sunday through Sunday, Holidays Thanksgiving, Classes Resume</td>
<td>March 16</td>
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<tr>
<td>November 27</td>
<td>Monday, Latest Date for December 1978 Graduates to Submit Thesis and Schedule Comprehensives</td>
<td>April 6-11</td>
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<td>December 4</td>
<td>Monday, Latest Date for December 1978 Graduates to Submit Thesis and Schedule Comprehensives</td>
<td>April 11</td>
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<tr>
<td>December 7</td>
<td>Thursday, Holiday Immaculate Conception</td>
<td>April 12-16</td>
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<td>December 8</td>
<td>Friday, Latest Date for First Semester Freshmen to Withdraw with W Grade</td>
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<td>Friday, Fall Semester Ends</td>
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<td>Friday, Fall Semester Ends</td>
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**SPRING SEMESTER – 1979**

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<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>December 7</td>
<td>Thursday, Pre-registration with Pay-by-Mail Option Closes</td>
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<tr>
<td>January 9, 10</td>
<td>Tuesday, Wednesday, Final Registration</td>
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<tr>
<td>January 10</td>
<td>Wednesday, Latest Date to Cancel 1979 Spring Semester Registration Without Penalty</td>
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Part I: General Information
## General Information

**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 8000 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 degree programs in 87 areas—34 at the baccalaureate level, 45 at the master's, and eight at the doctorate.

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 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 theatre.

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 moveable dome.

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

Administration Building, "Old Main," houses the Executive Offices of the University, the Office of Admissions, Testing Bureau, Business Offices, Cashier's Office, Career Planning and Placement Center, Chaplain's Office, Counseling and Learning Center, and Financial Aid. Adjoining this building is the University Chapel where Mass is offered daily.

Assumption Hall, a four-story structure, is a women's residence.

Canevin Hall, the oldest lecture hall on campus, was built in 1922, it was completely renovated and air-conditioned in 1968, and houses the School of Education, Curriculum Library, Institute of African Affairs, and Institute of Man.

College Hall, a six-story classroom and office facility building, is the seat of the College of Liberal Arts and Sciences, the Graduate School, and 12 of their departments and faculties, and the School of Nursing. Special instructional facilities include journalism, speech psychology, numerical analysis, multi-media, and practice skills laboratories.

Music School, built in 1966, has 73 pianos including 56 Steinways, 5 organs, and over 300 orchestral and band instruments available for student use. The school offers training and degrees in conservatory and public school music.

Duquesne Towers, the University's 17-story, double-tower residence houses 1200 men and women. A regulation swimming pool, located on the second floor, is open to all Duquesne students. The building also has an L-shaped dining room for 2,500 resident students, laundromats, and snack-bars. Each room has a telephone, and all rooms are air-conditioned.

Duquesne Union is the center of campus activities. It includes offices for student organizations and interest groups, as well as the offices of the Dean of Students and Director of Athletics. Facilities include three dining areas, a ballroom and student lounge, and the Bookstore. The Recreation Center on the first floor features eight bowling lanes, pocket billiards, table tennis, a music listening room, and an arts and crafts room.

Gymnasium is open for general use of all Duquesne students. It is primarily a practice gym, which is used for both baseball and basketball practice, as well as intramural basketball and volleyball. All varsity basketball games are held at the Civic Arena (Women's Gymnasium, see University Hall).

Richard King Mellon Hall of Science houses the Departments of Biological Sciences, Chemistry, and Physics of both the Graduate and Undergraduate Divisions of the University, as well as the School of Pharmacy. Designed by one of the world's greatest architects, Mies van der Rohe, the building won the "Laboratory of the Year" award for 1969. Instructional facilities include two large lecture halls each with a seating capacity of 248 persons.

Rockwell Hall is the home of the School of Business and Administration and the School of Law, as well as Office Services, Systems Center, and Registrar. The Business Simulation Laboratory of the School of Business and Administration 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 Ann Hall, a women's residence with a capacity of 324 students. It is air-conditioned, has its own laundry, as well as a number of lounges, television rooms, and a recreation room.

St Martin Hall, a 14-story residence, provides modern housing for 560 men. Laundry facilities and a reading 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 Army ROTC Department,
the campus Radio Station, WDUQ, and the University's Public Safety Department. It also houses the Women's Recreation and Athletics Office, gymnasium, and gymnastics room.

University Library houses a collection of 367,000 bound volumes, subscribes to more than 3,500 periodicals, and contains an increasingly large collection of materials in microprint and other nonbook forms. Special resources include an extensive African Collection of more than 8,300 volumes, 190 periodical titles, and numerous tapes, records, and microfilm. Also notable is the Rabbi Herman Halperin Collection of 3,000 books and manuscripts reflecting the history of Christian and Jewish intellectual relations, with specific reference to the Bible, during the Middle Ages.

ACCREDITATION AND AFFILIATION

University

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

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
Association of Governing Boards of Universities and Colleges
Catholic Educational Association of Pennsylvania
National Association for Independent Colleges and Universities
National Association of Student Personnel Administrators
National Catholic Educational Association
National Commission on Accrediting
Pittsburgh Council on Higher Education

College of Liberal Arts and Sciences

Accreditation
American Conference of Academic Deans
American Society of Schools of Journalism

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 Administration

School of Education

Accreditation
National Council for Accreditation of Teacher Education
Pennsylvania Department of Education

Membership
American Association of Colleges of Teacher Education
Council on Exceptional Children
National Association of Elementary School Principals
National Association of Secondary School Principals
National Education Association
Pennsylvania Association for Teacher Education
Pennsylvania Association of Colleges for Teacher Education
Pennsylvania Association for Retarded Citizens

School of Music

Accreditation
National Association of Schools of Music
National Association of Music Therapists

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

School of Nursing

Accreditation
National League for Nursing
Pennsylvania State Board of Nurse Examiners

Membership
American Association of Colleges of Nursing
National League for Nursing (Council of Baccalaureate and Higher Degree Programs)

School of Pharmacy

Accreditation
American Council on Pharmaceutical Education
Pennsylvania State Board of Pharmacy

Membership
American Association of Colleges of Pharmacy
EVENING STUDY
The School of Business and Administration and the College of Liberal Arts and Sciences offer evening classes for full-time and part-time students each semester and during the Summer Session. These are for persons whose employment does not permit them to attend as regular day students.

Through careful planning and consultation with academic advisors the bachelor's degree program may be completed by evening study in some major areas offered by these two schools. Other undergraduate schools also schedule occasional evening courses but it is not possible to complete their degree requirements through evening attendance alone.

Prospective evening undergraduate students should consult with the office of the Dean of the school in which they are interested for information about the opportunity for evening study on a continuing basis.

SUMMER SESSIONS
Many undergraduate and graduate courses are offered each summer in most areas. They are open to qualified Duquesne students and to those from other colleges and universities.

The sessions, of varying length, begin in May and run through mid-August. Short term offerings of one and two week duration, usually at the graduate level, are scheduled before and after the regular session.
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
Duquesne University believes that education is concerned with the human person as a whole—mind, body and soul. It believes that each individual has the obligation to self, society, and God to develop potential to the fullest. In this commitment the College of Liberal Arts and Sciences sets its objectives and forms its curricula.

The objectives of the College are:
1. To provide a solid foundation for lifelong learning.
2. To develop an awareness of the methodologies and epistemologies of the major areas of knowledge so that evaluations and judgments may be valid.
3. To assist in both the growth of self-knowledge and the development of a philosophy of life.
4. To assist the individual to understand his relation to God, to society, and to nature.
5. To perfect that skill in the use of standard English necessary to clear, coherent expression of one's thoughts, hopes, and ideals.
6. To cultivate a background for the learned professions and for scholarly pursuits.

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.

Social Sciences (Political Science, Psychology, Sociology)
Nine credits. At least two disciplines must be represented.
COLLEGE OF LIBERAL ARTS AND SCIENCES

History, Literature
Nine credits Both disciplines must be represented

Philosophy, Theology
Nine credits Both disciplines must be represented

Communications (Journalism, Linguistics, Speech)
Three credits

Completion of Major Program
As determined by department (Minimum of 24 credits)

Completion of Minor Program
As determined by department offering the minor (Minimum of 12 credits above the introductory courses)

Students who major or minor in a basic area automatically satisfy the area requirements for that discipline. Courses taken in an interdisciplinary minor do not satisfy area requirements.

A student's major and minor programs may not be chosen from the same department (Modern Language majors may minor in another language).

ACADEMIC REQUIREMENTS
Completion of 120 credits
A minimum cumulative over-all quality point average of 2.0
A 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
PRE-ENGINEERING
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

PRE-LAW
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-MEDICAL
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 admissions requirements of the professional school of their choice. A faculty committee on Pre-Medical Education assists the medically-oriented student.

BACHELOR-MASTER'S
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 successful completion of the master's program, the student will receive the bachelor's degree.

BACHELOR'S/PROFESSIONAL SCHOOL
A student who has completed 90 credits with a 3.50 overall average and satisfied all undergraduate curricular requirements may apply for the bachelor's degree after the successful completion of the first year of professional work in an accredited medical or law school.

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. The additional 30 credits must be completed at the University and may not be taken through cross-registration.

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

CLEP AND ADVANCED PLACEMENT
See page 183

ACADEMIC REGULATIONS

ACADEMIC LOAD
Students may normally carry five courses in one semester. A schedule of more than five courses or 17 credits must be approved by the Dean. In the summer sessions, students normally carry one credit a week; i.e., six credits in the six-week session. A 12-credit schedule in a regular semester is considered full-time study.

EFFECTIVE CATALOG
Degree requirements are those stipulated in the catalog of the year in which a student matriculates. The student is responsible for knowing the requirements for the degree. Requirements may be changed without notice or obligation.
COURSE DESCRIPTIONS

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 students to prepare 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. Diverse opportunities are available in pharmaceutical laboratories, medical research laboratories, atomic energy research laboratories, chemical laboratories, food technology and processing, fisheries, oceanography, conservation, health services, space biology, agricultural technology, 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 General 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.

Students should consider extradepartmental electives in chemistry and mathematics. Courses 107, 108, 201, 209, 210, and 220 will not be counted toward a major in Biology.

Extradepartmental Requirements Calculus 115, General Chemistry 121, 122, Organic Chemistry 205, 206 or 221, 222, General (or Analytical) Physics 201, 202 or 211, 212

REQUIREMENTS FOR THE MINOR

The department offers two minor programs.

1. Professional Minor which 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.

2. Academic Minor which consists of 107, 108 or 111, 112 and a minimum of 12 credits selected from the department’s courses numbered 200-395. Courses which are open to either non-majors or to majors may be selected. Individual course prerequisites must be met.

If a student takes 107, 108—Principles of Biology and 111, 112—General Biology, the credits for the 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 biological information and principles necessary to assume an enlightened role in our increasingly complex society. Does not carry credit toward a Biology Major. 107 is prerequisite to 108. Lecture.

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 structure, function, development, reproduction, inheritance, evolution and ecology. This course provides the basic information and concept necessary to understand living systems, their activity and interrelationships. 111 is prerequisite to 112. Lecture and laboratory.

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, and how some of them cause disease. This course does not carry credit toward a biology major. Lecture and laboratory.

312 ANIMAL PHYSIOLOGY 4 cr

An introduction to the fundamental mechanisms of body function in animals. Prerequisites 111, 112. Lecture and laboratory.

318 PHYSIOLOGY OF REPRODUCTION 4 cr

The course includes the anatomy, histology, physiology, biochemistry and endocrinology of vertebrate reproduction. The main emphasis is on the physiology of puberty, estrous and menstrual cycle, conception, pregnancy and parturition. The physiological basis of fertility and infertility also is included. Prerequisites 111, 112, and 232 or 244. Lecture and laboratory.

324 REGULATORY PHYSIOLOGY 4 cr

A treatment of physiological and environmental regulations with emphasis on neuroendocrine integration and adaptation. Prerequisites 111, 112, and 312 or 444. Lecture and laboratory.

330 INVERTEBRATE BIOLOGY 4 cr

The morphology, systematics, life histories and ecology of invertebrate animals, with emphasis on diversity of forms. Prerequisites 111, 112 or equivalent. Lecture and laboratory.

336 ANIMAL PARASITOLOGY 4 cr

The principles of parasitism, and general biology of animal parasites from protozoans through anthropods. Prerequisites 111, 112 and 330. Lecture and laboratory.

342 NATURAL HISTORY OF INFECTIOUS DISEASES 3 cr

The natural history of infectious diseases is considered in this case from the aspect of host-parasite relationships. The process of infection, the outcome of the relationship and
epidemiology. 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. Prerequisites 111, 112 Lecture

348 EVOLUTION 3 cr
The history, development, concepts, and evidence of evolution with emphasis on modern studies in evolutionary biology, including an introduction to population genetics. Prerequisites 111, 112 and 226 or 438 Lecture

395 SPECIAL TOPICS 1-3 cr
Treatment of topics of current or special interest in biology. Lecture, Laboratory or combinations

398, 399 UNDERGRADUATE RESEARCH 2 cr each
Opportunity for selected students to work on research problems under the direction of a faculty member. 398 is not prerequisite to 399. Maximum of four credits. Registration by permission of instructor

209, 210 ANATOMY AND PHYSIOLOGY 4 cr each
Studies designed to provide students with a background in the area of human body structure and the mechanisms underlying normal body functions. Laboratory includes examination of the macro and gross anatomy of the body, physiological experiments, and exposure to certain basic clinically important measurements and techniques. Prerequisites: some previous exposure to introductory biology and chemistry is desirable. 209 is prerequisite to 210. This course does not carry credit toward a Biology Major. Lecture and laboratory

220 SEX AND SEXUALITY 3 cr
Consideration of sex and reproduction as universal biological functions with special emphasis on physiological and psychological basis of human sexuality. The course also aims to examine sexual functioning, sexual behavior and sex therapy. Does not carry credit toward a Biology Major Lecture

226 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. Prerequisites 107, 108, or 111, 112 Lecture and laboratory

232 VERTEBRATE MACROSTRUCTURE 4 cr
A comparative study of the gross structure of vertebrates and the relationship of that structure to function and evolution. Prerequisites 111, 112 Lecture and laboratory

238 VERTEBRATE MICROSTRUCTURE 4 cr
A study of tissue and organ structure and the relationship of that structure to function. Prerequisites 111, 112 and 232 or permission of the instructor. Lecture and laboratory

244 ANIMAL DEVELOPMENT 4 cr
A comparative study of the morphological and physiological aspects of animal development. Emphasis is placed on current experimental approaches. Prerequisites 111, 112 Lecture and laboratory

250 PLANT DEVELOPMENT 4 cr
Examines the unique features of representative types of plants, as revealed by anatomical studies of form, function, and morphogenesis. Prerequisites 111, 112 Lecture and laboratory

306 PLANT PHYSIOLOGY 4 cr
Varied studies of the growth requirements and regulatory mechanisms of important plant types, with emphasis upon environmental control. Prerequisites 111, 112 and 250 Lecture and laboratory

411 ECOLOGY 3 cr
A critical examination of the principles and procedures underlying ecological thought, stressing the ecosystem concept and its implications for human activity. Prerequisites 111, 112. Not open to students with previous similar course Lecture

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

432 MICROBIOLOGY 4 cr
The classification, structure, function, and metabolism of microorganisms. Prerequisites: Biology 111, 112 and Organic Chemistry. Not open to students with previous similar course. Lecture and laboratory

438 CELL AND MOLECULAR BIOLOGY 4 cr
Structure, function, and biosynthesis of biological macromolecules are discussed. Prerequisites: 432 or 444 and Organic Chemistry. Not open to students with previous similar course. Lecture and laboratory

444 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 biosynthesis, active transport, and cell movement. Cell growth and differentiation, relationships of cell structure to these processes. Prerequisites 111, 112 and Organic Chemistry. Not open to students with previous similar course. Lecture and laboratory

DESCRIPTIONS OF THE FOLLOWING COURSES ARE PROVIDED IN THE GRADUATE SCHOOL OF LIBERAL ARTS AND SCIENCES CATALOG

503 CELL AND FINE STRUCTURAL BIOLOGY 3 cr
520 EXPERIMENTAL EMBRYOLOGY 3 cr
505 MOLECULAR GENETICS 3 cr
523 INVERTEBRATE PHYSIOLOGY 3 cr
507 LABORATORY TECHNIQUES 3 cr
525 COMPARATIVE MICROBIOLOGY 3 cr
511 COMPARATIVE VERTEBRATE PHYSIOLOGY 3 cr
528 MICROBIAL PHYSIOLOGY 3 cr
512 MAMMALIAN PHYSIOLOGY 3 cr
531 BIOLOGY OF FUNGI 3 cr
513 GENERAL ENDOCRINOLOGY 3 cr
580 URBAN ECOLOGY 3 cr

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, biological, 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 AND BIOCHEMISTRY MAJORS**

Thirty-two semester hours are required. All students must take 121, 122, 221, 222, 321, 323, and 421, Mathematics 115, 116, Physics 201, 202 or 211, 212, Biology 111, 112, proficiency in German, Russian or French at the 202 or 212 level is required. If a student takes 111, 112, and 121, 122, the credits for the 111, 112 will not apply to the total required for the degree. Courses 101, 102, 205, 206 will not be counted toward a major.

**Chemistry Major** All students must take 322, 324, 422 and Mathematics 215.

**Biochemistry Major** All students must take 401, 524. In addition, two biology electives should be selected from Biology 444, 432, 438. Students planning to enter a graduate chemistry department should take 322, 324.

To meet the American Chemical Society’s requirements for professional certification, the Chemistry Major must elect two additional courses from the following: 401, 523, 524, 537, 538, 545, 546, 571, 572, Mathematics 216 or 308, Biology 438, Pharmacy Sciences 525, 539, one of these must be a laboratory course. This laboratory requirement can also be fulfilled with 490. The Biochemistry Major must take 322, 324, and 422 for certification.

**REQUIREMENTS FOR THE MINORS**

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

101, 102 CHEMISTRY AND SOCIEITY 3 cr each

The impact of chemistry and society reaches every phase of life. The course attempts to provide a link between chemistry and the changes in our technological society. In the first semester, the basic concepts of chemistry are developed for the non-science student and applied to current topics such as air and water pollution, energy, pesticides, etc. The second semester deals with the biochemistry of living systems. Chemical principles are used to explain the normal life processes of photosynthesis, respiration, etc. as well as abnormal conditions such as drug action, poisons, etc. on metabolic processes. Students with a good high school background do not require the first semester as a prerequisite. Others should see the instructor before registering for the second semester. Lecture, three hours.

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, of carbohydrates, lipids, proteins, nucleic acids, enzymes, vitamins, etc. Biochemistry is treated in terms of the digestion and metabolism of nutrients, the function of enzymes in the metabolic process and the abnormal metabolic conditions that prevail in disease. Lecture, three hours, Recitation, one hour, Laboratory, two hours.

121, 122 GENERAL CHEMISTRY

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 thermonuclear, chemical kinetics and equilibrium are introduced. The laboratory portion of the first semester illustrates physical and chemical properties in a qualitative manner, and the laboratory portion of the second semester illustrates the principles of some equilibria including qualitative inorganic analysis. Lecture, three hours, Recitation, one hour, Laboratory, six hours.

121 Lecture, three hours, Recitation, one hour, Laboratory, six hours 4 cr

122 Lecture, three hours, Recitation, one hour, Laboratory, six hours 5 cr

205, 206, 221, 222 ORGANIC CHEMISTRY 4 cr 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. Prerequisites: 121, 122 or 205, 206. Lecture, three hours, Recitation, one hour, Laboratory, four hours, and for 221, 222, four hours.

401 INTRODUCTORY BIOCHEMISTRY 4 cr

An introduction to biochemistry at the cellular level. The structure and chemistry of cellular components (proteins, nucleic acids, etc.), cellular reagents (enzymes, coenzymes, respiratory pigments, etc.) and metabolic reactions of carbohydrates, lipids and amino acids are discussed. Prerequisite: 206 or 222. Lecture, three hours, Laboratory, four hours.

421 ANALYTICAL CHEMISTRY 4 cr

Theoretical and practical training in modern methods in chemical analysis with emphasis on instrumental methods. Prerequisite: 322 Lecture, three hours, Laboratory, eight hours.

422 INORGANIC CHEMISTRY 4 cr

A survey of the basic principles required for understanding inorganic chemistry including atomic and molecular structure, crystal structure, non-aqueous solvents and coordination compounds. Prerequisite: 322 Lecture, three hours, Laboratory, four hours.

490 UNDERGRADUATE RESEARCH Maximum 2 cr

Selected students work on a research problem under the direction of a staff member.

524 MOLECULAR BASIS OF BIOCHEMISTRY 3 cr

A discussion of the chemistry of amino acids and proteins from the viewpoint of structure, physical chemistry and analysis. An introduction to enzyme chemistry is also included in the course. Prerequisite: 401.
DEPARTMENT OF CLASSICS

Chairman  MARTIN D. SNYDER, Ph D

For the student who seeks something more than the mass-produced, plastic culture of contemporary life, the Department of Classics offers courses, both in the original languages and in translation, designed for the enrichment of the individual as a human person. These courses cover a vast period of Western cultural history extending from Homer to the Renaissance. The course material is, moreover, not studied in isolation but in conjunction with the best of contemporary thought and creative expression.

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. 201, 202—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 study above the 100 level must be at the 200 level or above.

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 3 cr each
Study of the fundamentals of Latin grammar and syntax combined with occasional exercises in translation from Roman authors.

103, 104 BASIC GREEK 3 cr each
Study of the fundamentals of Greek grammar and syntax combined with frequent 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
Survey of major Latin authors.

203, 204 INTRODUCTION TO GREEK READINGS 3 cr each
Survey of major Greek authors.

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.

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, Dionysus of Halicarnassus, Rev. Greek.

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, Phiny the Younger, Suetonius, Apuleius, Lucian, Dio Cassius, Marcus Aurelius.

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
An examination of the origins and development.
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 121, 122, 123 or 212, 222 (121, 122 or 221, 222 are prerequisites to all advanced courses) and 321, 322.

Extradepartmental Requirements Students planning to do graduate work in economics are advised to take calculus.

REQUIREMENTS FOR THE MINOR

Eighteen semester hours (321 and above) are required for a minor. The required introductory level courses are 121, 122 or 221, 222. In certain cases, it would be advisable to take 123 as an elective. It is strongly suggested that students having selected Economics as a minor, consult with the Economics Department chairman for advisement purposes.

COURSE DESCRIPTIONS ARE PROVIDED IN THE SCHOOL OF BUSINESS AND ADMINISTRATION SECTION OF THIS CATALOG ON PAGES 82-84.
HONORS PROGRAM

Students who give evidence of outstanding ability in English through their performance in English Composition 101 or by virtue of superior national test scores will be invited to participate in the English Honors program at the discretion of the departmental Honors Committee. These students may apply Honors course credits to either an English major or minor, or may use these credits as electives. Further details concerning the Honors program are available through the department office and will be distributed to all nominees at the time of their recommendation for admission to the program.

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 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 their historical contexts.

206 AMERICAN LITERATURE SURVEY II—AFTER CIVIL WAR 3 cr
Representative selections from major American authors treated in both their literary and their 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 201, 202 Composition. 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 409 CHAUCER 3 cr
A study of The Canterbury Tales and minor poems.

410 MEDIEVAL SPECIAL TOPICS 3 cr
Studies in the ideas and attitudes of the medieval period approached through one of its dominant genres such as the romance, the drama, the lyric, etc. or through the ideas and attitudes conveyed in one of the dominant genres of the Renaissance, the lyric, the epic, the drama, etc.

SHAKESPEARE STUDIES 433 Shakespeare I 3 cr
Comedies and romances.

434 SHAKESPEARE II 3 cr
Tragedies and histories.

439 SHAKESPEARE SPECIAL TOPICS 3 cr
Studies in Shakespeare relating his works to those of his contemporaries or concentrating on the problems of Shakespeare biographical, aesthetic, and critical. Specific works and approaches will 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.

449 EIGHTEENTH CENTURY SPECIAL TOPICS 3 cr
Studies in Eighteenth Century thought and aesthetic in the works of one or more of its great writers: Dryden, Swift, Pope, Johnson, Blake, etc., or through the ideas and attitudes conveyed in one of the dominant genres of the English Romantic period.
469 TWENTIETH CENTURY SPECIAL TOPICS 3 cr
Studies in Twentieth Century thought and aesthetic in the works of one or more of its major writers Yeats, Joyce, Eliot, etc., or through the ideas and attitudes conveyed in one of the dominant genres of the Twentieth Century 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 bellettristic 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.

477 AMERICAN LITERATURE SPECIAL STUDIES 3 cr
A course designed to reflect particular current interests of faculty and students like Topics can be drawn from a wide range of areas such as historical background, aesthetics, theme and motif, from specific studies of major authors or from tracing the development of dominant literary genres

499 DIRECTED STUDIES 3 cr

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. In addition to personal enrichment and heightened awareness of man’s will to create visual forms, the study of art history can lead to careers in teaching, publishing, museology, historic preservation, and urban redevelopment.

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 equivalent, or 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 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. Can be elected to fulfill the history/literature requirement.

202 HISTORY OF ART RENAISSANCE TO MODERN 3 cr
A continuation of 201. Surveys Renaissance, Baroque and Modern art in Western Europe. Can be elected to fulfill the history/literature requirement.

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, Rococo, and Modern art. (Offered in alternate years)

204 ART IN THE SPANISH ENVIRONMENT 3 cr
An examination of a selected group of art objects created in Spain from prehistoric to modern times. The aim of this course is to define the dramatic intensity of the imagery, forms, and content of these art objects.

205 MAJAS, MADONNAS, AND MYTHS 3 cr
An exploration of the image of woman as it has been portrayed throughout the ages by the artist, both male and female. Emphasis is on the analysis of themes relating to female imagery as well as formal consideration of the work of art.

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 forming 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 in England, France, Italy, and Germany (Offered in alternate years)

321 15th CENTURY RENAISSANCE ART  3 cr
An investigation 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 ART OF THE 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 artist's use of form, color, line, texture and light, but also emphasize the changing political, religious, and social values in society.

332 ART OF THE 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 contemporary 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 forms created by American painters and sculptors from the early 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 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.

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.

HISTORY

REQUIREMENTS FOR THE MAJOR
At least 24 credits in addition to 111, 112 or 113, 114. 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. Transfer students may apply for equivalency.

The stated requirements aim to provide the student with a structured program of learning within which considerable flexibility is encouraged. 111, 112 acquaints the student with the basic themes of world history, 113, 114 deals with the history of the West. 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 or 113, 114 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 APPROACHES TO WORLD 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.

113, 114 WESTERN CIVILIZATION  3 cr each
An introductory survey of the origins and characteristics of European Civilization, emphasizing the personalities and events and institutions that have made the West the dominant global power today.

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 UNITED STATES TO 1877  3 cr
The historical development of American institutions, ideals, and society from earliest times to 1877.
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>232 DEVELOPMENT OF THE UNITED STATES SINCE 1877 3 cr</td>
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<tr>
<td>The historical development of American institutions, ideals, and society since 1877</td>
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**TOPICAL AND AREA SURVEYS**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>253 THE MIDDLE EAST FROM MUHAMMED TO NAPOLEON 3 cr</td>
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<tr>
<td>A historical survey of the Near east from the rise of Islam to the decline of the Omayyad state, with particular attention to political, social, and cultural trends</td>
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<tr>
<td>254 THE HISTORY OF THE MODERN MIDDLE EAST 3 cr</td>
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<tr>
<td>A study of the modern Near East with concentration upon the conflict between imperialism and nationalism, traditionalism and Western influences in the area</td>
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<tr>
<td>255, 256 HISTORY OF ASIA 3 cr each</td>
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<tr>
<td>A survey of Asian civilization from ancient times to the present day, western colonialism, the rise of the nationalist movement, and the establishment of modern states</td>
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<tr>
<td>257, 258, RUSSIAN HISTORY 3 cr each</td>
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<tr>
<td>Development of society and state in Russia from their origins to the twentieth century</td>
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<tr>
<td>259, 260 EAST-CENTRAL EUROPE 3 cr each</td>
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<tr>
<td>The medieval and modern history of the small nations situated between Russia and Germany on the east and west, and the Baltic and Mediterranean Seas on the north and the south</td>
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<tr>
<td>261 LATIN AMERICA COLONIAL PERIOD 3 cr</td>
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<tr>
<td>From the Age of Discovery through the revolutions of the early 19th century</td>
<td></td>
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<tr>
<td>262 LATIN AMERICA NATIONAL PERIOD 3 cr</td>
<td></td>
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<tr>
<td>From the revolutions to the present, with emphasis on Argentina, Brazil, Chile, and Mexico</td>
<td></td>
</tr>
<tr>
<td>263 THE COLONIAL PERIOD—WESTERN HEMISPHERE 3 cr</td>
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<tr>
<td>A comparative examination of the economic, social, and political factors influencing European expansion to 1880</td>
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**HISTORY**

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<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>265 ENGLAND BEFORE 1715 3 cr</td>
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<tr>
<td>The foundations of England, emphasizing the origins of the common law, the rise of parliament, the development of English society, and England's contribution to Western thought</td>
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<tr>
<td>266 MODERN BRITAIN 3 cr</td>
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<tr>
<td>A study of the first industrial nation, with special attention to the achievement of constitutional monarchy, the social and economic problems of industrialization, the nature of British imperialism, and the problems faced in the 20th century</td>
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<tr>
<td>267 CANADA 3 cr</td>
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<tr>
<td>An introduction to Canadian history, with particular attention to the years from 1763 to the present, and to Canadian-American relations and contemporary Canada</td>
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<tr>
<td>269, 270 CHINA 3 cr each</td>
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<tr>
<td>A survey of social, economic, political, and cultural changes before and after the establishment of the People's Republic of China</td>
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<tr>
<td>274 CHURCH HISTORY I 3 cr</td>
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<tr>
<td>A religious and historical exploration of the growth of Christianity from the first century to the Reformation, discussion of those issues within the Church and the external forces which brought about major conflict and development</td>
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<tr>
<td>275 CHURCH HISTORY II 3 cr</td>
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<tr>
<td>Selected topics in Catholic and Protestant development from 1500 to the present day, special emphasis on the crises, revolutions, and returns that were central to this development</td>
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<tr>
<td>307, 308 HISTORY OF SCIENCE 3 cr each</td>
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<tr>
<td>A survey exploring the significance of scientific developments within the historical and social context of Western culture</td>
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<tr>
<td>325 GREEK HISTORY 3 cr</td>
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<tr>
<td>An examination of the development of Greek history and culture from earliest times up to the death of Alexander of Macedon</td>
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<tr>
<td>337 ROMAN IMPERIAL HISTORY 3 cr</td>
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<tr>
<td>A study of the consolidation and dissolution of the Roman imperial structure up to the death of Justinian in 565 B.C.</td>
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<tr>
<td>338 ANCIENT INDIAN HISTORY 3 cr</td>
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<tr>
<td>An investigation of ancient Indian history, art and literature up to the time of the Muslim invasion</td>
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<tr>
<td>347 MODERN MIDDLE EAST 3 cr</td>
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<tr>
<td>A survey of the Middle East from the rise of Islam to the decline of the Ottoman state, with particular attention to political, social, and cultural trends</td>
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<tr>
<td>348 MODERN AMERICAN MILITARY HISTORY 3 cr</td>
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<tr>
<td>A systematic study of modern U.S. wars from 1914 to the present. The course focuses on the political, social and economic conditions leading to each major conflict, evaluates in general terms the conduct of military operations, and assesses the impact of the conflict upon the Armed Forces and the Nation. Special emphasis is placed upon the role of the U.S. in world affairs, modernization of the Armed Forces, military-business relationships, raising and maintaining a military establishment, and civilian-military relationships</td>
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<tr>
<td>351 DIPLOMATIC HISTORY OF UNITED STATES I 3 cr</td>
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<tr>
<td>From the Revolution to 1890 with the emphasis upon the establishment of the nation and its diplomatic methods and goals</td>
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<tr>
<td>352 DIPLOMATIC HISTORY OF UNITED STATES II 3 cr</td>
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<tr>
<td>The second half of the course will be Diplomatic History of the United States 1890 to 1939. Emphasis is placed upon involvement of the United States in both World Wars and its role as an imperial power</td>
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<tr>
<td>357 HISTORY OF THE AMERICAN PRESIDENCY 3 cr</td>
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<tr>
<td>Primarily an investigation and evaluation—personal, political, contemporary, and historical—of each president with some attention to the growth of the office</td>
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<tr>
<td>358 CIVIL WAR AND RECONSTRUCTION 3 cr</td>
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<tr>
<td>An intensive study of the American experience before and after the War for the Union</td>
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<tr>
<td>360 CONSTITUTIONAL HISTORY OF THE UNITED STATES 3 cr</td>
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<tr>
<td>An analysis of the Supreme Court and constitutional development, stressing the major controversies in the field</td>
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<tr>
<td>361, 362 HISTORY OF THE UNITED STATES' POLITICAL PARTIES 3 cr each</td>
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<tr>
<td>A detailed examination and analysis of the origins, leadership, and operation of the major political parties in the U.S.</td>
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**INTELLECTUAL AND CULTURAL HISTORY**

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<thead>
<tr>
<th>Course Title</th>
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<tbody>
<tr>
<td>363 CULTURAL HISTORY OF MEDIEVAL EUROPE 3 cr</td>
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<tr>
<td>The development of the body of literature, secular and religious, from the decline of the Roman Empire to the Renaissance</td>
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<tr>
<td>365 THE ORIGINS OF THE MODERN MIND 3 cr</td>
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<tr>
<td>Intellectual changes between 1300 and 1800 that set the stage for the modern temper</td>
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COLLEGE OF LIBERAL ARTS AND SCIENCES

366 THE MODERN MIND 3 cr
The major ideological tendencies of modern European thought and their connection to society and politics, and to the major philosophical and scientific currents of the nineteenth and twentieth centuries

367 THE IMPACT OF SCIENCE ON SOCIETY 3 cr
The economic, social and cultural consequences of the rise of modern science

368-369 THE AMERICAN MIND I, II 3 cr each
The origins, development, and contemporary modes of American thought, including major "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, role 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 REVOLUTIONS IN THE MODERN WORLD 3 cr
An analysis of the major political and social revolutions in Europe since 1879, 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 light of the political, economic, social, intellectual, and psychological tensions which produced them

SOCIAL HISTORY

370 CURRENT HISTORY 3 cr
What are the major forces affecting our lives today? Where do they come from? Where will they lead to? Resources will be current media such as newspapers, TV, etc.

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 interrelations of the social classes in Russia and the Soviet Union, and in East Central and South-eastern 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 development of the United States before the Civil War, emphasizing its 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

395 URBAN HISTORY UNITED STATES 3 cr
The rise of urban America, from the colonial period to World War I

396 HISTORY OF AMERICAN IMMIGRATION SINCE 1880 3 cr
Focuses on the nature and problems of the more recent immigrant, his cultural contributions, the effects of selectivity and changing nativity attitudes

397 REFORM IN MODERN AMERICA 3 cr
A study of political, economic, and social reform movements in the United States since the late nineteenth century

398 ECONOMIC HISTORY OF THE UNITED STATES SINCE 1865 3 cr
Investigates the economic development of the United States after the Civil War, emphasizing its impact on social and political issues

399 THE SEARCH FOR IDENTITY—UNITED STATES SINCE 1945 3 cr
A discussion of selected contemporary issues, foreign and domestic, which illustrate the identity crisis in the United States

HISTORIOGRAPHY

481 THE MODERN HISTORIAN 3 cr
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 3 cr
Emphasizes the conflict among historians over interpretations of significant events in European history

484 SPECIAL PROBLEMS IN AMERICAN HISTORY 3 cr
Emphasizes the conflict among historians over interpretations of significant events in American history

JOURNALISM

Chairman NANCY C JONES, Ph D

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 rests on the liberal arts tradition. The journalism curriculum concentrates upon the development of communicative skills for creative and responsible positions in such areas as 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 or 476

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

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. Open to non-majors. Prerequisite 267.

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 documentary 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 COMMUNICATIONS 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 preparing 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 development, 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, 376.

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, news, 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 Pennsylvania teacher's certificate in communication with emphasis in high school journalism. 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 commercial/educational broadcasting station in the Pittsburgh area. Prerequisites 167, 267, 367, 369, 370, 376, 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 assignment to an assigned public relations agency, association, industrial, or non-profit educational group in the Pittsburgh area. Prerequisites 167, 267, 367, 369, 375, 376, 420, 430. (Offered both semesters)

485 INDUSTRIAL ADVERTISING 3 cr
Deals with the principles and practices of industrial marketing communications. Emphasis will be placed on trade-paper ads, direct-mail advertising, descriptive product folders, sales letters and presentations. Examination will be made of related crafts such as commercial art, typography, printing, plate-making and media selection. Prerequisites 167, 267, 268, 367, 369, 376.

490 INDIVIDUAL PROJECTS IN MASS COMMUNICATIONS 1-3 cr
Individual research projects in the mass media. Open to junior and senior majors only. Prerequisite Permission of instructor and department chair.
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 concerning 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 seniors 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 seniors are encouraged to seek departmental approval to include 500 level mathematics courses listed in the graduate catalog.

Twenty hours of science courses is an extra-departmental requirement, this must include Physics 211, 212. The remaining courses may be selected from Biology 111, 112 and 226 and above, Chemistry 121 or higher, and Physics above 212.

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, 215, 216, 315, 321 are recommended.

For economics and social science majors, 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 FINITE MATHEMATICS I, II 3 cr each
A course meeting the needs of non-science students in the College for an introduction to some of the applications of mathematics in the world today. It provides an introduction to matrices and linear systems, linear programming, probability and statistics, game theory and computers. Not counted toward a major or minor.

105 COLLEGE ALGEBRA AND TRIGONOMETRY 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.

109 COLLEGE ALGEBRA 3 cr
A traditional course in college algebra for students who are not prepared for 115. Not counted toward a major or minor. Credit will not be allowed for both this course and 105.

111 CALCULUS FOR NON-SCIENCE STUDENTS 3 cr
Differentiation and integration of algebraic, logarithmic, and exponential functions, maxima and minima, area, exponential growth. Not counted toward a major or minor. Credit will not be allowed for both this course and 115.

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. Prerequisite 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.

216 ORDINARY DIFFERENTIAL EQUATIONS 3 cr
The course includes solutions, existence of solutions, and applications of differential equations. Prerequisite 215.
DEPARTMENT OF MODERN LANGUAGES AND LITERATURES

Chairman  FRANCES COLECCHIA, 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, 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 primary 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.

COLLEGE OF LIBERAL ARTS AND SCIENCES

ratic residues, diophantine equations and arithmetical functions. Prerequisite Proficiency at 105 level

315 ADVANCED DIFFERENTIAL EQUATIONS  3 cr
Principally theoretical, this course considers the methods of solutions as well as existence and uniqueness of solutions, applications, and partial differential equations. Prerequisite 215
Not offered in regular sequence, but available on request.

403 INTRODUCTION TO POINT SET TOPOLOGY  3 cr
A survey of elementary topics including topological spaces, compactness, connectedness, convergence and separation axioms. Prerequisite 215 Not offered in regular sequence, but available on request.

405 INTRODUCTION TO COMPLEX VARIABLES  3 cr
Topics include the plane of complex numbers, functions of a complex variable and integration in the complex plane. Prerequisite 216 Not offered in regular sequence, but available on request.

415, 416 ADVANCED CALCULUS I, II  3 cr each
A rigorous study of the calculus and its foundation. Prerequisite 216

431 INTRODUCTION TO BIOSTATISTICS  3 cr
Intended primarily for upper level pharmacy and biology students, acquaints the student with some of the common statistical techniques applied to research and data analysis in the life sciences. Not counted toward a major.

491 to 499 SELECTED TOPICS IN MATHEMATICS  1-3 cr each
This is an honors course. Topics selected in consultation with staff.

MODERN LANGUAGES AND LITERATURES

REQUIREMENTS FOR THE MAJOR
The department offers major programs in French, German, and Spanish, and nonmajor 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, 465, 466  Majors will discuss their courses with the Director of the Section.

German  301, 302, 463, 464  Majors will discuss their courses with the Director of the Section.

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.

351 INTRODUCTION TO THE STUDY OF LANGUAGE  3 cr each

491 EUROPEAN LITERATURE IN TRANSLATION  3 cr each
Translation taken from German, French, Spanish, Russian or a combination of those languages.

FRENCH

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.

201, 202 INTERMEDIATE FRENCH  3 cr each
An intensified review and continuation of 101, 102. Prerequisite 102 or equivalent.

211, 212 INTERMEDIATE FRENCH FOR READING  3 cr each
Prerequisite 102 or 112.

239, 240 READINGS IN MODERN FRENCH AUTHORS  3 cr each
Selections from modern works of literature. Does not carry credit toward a major.

301, 302 FRENCH CONVERSATION AND COMPOSITION  3 cr each
These two courses, or their equivalents, are prerequisites for all of the following courses.

312, 314, 316 LITERATURE WORKSHOP  3 cr each.
COLLEGE OF LIBERAL ARTS AND SCIENCES

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 history of philosophy level and at least two other courses have to be at the 400 thematic level.

REQUIREMENTS FOR THE MINOR

Requirements for a minor are 104, 205, any three from among 201 202,
300, 303, 304, 305, 323, 403, 400 level courses may be taken with permission of the department chairman.

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.

For the College philosophy requirement, a 100 level course must be taken before upper level courses.

**INTRODUCTORY COURSES**

104 INTRODUCTION TO PHILOSOPHY 3 cr
A first-hand study of selected philosophical texts from both traditional and existential perspectives with the aim of introducing students to the nature of philosophical thinking, and to the variety of philosophical issues, areas, methods, and theories.

105 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.

106 LOGIC 3 cr
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.

**BASIC THEMATIC COURSES**

201 PHILOSOPHY OF KNOWLEDGE 3 cr
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.

202 PHILOSOPHY OF BEING 3 cr
The approaches of philosophers such as Aristotle, Aquinas, Kant, Hegel and Heidegger. God, world and man. Being, essence and existence. Time and history. Being and the possibility of metaphysics in contemporary thought.

203 PHILOSOPHY OF RELIGION 3 cr
An introduction to the distinctive nature of religious symbols and 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 3 cr
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 3 cr
Introduction to the methods central commitments, and style of interpretation 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.

206 PHILOSOPHY OF SOCIETY 3 cr
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 3 cr
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 3 cr
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 3 cr
Similar to, but more elementary than, 325.

210 PHILOSOPHY OF FEMININITY 3 cr
A philosophical study of “the second sex,” emphasizing phenomenology as a method which attempts to be free from prejudice. Includes a discussion of some contemporary ethical and legal issues concerning the equality of women. Designed especially for non-majors.

**HISTORY OF PHILOSOPHY COURSES**

300 ANCIENT PHILOSOPHY 3 cr
A study of the beginning of philosophy in Greece, from the Presocratics to Plotinus with readings principally taken from Plato and Aristotle.

301 MODERN PHILOSOPHY 3 cr
A study of modern philosophy from 1800 to the present, introducing the methods and history of selected twentieth-century movements with detailed attention to existential phenomenology.

302 NON-MAJOR'S COURSES 3 cr
Similar to, but more elementary than, 325.

303 CONTEMPORARY PHILOSOPHY 3 cr
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.

304 PHENOMENOLOGY 3 cr
A study of the philosophy of mind and the philosophy of art. The writings of thinkers such as Husserl, Heidegger, and Merleau-Ponty are read to understand the nature of the mind and the nature of perception.

305 CONCENTRATED PHILOSOPHICAL READINGS 3 cr
A course dealing with the works of St. Thomas.

306 PHILOSOPHY OF THE MIDDLE AGES 3 cr
A course dealing with the works of St. Thomas.
in ontology, epistemology and the philosophy of
man Neothomism (Mantau and Gison)
together with reference to Transcendental
Thomism (Rahner, Lonergan, etc.)

**403 PHILOSOPHY OF GOD** 3 cr
Thematic course focusing especially on the
experiential and conceptual relationships
among the themes God, nature, freedom and
morality.

**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 FOUNDATION OF ETHICS** 3 cr
A study of the philosophical foundations of
Ethics. Foundational theories of Greek and
Scholastic philosophy. Modern and con-
temporary ethical theories of foundation.

**409 SYMBOLIC LOGIC** 3 cr
An introduction to the methods of symbolic
logic.

**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 funda-
mental 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.

**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 praxis, transcendence.

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**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.

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**PHYSICS**

**REQUIREMENTS FOR THE MAJOR**
A minimum of 32 semester hours is required for a major. These credits must
include 211, 121, 301, 329, 330, 361, 372, 402, 429, 430, 473, 474 (483,
484, or 485 may be substituted for 474 with departmental approval).

*Extracurricular Requirements*
Chemistry 121, 122 or Biology 111, 112, Mathematics 115, 116, 215, 216, 321, and two years of a modern
language.

If a student takes 207, 208-Physics and the Modern World and elects 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 a prerequisite 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.
Earth Science 101 is prerequisite to all courses.

**201, 202 GENERAL
PHYSICS** 4 cr each
Designed to give the student a basic knowledge
and understanding of mechanics, properties of
matter, heat, wave motion, sound, magnetism,
electricity, light, and modern physics through
the use of modern day examples and applica-
tions. At the completion of this course, the
student should have attained a working
knowledge of physics, its techniques and rea-
soning such that the knowledge of physics
earned may be applied to future work in the
sciences or other fields of endeavor. Pre-
requisite: Mathematics 103, 104 or the equiva-
 lent. Students who have completed Math-
ematics 116 and pre-engineering students
should take 211, 212. Lecture, four hours. Laboratory,
two hours.

**207, 208 PHYSICS AND
THE MODERN WORLD** 3 cr each
A course for nonscience students. 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 effort 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,
gravity, wave motion, the first and second laws
of thermodynamics, electricity and magnetism,
optics. Corequisite: 211 Mathematics 116
Lecture, three hours. Laboratory, two hours.
of particles, covered are dynamics of a mass point, systems
An intermediate course in the application of
instructor
includes the following items basic, senii-
conductor electronic devices, transistor airiph-
330 ADVANCED LABORATORY 
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 
This course is concerned with electromagnetic
phenomena and basics 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 
A continuation of Advanced Laboratory I and
includes the following items basic, semi-
conductor electronic devices, transistor amplifiers
and oscillators, the klystron and micro-
wave optics. Prerequisite 329 or consent of
instructor
361 MECHANICS 
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 212, Mathematiques 215
372 ELECTROMAGNETISM 
The following topics are usually discussed
electrodynamics, 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 sheet radiation. Prerequisites 212, Mathematiques 215
402 OPTICS
This course introduces the student to classical
principles of geometrical and physical optics
and shows how these are applied in the con-
struction of optical instruments. Reflection,
refraction, interference, diffraction, and polariza-
tion phenomena are treated, as well as
an introduction to quantum optics. Prerequisite
202 or 212, or consent of instructor
429, 430 ADVANCED LABORATORY III, IV
1 cr each
Advanced Laboratory 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 asso-
ciated 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 com-
pletion of the project
473 ATOMIC PHYSICS
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 prin-
ciple, quantum theory of the hydrogen atom,
many-electron atoms, atomic spectroscopy. Prere-
quisites 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 212, Mathematiques 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 as-
pects 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 reac-
tions, and nuclear fission. Prerequisites 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,
band theory, 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, space and time on a four-vector, relativistic
crystal mechanics. Prerequisites 212, Mathematiques 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 tech-
niques, mechanical drawing and schematics,
electronics construction techniques and prac-
tical application
487 PROBLEMS IN PHYSICS
14 cr
Special topics and problems in physics and
related subjects suitable for independent work
Earth Science
101 PHYSICAL GEOLOGY
3 cr
(Prerequisite to all Earth Science courses)
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 the
processes of the earth, as presented understood,
which have created these 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 will some field equipment
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
basis of observation. Study will include tele-
copic types and the known universe as identi-
fied 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. A weather station has been installed on Mellon Hall, and observation and prediction will be practiced. Local and U.S. Weather Bureau services will be used and analyzed when possible.

303 OCEANOGRAPHY
An introduction to the marine environment including the geology and ecology. Attention is paid to the importance of dangers to 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 PHYSIOGRAPHY OF THE UNITED STATES
Introduces the student to the various topographical and physiographical 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 208, 309, and 405 or 406.
Political Science 101 is prerequisite to all courses

REQUIREMENTS FOR THE MINOR
General Minor in Political Science. This minor is designed to provide the student with a comprehensive view of the entire discipline and is recommended for those students who may later contemplate graduate study or think that they might eventually like to change from a minor to a major in Political Science. It consists of a minimum of 13 credits beyond the freshman course, 101, the 13 credits encompass the following required courses 208, 221, 222, 309, and 405 or 406.
The Concentrated Minor Students wishing to concentrate in a particular area of Political Science may elect the following minors:

1. American Government 221, 222, and a minimum of eight credits from among 231, 240, 241, 242, 276, 301, 302, and 407
2. Comparative Government 208 and a minimum of nine credits from among 315, 316, 318, 321, 408, 412, and 413
3. International Relations 309 and a minimum of nine credits from among 215, 312, 320, 402, and 409
4. Political Theory 405, 406, and a minimum of six credits from among 306, 407, 410, and 420

The Selective Minor The Department of Political Science will also devise a minor from its course offerings to fulfill the particular needs and desires of a student in any major area of concentration, such a minor must be structured in consultation with the student's faculty adviser and the department chairman.

101 INTRODUCTION TO POLITICAL SCIENCE 3 cr
(Prerequisite to all courses.)
An investigation of the most fundamental concepts involved in the study of political society.

205 COMPARATIVE POLITICAL SYSTEMS 3 cr
A systematic, multifaceted analysis of selected political systems.

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.

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 opinion 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.
### COLLEGE OF LIBERAL ARTS AND SCIENCES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>302</td>
<td>MUNICIPAL GOVERNMENT</td>
<td>2 cr</td>
</tr>
<tr>
<td>306</td>
<td>COMPARATIVE COMMUNIST POLITICAL SYSTEMS</td>
<td>3 cr</td>
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<tr>
<td>309</td>
<td>INTERNATIONAL RELATIONS</td>
<td>3 cr</td>
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<tr>
<td>312</td>
<td>INTERNATIONAL LAW AND ORGANIZATION</td>
<td>3 cr</td>
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<tr>
<td>315</td>
<td>POLITICS OF THE EMERGING NATIONS</td>
<td>3 cr</td>
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<tr>
<td>316</td>
<td>POLITICS OF AFRICA</td>
<td>2 cr</td>
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<tr>
<td>318</td>
<td>NATIONALISM</td>
<td>3 cr</td>
</tr>
<tr>
<td>320</td>
<td>UNITES STATES FOREIGN POLICY</td>
<td>3 cr</td>
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<tr>
<td>321</td>
<td>GOVERNMENT AND POLITICS OF EASTERN EUROPE</td>
<td>3 cr</td>
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<tr>
<td>325</td>
<td>JUNIORS HONOR SEMINAR</td>
<td>2 cr</td>
</tr>
<tr>
<td>402</td>
<td>SOVIET FOREIGN POLICY</td>
<td>3 cr</td>
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<tr>
<td>403</td>
<td>AMERICAN POLITICAL SYSTEM</td>
<td>3 cr</td>
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<tr>
<td>404</td>
<td>SIMULATION IN INTERNATIONAL POLITICS</td>
<td>3 cr</td>
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<td>405</td>
<td>WESTERN POLITICAL THOUGHT</td>
<td>3 cr</td>
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<tr>
<td>406</td>
<td>AMERICAN POLITICAL THOUGHT</td>
<td>3 cr</td>
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<tr>
<td>407</td>
<td>THEORY OF COMPARATIVE GOVERNMENT</td>
<td>3 cr</td>
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<tr>
<td>409</td>
<td>THEORY OF INTERNATIONAL RELATIONS</td>
<td>3 cr</td>
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<tr>
<td>410</td>
<td>ORIENTAL POLITICAL THOUGHT</td>
<td>3 cr</td>
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</tbody>
</table>

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 count toward 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.

A minimum of 15 credits in psychology must be taken at Duquesne University for the major.

REQUIREMENTS FOR THE MINOR

Requirements for a minor are 103 and 223 and any three of the following: 225, 280, 328, 340, 352, 361, 390, plus 400 level courses with permission of the department head. A minimum of nine credits in psychology must be taken at Duquesne University for the minor.

103 INTRODUCTION TO PSYCHOLOGY
(Prerequisite to all courses)
3 cr
Introduction to fundamental concepts and methods of psychology, examined from both traditional and phenomenological perspectives. Prerequisite for all other departmental courses.

220 SYSTEMATIC PSYCHOLOGY
3 cr
For majors only. Traditional approaches (behavioral, physiological, psychoanalytic) to sensation, perception, learning, and motivation. Required for majors.

223 INTRODUCTION TO EXISTENTIAL-PHENOMENOLOGICAL PSYCHOLOGY
3 cr
Introduction to a human-science alternative to psychology as a natural science. Prerequisite for 356 and 410, required for majors and minors.

225 DEVELOPMENTAL PSYCHOLOGY I
(INFANCY AND CHILDHOOD)
3 cr
Growth and development of the child, with emphasis on personality development.

226 DEVELOPMENTAL PSYCHOLOGY II
(ADOLESCENCE AND MATURITY)
3 cr
Development from adolescence, through adult stages, to coping with death.

227 HUMAN DEVELOPMENT
3 cr
Basic principles of human development over the life span. (Restricted to Education and Nursing students.)

230 PSYCHOLOGY OF COMMUNITY EXPERIENCE
3 cr
Experience of community phenomena, e.g., individual versus group priorities, intimacy vs. privacy.

280 HISTORY OF PSYCHOLOGY I
3 cr
Overview of figures and issues in the history of psychology, from precursors to present.

328 PSYCHOLOGY OF PERSONALITY
3 cr
Critical examination of major theories of personality.

340 SOCIAL PSYCHOLOGY
3 cr
Foundations of social processes, attitudes, values and roles, public opinion, propaganda and communication, personal participation in society.

352 ABNORMAL PSYCHOLOGY
3 cr
Examination of theories and data on disordered human existence.
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 and 304, in addition, 210 and 314 are strongly recommended.

REQUIREMENTS FOR THE MINOR
A minimum of 12 semester hours, not including 101, are required for a minor. 450, 451, 488, and 492 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 211 and 306. All 300 and 400 courses are for juniors and seniors only.

101 SURVEY OF SOCIOLOGY 3 cr.
A broad survey of the social and cultural aspects of environment.

102 SURVEY OF ANTHROPOLOGY 3 cr.
An introduction to the field of Anthropology, both physical and cultural.

195 MILITARY IN SOCIETY 3 cr.
A study of the organizational setting, the social processes and recent fundamental changes of the American military.

201, SOCIOLOGICAL THEORIES 3 cr.
A study of selected European and American theorists. For sociology majors and minors only.

202 SOCIOLOGY OF SOCIAL PROBLEMS 3 cr.
Study of person-structure-change framework applicable to contemporary social issues.

203 SURVEY OF SOCIAL WORK 3 cr.
Survey of the history and areas of social work: casework, group work, and community organization, public and private welfare programs.

205 PERSON AND SOCIETY 3 cr.
An exploration of socialization, person's interaction with structure and culture, small groups and collective behavior.

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

211 COMPARATIVE CULTURES 3 cr.
A study of selected world cultures focusing on their structure, functions, and normative systems.

212 PROCESS I SOCIAL WORK THEORIES 3 cr.
Discussion of theory for social work practice, its social psychological, and process bases.

304 METHODS IN SOCIOLOGY 3 cr.
Discussion and application of techniques and research procedures used in sociological research.

SOCIOMETRY

306 PERSONALITY AND CULTURE 3 cr.
A cross-cultural examination of human social systems in terms of their relevance to personality development and interaction.

308 ETHNIC GROUPS 3 cr.
A comprehensive survey of roles performed and problems faced by ethnic groups.

309 WOMEN IN SOCIETY 3 cr.
The role of women in culture, and the study of women's movements for liberation.

312 SOCIOLOGY OF SPORTS 3 cr.
Study of the institutions of sports and their relation to American culture and other institutions.

313 SOCIOLOGY OF SEXUAL BEHAVIOR 3 cr.
Discussion of sociological studies of sexual behavior.

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

315 SOCIAL DEVELOPMENT—INFANCY TO DEATH 3 cr.
Study of the socializing process from the infant state to the dying state.

316 THE HELPING PROCESS: AN INTRODUCTION 3 cr.
Discussion of the social process of helping others, ranging from the consideration of the professional, the population a person serves and the dynamics of the interaction. The perspective is personal-social.

317 AGED AND SOCIAL SERVICE 3 cr.
A study of problems associated with the elderly and the social services developed to assist them.

325 FAMILY SYSTEMS 3 cr.
Comparative study of the family, the interaction of the family with other community institutions.

340 AFRO-AMERICAN MINORITY 3 cr.
Concentration on the structure and culture of the Afro-American group with its attendant problems.

410 SOCIOLOGY OF AGING 3 cr.
Discussion of the socialization, role, subcultural and problem aspects of aging.

411 AGING AND HEALTH 3 cr.
Discussion of medical aspects of aging, diseases of aging, and health maintenance.

444 SOCIAL LEGISLATION—SOCIAL SECURITY PRESENT DAY 3 cr.
Study of the various agencies which have been established to provide for needs of social workers.

445 COMMUNITY AGENCY RESOURCES AND REFERRAL 1 cr.
Study of the various agencies which have been established to provide for needs of social work clients.

446 PROCESS II CASEWORK 3 cr.
Study of casework as a social work process.

447 PROCESS III GROUP WORK AND COMMUNITY ORGANIZATION 3 cr.
Examination of group processes and community organization strategies utilized in social work.

326 URBAN SOCIETY AND ECOLOGY 3 cr.
Analysis of the metropolitan complex of central city, suburbs, and urban fringe, and its impact on structure within its environs.

329 RELIGION IN AMERICAN SOCIETY 3 cr.
An analysis of American religious groups as social phenomena.

334 DELINQUENCY 3 cr.
A study of the phenomenon, theories and causation of juvenile delinquency.

335 CRIMINOLOGY 3 cr.
A study of sociological explanation of criminality, correlates, causation and criminal conditions.

54 COLLEGE OF LIBERAL ARTS AND SCIENCES
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, administration, 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. Along with classroom theory, students will have opportunity to obtain practical experience onstage 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, 390, 405, 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.

Recommended courses 190, 201, 301, 307, 309, 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 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.

Recommended courses 201, 203, 204, 303, 308, 409, 410, 420

Co-requisites Mathematics 225 and Psychology 226, 340 are recommended.

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
2. Theatre/Media 190, 201, plus 12 credits in any of the following: 200, 305, 306, 307, 309, 310, 390, 405
3. Aesthetics of Communication 190, 201, plus 12 credits in any of the following: 301, 307, 309, 310, 419
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: 308, 410, 420
5. General Speech Communication and Theatre 190 and either 101 or 102, with 12 additional credits appointed 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, 390, 405, 419

Suggested activities for majors and minors in Speech Communication and Theatre include the Red Masquer Dramatic Organization, WDQ Radio and Television, the Debate Team, the Duke (student newspaper), and United Nations Organization. Suggested courses for fulfilling Communication Area requirements for non-Speech majors are 101, 102, 190, 201

101 PROCESS OF COMMUNICATION 3 cr

Provides an understanding of the nature of the communication process by examining man from the perspective of how he behaves.

102 TECHNIQUES OF ORAL COMMUNICATION 3 cr

Develops those 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 3 cr

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 3 cr

The application of the principles of proper delivery to the field of oral reporting and commentary, including enunciation, pacing, selective emphasis, tonal variance, the use of technical material, and an introduction to foreign language pronunciation. The facilities of WDQ-TV will be available for laboratory experience.

201 PHONETICS 3 cr

An approach to the English language based upon the fundamentals of vocal and articulatory speech sounds as systematized by the International Phonetic Association.

203 INTRODUCTION TO PROBLEMS IN SPEECH 3 cr

A survey of various speech disorders, their causes, recognition, and possible therapy.

SPEECH COMMUNICATION AND THEATRE

204 INTERPERSONAL COMMUNICATION 3 cr

A course designed to investigate the various aspects of interpersonal communication. Primary consideration will be given face-to-face human interaction in a variety of situations.

206, DISCUSSION AND GROUP PROCESS 3 cr

Develops those communicative skills essential to functioning effectively in the small-group setting.

300 ARGUMENTATION AND DEBATE 3 cr

A course in applying the principles and methods of critical deliberation to a significant contemporary social issue. Emphasis will be on advocating, defending, and refuting a proposition of policy. Prerequisite 102 or permission of the instructor.

301 ORAL COMMUNICATION OF LITERATURE 3 cr

An approach to literature in terms of its oral traditions with special emphasis on techniques preparatory to the act of oral presentation.

303 CLINICAL TECHNIQUES IN SPEECH PATHOLOGY 3 cr

This course will focus upon the clinical management of speech and hearing problems. Past and current therapeutic approaches and techniques will be presented in relation to disorders of speech and hearing. Different organizational procedures and practices will also be included. Prerequisite 203 or permission of the instructor.

304, PERSUASION 3 cr

A study and application of principles and practices that influence people's beliefs and actions. Prerequisite Either 101 or 102 or permission of the instructor.

305 DEVELOPMENT OF THE THEATRE 3 cr

A study of the origin and development of theatre and drama from pre-Greek civilizations to the seventeenth century, investigated in light of the particular world view which it expresses.

306 DEVELOPMENT OF THE THEATRE II 3 cr

A study of the development of theatre and drama from the seventeenth century to the early twentieth century, investigated in light of the particular world view which it expresses.

307 ACTING I 3 cr

A study of the basic principles, theories, and techniques of acting, including various problems confronted by the actor in the creation and interpretation of a role.

308 ANATOMY AND PHYSIOLOGY 3 cr

This course will study the basic neurological, skeletal, and muscular structures involved in the speech and hearing process. Prerequisite 203 or permission of the instructor.

309, ADVANCED ORAL COMMUNICATION OF LITERATURE 3 cr

A continuation of 301, with special emphasis on techniques for the oral presentation of specific literary genres. Prerequisite 301.

310 ACTING II 3 cr

An advanced course dealing with the principles and techniques of various acting styles 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.

322 SPEECH PATHOLOGY EXTERNSHIP 3 cr

Provides opportunities for observation of various aspects of clinical work. Directed readings and field trips are included. Prerequisite Concentration majors only. Written permission of department chairman required. Open to juniors only.

390 STAGE DIRECTING 3 cr

Studies principles, theories, and practices involved in the staging of a play for performance, emphasizing problems of staging and interpre-
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 religious witnesses in history, 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 THE BIBLE 3 cr
A presentation of tools necessary to understand the Old and New Testament as ancient literary works, affording a unified view of historical events, as well as the prominent religious experiences reflected in these events, emphasis on practical interpretation of biblical passages with ample exercises provided.

214 SPECIAL INTRODUCTION TO THE OLD TESTAMENT 3 cr
A presentation of the Old Testament writings in their dynamic context of culture, politics, and geography, as well as an introduction to their literary modes, theologies, and themes, including practical approaches to interpreting key passages of the Old Testament.

215 SPECIAL INTRODUCTION TO THE NEW TESTAMENT 3 cr
A presentation of the books of the New Testament from the point of view of their literary makeup, historical origins and testimony, and theological content, practical approaches in interpreting key passages of the New Testament.

313 ARCHAEOLOGY AND THE BIBLE 3 cr
An illumination through archaeology of the historical setting the cultural background, and the events described in the Bible, a general
introduction to the techniques of archaeological investigation and a study of the principal archaeological sites in Palestine

321 JESUS IN THE GOSPELS 3 cr
A portrait of the person of Jesus, elements of such a portrait drawn exclusively from an in-depth study of the four gospels, with ample usage of accepted scholarship on who does Jesus say He is and who do others say He is

413, THEOLOGY OF THE OLD TESTAMENT 3 cr
An examination of the various books or blocks of writing in the Old Testament as to their theology, an attempt to draw together and present the major themes, motifs, and concepts of the Old Testament; a study of the relationship between the Old Testament and the New Testament

414 THEOLOGY OF THE NEW TESTAMENT 3 cr
A presentation of the major theological traditions of the New Testament, emphasizing the diversity of Christian beliefs and practices, as well as the underlying unifying principles of the early Christian experience, an explanation of advanced techniques of biblical interpretation with opportunity for the student to practice such techniques

490 FIELD EXPERIENCE IN BIBLICAL ARCHAEOLOGY 6 cr
Six weeks of supervised participation in an archaeological excavation in the Ancient Near East, experience in stratigraphic digging, pottery identification, scientific analysis of finds, and recording methods. Offered every two or three years, approval of participants by core staff required

CHRISTIAN STUDIES

140 CHRISTIAN UNDERSTANDING OF MAN 3 cr
An investigation into the question of "What does it mean to be human?", according to Judaism, Christian teaching, a discussion of the relationship of the human person to self, others, the world, and the Divine as the basis for humanness, a study of the issues involved in these four relationships, e.g., freedom, grace, contemplation

260 ORIGINS OF PROTESTANTISM 3 cr
An introduction to the thought of the principal reformers: Luther, Calvin, Zwingli, Wesley. A study of speculative and practical forces operative in the fifteenth-sixteenth centuries which gave rise to the reforming movement, the formulation of Protestant orthodoxy

274 CHURCH HISTORY I 3 cr
A religious and historical exploration of the growth of Christianity from the first century up to the Reformation, discussion of those issues within the Church and the external forces which brought about major conflict and development

275 CHURCH HISTORY II 3 cr
Selected topics in Catholic and Protestant development from 1500 to the present day, special emphasis on the crises, revolutions, and reforms that were central to this development

351 SEXUALITY, SEX, AND MORALITY 3 cr
An analysis of the nature of sex and sexuality, according to the sources and developments of Christian thought, the integration of these concepts into a moral and ethical system, some modern reflections on Christian sexual morality.

352 VALUE OF HUMAN LIFE AND CURRENT ETHICAL PROBLEMS 3 cr
A discussion of the fundamental moral principles involved in making any of the "life decisions," the problem of the definition of life, a survey of the varied moral approaches to the issues of war and peace, capital punishment, abortion, birth control, euthanasia, genetic engineering, and the new embryology

361, QUESTIONS IN PROTESTANT THEOLOGY 3 cr
An analysis of current issues in Protestant theology, e.g., the authority of Scripture, the mission of the Church, the relationship between the historical study of the gospels and dogmatic

CHRISTIANITY, the question of God-in-process, the Spirit and teaching authority.

370 EARLY CHRISTIAN THOUGHT 3 cr
A study of the early Christian thinkers with emphasis on the Apostolic Fathers, the Apologists, Origen, Athanasius, the Cappadocian Fathers, Tertullian, and Augustine as they interpret Christian revelation and lay groundwork for the systematic development of Catholic theology

470 CHRISTIAN MYSTICISM 3 cr
A study of the manifold Christian experience of mysticism, e.g., experiential contact with God, as seen in famous exemplars of mystical experience: Jesus Christ, Paul, Ignatius of Antioch, Augustine, John Rauschen, Catherine of Siena, Theresa of Avila, John of the Cross, Venerable Liberman, et al.

471, EASTERN CHRISTIAN THEOLOGY 3 cr
A study of the main theological developments in the Eastern Church from the Patristic age on through the medieval times until the modern days as they shape its distinctive spirit and mentality and as they are interpreted in the Eastern Orthodoxy

Roman Catholic Theology

106 RATIONAL FOUNDATIONS OF THE CATHOLIC FAITH 3 cr
An investigation of the reasonableness of the Catholic Faith, beginning with an inquiry into the existence of God and the possibility of His intervention in human affairs; study of the Gospels as reliable documents, of Christ's claim to be God, His life, works, and especially His resurrection, of His founding of Church and its identity today

201 INTRODUCTION TO THEOLOGY AND THEORETICAL METHOD 3 cr
An inquiry into, and an analysis of, the resources of theology and revelation, inspiration and Church teaching, a presentation of the various approaches to theological study and the schools of theological thought in Christianity

202 CATHOLICISM 3 cr
An explanation of the major beliefs and practices of Roman Catholicism, including the nature and work of the God-Man as well as the privileges of Mary; study of the nature of the Church and its ministry in teaching, consideration of the norms of morality, the Commandments, the Sacraments, and the spirit of Catholicism

220 THE MYSTERY OF CHRIST 3 cr
A study of the person and meaning of Christ in historical and contemporary perspective, a discussion of the new bond between God and man and the new era in the spiritual destiny of mankind inaugurated by the Incarnation and the Passion-Death-Resurrection event

230 THE CHURCH 3 cr
A study of the Christian community of believers in its origins, some of its major historical and dogmatic emphases, and its contemporary understanding of itself, the Church as a mystery, as Mystical Body, as People of God, as Sacrament

242 CONTEMPORARY THEOLOGICAL ISSUES 3 cr
An examination of theological developments in an era of renewal, reconciliation, and cooperation e.g., belief and unbelief, Christian and secular humanism, the future with reference to hope, heaven, hell, afterlife, reincarnation, and resurrection, sin in a secular age suffering and evil, the occult, the charismatic movement within the Church

250 MORAL PERSPECTIVES IN HUMAN DEVELOPMENT 3 cr
A study of the basic issues involved in the formulation of moral values within the developing person, and of the sources upon which moral systems are based, a discussion of the absolute vs the relative, traditional morality vs "the new morality," an application of these principles to a few modern problems, e.g., homosexuality, drugs, consumerism

256 GOD AND HIS MEANING 3 cr
A theological understanding of the problem of God, a consideration of the responses of various
301 MARRIAGE 3 cr
A personally oriented and practical treatment of the marital union as seen in its Christian theological, psychological, and sexual aspects, a discussion of Christian marriage as a bond of love, as a sacrament, and as a way of human fulfillment.

330 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, consideration from the Scriptures of the missionary activity of Christ and the Apostles, the problem of universality, evangelization versus catechesis, historical evolution of the Church's missionary activity, evangelization and cultural evangelization, and the diversity of Christianity.

331 THE CHURCH IN THE MODERN WORLD 3 cr
An analysis of the Church's role in the development of man today, and in offering solutions to present problems of humanity in light of Vatican II's "Pastoral Constitution on the Church in the Modern World" and other related documents.

335 THEOLOGY OF THE SACRAMENTS 3 cr
A theologically practical treatment of the seven sacraments in relation to their significance for the Christian's daily spiritual growth and fulfillment, consideration of man's needs for ritual and symbol, discussion of recent revisions and developments in sacramental theology.

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, his experience of sin and alienation, and his liberation by divine grace, given through his union with the Risen Christ.

475 THEOLOGY AND CATHECHESIS 3 cr
An examination of the principal theological and pedagogical themes of modern religious education, and of the place of catechesis in the ministry of the Church, a presentation of the historical background of the contemporary catechetical renewal.

498 SEMINAR 3 cr
A critical analysis of selected topics in theology or of selected works by outstanding theologians open only to juniors and seniors with a major in minor in theology.

SELECTED RELIGIOUS STUDIES

180 THE PHENOMENON OF RELIGIOUS EXPERIENCE 3 cr
An examination of the dimensions of mankind's religious experience, e.g., mystical, ritual, mythical, ethical and scriptural, an analysis of the likenesses and differences of how the Divine is sensed and responded to in varied geographical, cultural, and chronological contexts.

241 STUDIES IN BLACK THEOLOGY 3 cr
A study of the literature and development of black theology as it has evolved in the United States, the Caribbean, and on the African continent, with special emphasis on the evolution in the United States, a discussion of the relationship of Christianity and other religions to the "black experience."

245 RELIGION AND CULTURE SOME PERSONAL DIMENSIONS 3 cr
An explanation of the place of religion in the growth and fulfillment of modern man, of how religion influences the meaning of human existence in work, leisure, art, love, life, and death.

280 WORLD RELIGIONS 3 cr
A survey of the history, beliefs, practices, and contemporary influence of the major religions of the world, Hinduism, Buddhism, Confucianism, Taoism, Mazow Shintoism, African traditions, Judaism, Christianity and Islam, a discussion of a basic methodology for understanding religions.

THEOLOGY

283, 284 JEWISH THOUGHT AND RELIGION 3 cr each
A survey of the development of Jewish theological and ethical teachings as delineated in the Bible and the Talmud (Fall semester), and in medieval and modern Jewish thinkers (Spring semester), an analysis of the forces and events which helped to shape this development. 283 is not a prerequisite for 284.

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, truth as a social issue, wealth, taxation, and stewardship.

343 RELIGIOUS IMPACT OF SECULAR THINKERS 3 cr
A study of the effect that modern secular thinkers, e.g., Marcuse, McMillan, Hefner, Toffler, Kohlberg, Skinner, have had on the religious consciousness and behavior of the present age, a discussion of certain areas of culture most affected by this secular impact.

345 WOMEN IN RELIGION 3 cr
An examination of the theological position and social role of women in some of the major religions of the world, Hinduism, Islam, Judaism, and Christianity, a comparison of these religious roles to the cultural roles of women in society.

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 expression of fundamental theological concepts in significant literary works — past and present, English and continental (in translation) — 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, with an emphasis on some uniquely American religious phenomena, e.g., religious liberty, indigenous American religious movements, civil religion, black religious experience.

481 ISLAM 3 cr
An analysis of Islam as a religious, political, and cultural entity, Mohammad and the Arabian setting, history, beliefs, practices, and divisions within Islam, the Koran and Hadiths, the contemporary Muslim world.

482 RELIGIONS OF INDIA 3 cr
An analysis of significant religious groups in India such as Jains, Buddhists, Parsees, Muslims, Sikhs, and Christians with emphasis on the Hindu's study of the origin, development, beliefs, practices, and interrelationships among the religions and interaction between religion and Indian culture.

492 READING SEMINAR SELECTED TOPICS 1-3 cr
A critical analysis of selected topics in the areas of biblical studies, Christian studies, Roman Catholic theology or selected religious studies, or of some outstanding authors and their works 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 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.
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.

**Center for International Management**
The objective of the Center is to develop a better understanding of the American involvement in international affairs and business and in management abroad through teaching and research, it is achieved by an interdisciplinary approach.

The areas of current research focus are:
1. Trade expansion between the USA and Eastern Europe
2. Management in foreign nations
3. Problems in international business
4. International economic development with a stress on interaction among developed countries, and on the relationship between developed countries—less developed countries
5. International political and legal issues

The Center has no teaching program of its own, most of its staff are faculty members from various schools and departments of the University or visiting foreign professors.

**Center for Management Development**
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**
These 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 seniors in the highest five percent of their class and to juniors in the highest 10 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. The 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.

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.

FOUR YEAR SAMPLE PROGRAM

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
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<td>101 English Comp</td>
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<td>102 English Comp</td>
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<tr>
<td></td>
<td>109 College Algebra</td>
<td>3</td>
<td>111 Calculus</td>
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<td>*141 Economic Geography</td>
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<td>142 Economic Devel</td>
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<td>*181 Computer Science</td>
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<th><strong>Spring Semester</strong></th>
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<tr>
<td>211 Intro Accounting</td>
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<td>212 Intro Accounting</td>
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<td>221 Prin of Economics</td>
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<td>222 Prin of Economics</td>
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<td>281 Probability and Statistics</td>
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<td>282 Probability and Statistics</td>
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<td>251 Legal Process</td>
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<tr>
<td>361 Prin of Management</td>
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<td>333 Money and Banking</td>
<td>3</td>
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<tr>
<td>371 Prin of Marketing</td>
<td>3</td>
<td>312 or 322 Adv Econ</td>
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<tr>
<td>331 Business Finance</td>
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<td>Business elective</td>
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<tr>
<td>313 Managerial Accounting</td>
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<td>381 Decision Making</td>
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<td>General elective</td>
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<td>General elective</td>
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*Course may be taken in either semester.

**Executive Action Simulation or Executive Policy

The accounting faculty recommends that students concentrating in accounting take Accounting 211, 212, 311, 312, 314, 315, 411, 412, 413, and 251-Legal Process, as well as at least one of the following: Law 353, 354, 355. It is recommended that the student achieve an overall B average in Accounting 211, 212 before attempting Accounting 311 and a minimum grade of C in both 311 and 312 before attempting the remaining 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 315 will be completed.

Three credits in Theology are required for Catholic students. Others may take theology or may substitute three credits in the Department of History, Philosophy, Political Science, Psychology, or Sociology.
DIVISION OF QUANTITATIVE SCIENCE

Chairman ROBERT G. BORMAN, MBA, CPA

ACCOUNTING CURRICULUM

CPA REQUIREMENTS

Students who desire to become certified public accountants in Pennsylvania and who have graduated from a four-year program in a college approved by the State Board of Education may sit for the CPA examination. The degree program of the University is so approved.

Graduates may sit for the CPA examination in other states, among which are New Jersey and New York.

211, 212 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 a week is required.

311, 312 INTERMEDIATE ACCOUNTING 3 cr each

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, 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 211, 212.

314 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 fiducaries. Prerequisites 311, 312.

315 COST ACCOUNTING 3 cr

Basic cost accounting procedures are discussed from the following viewpoints: cost principle, 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. Methods of judging management efficiency, inventory control and management control systems are also stressed. Prerequisites 311, 312.

313 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 211, 212.

411 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 312, 314.

412 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 reviewed include 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 is made of official forms for demonstration purposes. Prerequisites 312, 313.

413 BUSINESS INFORMATION SYSTEMS 3 cr

A course designed to introduce students to management information processing systems.

FINANCE CURRICULUM

Students who desire to function in finance, either in the world of private business, government bodies, or in the area of securities are encouraged to select from the several groups of courses that place emphasis on specific material leading to that end. The professional designation of Chartered Financial Analyst (CFA) is used by those in the securities industry. The designation in the life insurance area for professional personnel is (CLU) or Chartered Life Underwriter. The completion of the Real Estate course and others will satisfy the educational requirements necessary to sit for the Pennsylvania Real Estate Salesman's License.

321 BUSINESS FINANCE 3 cr

To develop knowledge about the role of financial institutions in our society as they perform their function of either the creation of the medium of exchange or of taking existing funds as they do. Knowledge about interest rate movements and their effects on business and the development of financial instruments used within the business society. Also, through the media of a research paper, the student has the opportunity to develop a major area in detail. Emphasis is primarily on the role money and banking take in relationship to business entities. Prerequisite 331.

419 SEMINAR IN ACCOUNTING 3 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 314.
333 FINANCIAL MANAGEMENT 3 cr
Financial Management is a "follow-up" course to 331-Business Finance. It is designed for all business students. The course is designed to provide a theoretical or conceptual framework that a financial manager can use to reach decisions in the real world. Material is presented with the purpose of involving the student in the fundamental decisions and compromises of the financial manager as he faces choices between risk and return. Reading material, case material, and a research project are tools to be used. Prerequisite 331

334 RISK MANAGEMENT 3 cr
A study of the broad spectrum of risk exposures in business enterprises, with special attention to the need for identifying these in terms of nature and magnitude. Emphasis is on techniques available to aid the decision-maker in making decisions under constraints of uncertainty. Methods of alleviation, avoidance, and insurance are studied. Attention is given not only to the traditional forms of insurable hazards, but also to implicit risks such as those of loss in market value of assets, capital budgeting decisions, new product financing decisions, and lending of capital, both short-term and long-term. Financial institutional structures are given emphasis as they act and interact when serving as sources or intermediaries and users of funds. Research by the student is required to afford the student the opportunity to concentrate on an intensive effort upon an individual topic. Prerequisite 331

335 BUSINESS FINANCIAL PROBLEMS 3 cr
The aim of this course is to provide a vehicle which the student can take material from previous courses both of a financial nature and that from other disciplines and through its utilization solve problems primarily of a financial nature. From the point of view of the models available as they relate to the management of cash, accounts receivable, marketable securities, and various inventories, consideration is given to the decision-making process for these assets under cases of both certainty and uncertainty, examining the models, their uses, and limitations. Prerequisite 331

336 SECURITY ANALYSIS 3 cr
An intensive study of the analytic techniques applicable to the selection of the various securities of private as well as public entities. Consideration is given to the markets in which these securities are traded and the types of information that are useful and necessary to the decision-making process of the investor as the attempt is made to measure the value of a particular security. Several models are examined in seeking their appropriateness in establishing the relative worth of a security. The merits of both the fundamental and technical approach to security analysis are considered for their contribution to the analysis of a security. Prerequisite 331

337 INVESTMENT ANALYSIS 3 cr
It is the aim of this course to present material that will be useful to the student in developing an understanding of the various types of investments which may be available for a portfolio investment. Discussion of the various risks that a portfolio may be subject to and further the importance of the various risks to the various types of portfolio holders is undertaken. The basic elements of portfolio theory as it has been developed by Markowitz and others is presented. Various quantitative and descriptive approaches that are used in portfolio development are investigated. Techniques for measuring the effectiveness of the portfolio are illustrated. Prerequisites 331, 336, or special permission of the instructor. Without 336

431 FINANCIAL COMMERCIAL TRANSACTIONS 3 cr
The aims of the course are two-fold: 1) to make the student aware of the various types of transactions which are used in business and the basic elements of the transactions, 2) to look at the problem of working capital management from the point of view of the models available as they relate to the management of cash, accounts receivable, marketable securities, and various inventories. Consideration is given to the decision-making process for these assets under cases of both certainty and uncertainty, examining the models, their uses, and limitations. Prerequisite 331

432 CREDIT MANAGEMENT 3 cr
This course will be taught in such a manner so as to give to the student a thorough understanding of the function of credit management. In order that the student be afforded a maximum opportunity to grasp such information as presented in the literature and in the classroom, cases, problems, and field experience may be assigned. Through these vehicles the student will have the opportunity to integrate the knowledge gained from text material and other financial sources with that of other disciplines to arrive at a logical, sound credit decision. Prerequisite 331

433 FINANCIAL MARKETS 3 cr
An extensive and intensive study of the markets in which the financing of needs takes place. Study is made of the markets for borrowing and lending of capital, both short-term and long-term. Financial institutional structures are given emphasis as they act and interact when serving as sources or intermediaries and users of funds. Research by the student is required to afford the student the opportunity to concentrate on an intensive effort upon an individual topic. Prerequisite 331

434 LIFE INSURANCE 3 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 partnerships and key men, and in connection with bank loans, are explored. Attention is also given to accident and health coverages group plans, pensions, and regulation of the industry. Prerequisite 331

PROPERTY AND LIABILITY INSURANCE 3 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. Prerequisite 331

436 ADVANCED CASE PROBLEMS IN FINANCE 3 cr
The aim of this course is to provide a vehicle through which the student can take material from prior courses and employ it in solving the more complex situations arising from comprehensive problem-solving situations. Emphasis is given to the decision-making process in such areas as asset management, budgeting, financial structure, organizational format, and advanced theoretical material being employed in the business world. The vehicle used may be case material, actual field experience, comprehensive literature assignments, or any combination of the above. Prerequisite 331

437 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 business equity, loans secured by mortgages, land contracts, sales and lease-back arrangements, and cooperatives. Prerequisites 331, 335, or special permission of the instructor.

439 SEMINAR IN FINANCE 3 cr
The topics will vary, depending upon current developments and the needs and interests of the students. As a part of the course requirement the student will be expected to develop a research paper upon some significant aspect of finance. The course should be taken by students who have completed most of the course required in the concentration area.
QUANTITATIVE METHODS CURRICULUM
Students in the undergraduate School of Business and Administration complete a basic sequence in Quantitative Methods. This sequence is concerned with the application of mathematics, statistics, and electronic data processing to the analysis of business and economic problems. The objective of the program is to increase the student's knowledge and understanding of the uses of mathematics, statistics, and computers as aids in decision-making. The basic sequence is comprised of these courses 181, 281, 282, and 381. Prior to entry into the sequence, Mathematics 109 and/or 111 in the College may be required of those students failing to satisfy entry requirements with respect to competence in basic algebra and calculus.

In addition to the basic sequence, a number of electives are offered for students wishing to include quantitative management science techniques in their areas of concentration.

181, INTRODUCTION TO COMPUTERS 3 cr
An introduction to the basic concepts of computer programming in algebraic and representational languages. The course introduces the algorithmic approach to problem-solving and continues through the development of flowcharts and programs, using the Fortran language. Brief treatment is also given to other business-related languages. Prerequisite: Mathematics 109 in the College or equivalent.

281, 282 PROBABILITY AND STATISTICS 3 cr each
This sequence includes the basic ideas of descriptive statistics, inductive statistics, and probability. 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 181 and Mathematics 111 in the College or equivalent.

381 INTRODUCTION TO DECISION SCIENCES 3 cr
The application of the scientific method of problem solving to business problems. The course includes various models and the methods of applying them to business situations. The models covered include linear programming, simulation, queuing, and inventory optimization. The use of library computer programs will be emphasized. Prerequisites 281, 282.

DIVISION OF BEHAVIORAL SCIENCE
Chairman: SERGE GROSSET, Ph.D.

PROGRAM GUIDE FOR STUDENTS
The present combination of required courses and free electives gives the student a solid foundation in business and, at the same time, allows him to follow his inclination in a special field of endeavor. At the same time, the greater the freedom of choice, the greater the need for helping the student in selecting courses in a meaningful way.

Students should be aware of the freedom either:
1. To broaden their cultural background by expanding in many different fields of knowledge, or
2. To establish, with the help of their advisor, a background of specialized knowledge in the field in which they have their strongest interest.

Several Study Programs—combining a concentration in Business (24 credits) with a judicious choice of electives from the College (27 credits)—are given as illustrations of the flexibility and the depth possible under the present program. Present Study Programs are offered in:

Industrial Relations
Law Administration
Production
Transportation and Traffic

The listing of these Study Programs is only indicative, not inclusive, others may be structured, and the suggested areas can be modified according to the occupational objectives and preferences of the student.

INTERNATIONAL BUSINESS CURRICULUM

141 PHYSICAL AND ECONOMIC GEOGRAPHY 3 cr
This course examines the present and potential products of the world's major geographic regions. The course centers itself essentially with man's utilization of natural resources in earning a living. Attention is given to the geographical foundations and operations of major industries, including agriculture, manufacturing, extractive activities, and transportation. Principal domestic and world trade movements are analyzed.

142 ECONOMIC DEVELOPMENT OF EUROPE AND AMERICA 3 cr
A survey of the evolution of Western economic institutions and business practices. The origin of capitalism, the Commercial and Industrial Revolutions, the rise of the bourgeoisie, and the spread of capitalism are examined. A study is also made of the institutional development and productive growth of the United States economy. Emphasis is placed on analyzing economic issues, particularly the evolution of business institutions, within a historical context.

441 INTERNATIONAL BUSINESS 3 cr
A study of the techniques of international trade. Emphasis is given to the contract, overseas equipment, customs procedure in this country and abroad, marine insurance, packing for overseas trade, financing exports and import shipments, foreign exchange, and carriage of goods by air. Prerequisites: 141, Econ 221, 222.

442 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 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: 221, 222 or 121, 122, 123.
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
- 362 Behavioral Science
- 364 Personnel Management
- 462 Public Administration, and
- either 465 Administrative Organization, or 413 Business Information Systems

To supplement the basic core, students in the Law Administration sequence select the following or related courses in satisfaction of the School of Business and Administration requirement regarding liberal arts electives:

- 478 Youth and Drug Abuse
- 002 Drug Abuse
- 328 Psychology of Personality
- 352 Abnormal Psychology I
- 352 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

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

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

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

366 BUSINESS SCIENCE

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 361 and 281, 282—Probability and Statistics

453 ADMINISTRATION OF LEGAL SYSTEMS

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

MANAGEMENT CURRICULUM

In accord with the objectives of the University and of the School, the Management Curriculum aims are:

1. To acquaint students with managerial concepts and practices in both profit and non-profit organizations.
2. To offer an opportunity for some degree of specialization to those students who are interested in a study program in management.

355 LAW OF BUSINESS ORGANIZATIONS

Consolodation 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

462 BUSINESS INFORMATION SYSTEMS

An introductory course treating 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.

361. PRINCIPLES OF MANAGEMENT

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.

362 BEHAVIORAL SCIENCE

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 361

363 PRODUCTION MANAGEMENT

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 361 and 281, 282—Probability and Statistics

461 HUMAN RELATIONS IN ADMINISTRATION

An advanced course treating the human aspect as it is encountered in the industrial
462 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. Prerequisite: 361.

463 COLLECTIVE BARGAINING 3 cr
Study of the relation of federal and state legislation 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: 361.

464 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: 361.

465 DEFENSE MANAGEMENT 3 cr
A three-hour study of management practices in one of the largest, most complex organizations in the world. The U.S. Department of Defense. The course highlights the interaction of planning, programming, budgeting, coordinating, decision making, and procurement within DOD. Discusses DOD's application of accepted management of business concepts. The importance of effective management at all levels will be emphasized in view of the impact of all defense operations.

491 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. Prerequisites: Senior standing and 361.

492 EXECUTIVE POLICY 3 cr
Integrates concepts and skills from all functional areas of business and administration in decision making under conditions of uncertainty. Makes use of case histories and other information to allow students analysis and problem solving with the organization as a whole. Prerequisites: Senior standing and 361.

493 INDEPENDENT SCHOLARLY STUDY 3 cr
Student must initiate an original research project in a field of business of his choice. The project is then scrutinized by a committee of three faculty members. If the project is approved, the Dean will choose a faculty member as director of the project. The project must be completed within an academic semester. Prerequisite: Student must qualify as a University Scholar.

2 To explore the many basic activities involved in the marketing concept and in matching products to markets.
3 To provide an area of specialized study for those students who wish to pursue the marketing phase of business.

371 PRINCIPLES OF MARKETING 3 cr
The emphasis throughout this course is on problem solving and decision-making in marketing. The basis for the course is a systematic analysis of customer behavior, and the development of marketing policies and programs. Marketing strategy and designing a marketing mix are stressed to give the student an insight into these areas, and the reduction of risk is emphasized through the use of qualitative and quantitative market research techniques.

372 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, wholesales, jobbers, brokers, agents, and similar functionaries. Theories of marketing are subjected to the test of practical examples so that the student may develop a more realistic grasp of the principles involved and the value of the practitioner's judgments. Current marketing developments are studied. Prerequisite: 371.

373 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, qualitative and quantitative market analysis, and specific sales management functions of selection, training, equipping, compensating, supervising, and controlling salesmen. Prerequisite: 371.

374 MANAGEMENT OF A BRIEFING 3 cr
An introduction to the fundamentals of management of a briefing, and the problems confronted by the sales manager. Topics include such areas as production planning, pricing, packaging, qualitative and quantitative market analysis, and specific sales management functions of selection, training, equipping, compensating, supervising, and controlling salesmen. Prerequisite: 371.

376 MARKETING RESEARCH 3 cr
This course examines the means and methods of business management and the role it plays in producing, providing, and distributing goods that are produced. The various types of marketing research—consumer research, motivational research, market analysis, sales analysis, and sales forecasting—are studied. Prerequisite: 371.

377 TRANSPORTATION 3 cr
A comprehensive analysis of the historical evolution, operation and economic development 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: 371, Econ 221, 222.

378 TRAFFIC MANAGEMENT 3 cr
This course deals with the organization and functioning of traffic departments of industrial concerns. Topics treated are organization of shipping departments, car records, traffic 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 221, 222.

MARKETING CURRICULUM
In accord with the objectives of the University and of the School, the Marketing Curriculum aims are
1 To develop an understanding and appreciation of distribution in our economy.
**Division of Economic Science**

Chairman: Som Prakash, Ph.D.

### Economic Science Curriculum

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>121</td>
<td>Elements of Economics</td>
<td>3 cr</td>
</tr>
<tr>
<td>122</td>
<td>Introduction to Macroeconomics</td>
<td>3 cr</td>
</tr>
<tr>
<td>123</td>
<td>Introduction to Microeconomics</td>
<td>3 cr</td>
</tr>
<tr>
<td>124</td>
<td>Economics of Discrimination</td>
<td>3 cr</td>
</tr>
<tr>
<td>321, 322</td>
<td>Principles of Economics</td>
<td>3 cr</td>
</tr>
<tr>
<td>323</td>
<td>Principles of Economics II</td>
<td>3 cr</td>
</tr>
<tr>
<td>324</td>
<td>National Income Analysis</td>
<td>3 cr</td>
</tr>
<tr>
<td>325</td>
<td>Urban Economics</td>
<td>3 cr</td>
</tr>
<tr>
<td>326</td>
<td>Labor Economics</td>
<td>3 cr</td>
</tr>
<tr>
<td>327</td>
<td>Business Cycles and Forecasting</td>
<td>3 cr</td>
</tr>
<tr>
<td>328</td>
<td>History of Economic Thought</td>
<td>3 cr</td>
</tr>
<tr>
<td>329</td>
<td>Modern Economic Theory</td>
<td>3 cr</td>
</tr>
<tr>
<td>330</td>
<td>Public Finance</td>
<td>3 cr</td>
</tr>
</tbody>
</table>

**Course Descriptions:***

- **Elements of Economics (121):** 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.

- **Introduction to Macroeconomics (122):** 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 is the primary aim of this course.

- **Introduction to Microeconomics (123):** 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 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 one course does not obligate the student to take any additional courses in the sequence.

### Economic Science Requirements

- **321 Principles of Economics I:** The first course in economics for the student who plans to major in economics. The course seeks to acquaint the student with the theoretical tools 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.

- **322 Principles of Economics II:** 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.

- **323 National Income Analysis:** A conceptual analysis of national income. The course deals with 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 problems relating to the operation of the American economy and the many problems relating to it.

- **324 Comparative Economic Systems:** Comparative study of capitalism, socialism, communism and other economic systems with emphasis on their different characteristics and applications. The course also includes a study of the fundamental concepts of the system and the influence of institutional conditions upon their philosophy.

- **325 Urban Economics:** 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 that arise in this context. The course also includes a study of the urban economic growth and development and the essentials of welfare economics in today's society.

- **326 Labor Economics:** Analysis of the principles for wage and employment determination in contemporary American economy. The course also includes a study of the problems of the labor market, labor legislation and collective bargaining.

- **327 Business Cycles and Forecasting:** This course is designed to study the process of economic change. Analysis of seasonal, cyclical and secular movements will be undertaken. Theoretical and empirical aspects will be covered. Forecasting techniques will also be studied.

- **328 History of Economic Thought:** A brief review of classical tradition emphasizing Smith, Ricard and Mill, and Marxist thought. The course also includes a study of the influences of the development of economic thought in American and other democratic countries.

- **329 Modern Economic Theory:** A brief review of classical tradition emphasizing Smith, Ricard and Mill, and Marxist thought. The course also includes a study of the influences of the development of economic thought in American and other democratic countries.

- **330 Public Finance:** A study of the organization and management of government revenues and expenditures with emphasis on American practices and policies at the various levels of government. Government revenues and expenditures with emphasis on American practices and policies at the various levels of government. Benefit-cost and cost-effectiveness analysis with their implications for program and capital budgeting receive heavy consideration. The course also includes a study of the fundamental concepts of the system and the influence of institutional conditions upon their philosophy.

- **331 Introduction to Macroeconomics:** 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 is the primary aim of this course.

- **332 Principles of Economics II:** 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.

The course also includes a study of the fundamental concepts of the system and the influence of institutional conditions upon their philosophy. The course also includes a study of the fundamental concepts of the system and the influence of institutional conditions upon their philosophy.
425 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 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 221, 222 or 121, 122, 123

426 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, F 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 221, 222, 322 or 121, 122, 123

427 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 321

428 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 427

429 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 321 322 and permission of the instructor
School of Education

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 in 1930,
- graduate education in 1936,
- elementary education in 1937,
- guidance in 1952,
- school administration and supervision in 1952,
- library science in 1956,
- special education in 1964,
- reading specialist and reading supervisor in 1969,
- school psychologist in 1969,

SELECTION AND ADMISSION
Candidates who express a desire to become teachers are admitted to the School of Education through the University Office of Admissions (apply to Director of Admissions, Duquesne University, Pittsburgh, Pa 15219). The curriculum for the first two years (approximately 60 credits) is devoted to the broad learning in general and basic professional education and beginning coursework 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 teaching in a public or private school for an entire semester or year.

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, state and national student organizations in Special Education.

Kappa Delta Epsilon, national education sorority.

HONOR AWARDS
These awards, presented at the annual Honors Day Convocation, are open to undergraduates in the School of Education.

- Faculty Award for General Excellence in Secondary Education.
- Faculty Award for General Excellence in Elementary Education.
- Faculty Award for General Excellence in Special Education.
- 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 based on financial need to a junior student majoring in Special Education.

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 the Pennsylvania 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 must be earned at Duquesne University. The minimum number of credits for graduation is 120.

SCHOOL OF EDUCATION

General Education Courses Credits
Courses in all these areas, for a total of 54 credits, are required.

<table>
<thead>
<tr>
<th>Area</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Area</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>English Composition</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>English Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Communications Area (Speech, Journalism, English)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Mathematics and/or Science</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Social Science (Anthropology, Economics, Geography, History, Political Science, Sociology)</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Philosophy and/or Theology</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>(Introduction to Psychology is a prerequisite to all others)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Professional Education

All courses, for a total of 31 credits, are required.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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>4</td>
</tr>
<tr>
<td>Child Development II</td>
<td>2</td>
</tr>
<tr>
<td>Early Childhood Education I</td>
<td>4</td>
</tr>
<tr>
<td>Early Childhood Education II</td>
<td>4</td>
</tr>
<tr>
<td>Curriculum Development I</td>
<td>3</td>
</tr>
<tr>
<td>Curriculum Development II</td>
<td>3</td>
</tr>
<tr>
<td>Language Development and Reading</td>
<td>3</td>
</tr>
<tr>
<td>Research Seminar</td>
<td>2</td>
</tr>
</tbody>
</table>

*Professional Semester

Both courses, for a total of 12 credits, are required.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Teaching in Early Childhood</td>
<td>10</td>
</tr>
<tr>
<td>Planning Programs for Young Children</td>
<td>2</td>
</tr>
</tbody>
</table>

Other Electives

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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 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 Teacher</td>
<td>2</td>
</tr>
<tr>
<td>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>Enrichments</td>
<td>2-4</td>
</tr>
<tr>
<td>Independent Study</td>
<td>1-2</td>
</tr>
</tbody>
</table>

Education Electives Courses Credits

Nine credits from among the following courses are required.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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 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 Teacher</td>
<td>2</td>
</tr>
<tr>
<td>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>Enrichments</td>
<td>2-4</td>
</tr>
<tr>
<td>Independent Study</td>
<td>1-2</td>
</tr>
</tbody>
</table>

*As this program has been cooperatively developed by Duquesne University and Carlow College for Pennsylvania Department of Education approval, some or all of the professional courses in Early Childhood Education may be offered on the Carlow campus.

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 must be earned at Duquesne University. The minimum number of credits for graduation is 120.

**General Education Courses**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses in all these areas, for a total of 54 credits, are required</td>
<td></td>
</tr>
<tr>
<td>English Area</td>
<td>15</td>
</tr>
<tr>
<td>English Composition</td>
<td>6</td>
</tr>
<tr>
<td>English Elective</td>
<td>3</td>
</tr>
<tr>
<td>Communications Area (Speech, Journalism, English)</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics and/or Science</td>
<td>12</td>
</tr>
<tr>
<td>Social Science</td>
<td>12</td>
</tr>
<tr>
<td>(Anthropology, Economics, Geography, History, Political Science, Sociology)</td>
<td></td>
</tr>
<tr>
<td>Philosophy and/or Theology</td>
<td>9</td>
</tr>
<tr>
<td>(Includes 3 credits in Theology required for Catholics)</td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
</tr>
<tr>
<td>(Introduction to Psychology is a prerequisite to all psychology courses)</td>
<td></td>
</tr>
</tbody>
</table>

**Supporting Electives Courses**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>History Elective</td>
<td>6</td>
</tr>
<tr>
<td>Survey of American Federal Government</td>
<td>4</td>
</tr>
<tr>
<td>Sociology Elective</td>
<td>3-6</td>
</tr>
<tr>
<td>Psychology Elective</td>
<td>3-6</td>
</tr>
<tr>
<td>Visual Arts</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Music</td>
<td>3</td>
</tr>
<tr>
<td>English Elective</td>
<td>6</td>
</tr>
<tr>
<td>Modern Language</td>
<td>18</td>
</tr>
<tr>
<td>Mathematics</td>
<td>12</td>
</tr>
<tr>
<td>Science</td>
<td>6-8</td>
</tr>
<tr>
<td>Introduction to Political Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Education Electives Courses**

Nine credits from among the following courses are required:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Development</td>
<td>3</td>
</tr>
<tr>
<td>Children's Literature</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Art</td>
<td>3</td>
</tr>
<tr>
<td>Music for Classroom Teacher</td>
<td>2</td>
</tr>
<tr>
<td>Psychology of Identity and Fulfillment</td>
<td>3</td>
</tr>
<tr>
<td>Learning Resources</td>
<td>3</td>
</tr>
<tr>
<td>Earhythmics</td>
<td>1-2</td>
</tr>
<tr>
<td>Field Observation</td>
<td>1-5</td>
</tr>
<tr>
<td>Independent Study</td>
<td>1-2</td>
</tr>
<tr>
<td>Problems in Teaching Reading</td>
<td>3</td>
</tr>
<tr>
<td>Mainstream Seminar</td>
<td>3-6</td>
</tr>
<tr>
<td>Independent Study</td>
<td>1-2</td>
</tr>
<tr>
<td>Youth and Drug Abuse</td>
<td>2</td>
</tr>
</tbody>
</table>

*Professional Semester Credits*

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Teaching plus Seminar</td>
<td>12</td>
</tr>
</tbody>
</table>

*No student may register for additional course work during this professional semester without permission of the Committee on Student Standing.*

**MUSIC EDUCATION**

General and professional course work and professional education courses required for this program are outlined in the School of Music section, page 107.

**SECONDARY EDUCATION**

The Secondary Education 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 certain subjects in the secondary schools of Pennsylvania for a period of three years.

   Four-year programs lead to certification in biological science, chemistry, communications (with emphasis in English, journalism, or speech and theatre), general science, Latin, mathematics, modern languages (French, German, Spanish), physics, social studies (economics, history, political science, psychology, sociology).

2. Admission to graduate programs in education.

   This program cannot be completed on a part-time basis. The last 30 credits must be earned at Duquesne University. The minimum number of credits for graduation is 120.

**General Education Courses**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses in all these areas, for a total of 54 credits, are required</td>
<td></td>
</tr>
<tr>
<td>English Area</td>
<td>15</td>
</tr>
<tr>
<td>English Composition</td>
<td>6</td>
</tr>
<tr>
<td>English Elective</td>
<td>3</td>
</tr>
<tr>
<td>Communications Area (Speech, Journalism, English)</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics and/or Science</td>
<td>12</td>
</tr>
<tr>
<td>Social Science</td>
<td>12</td>
</tr>
<tr>
<td>(Anthropology, Economics, Geography, History, Political Science, Sociology)</td>
<td></td>
</tr>
<tr>
<td>Philosophy and/or Theology</td>
<td>9</td>
</tr>
<tr>
<td>(Includes 3 credits in Theology required for Catholics)</td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
</tr>
<tr>
<td>(Introduction to Psychology is a prerequisite to all other psychology courses)</td>
<td></td>
</tr>
</tbody>
</table>

**Professional Education Courses**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>All courses in this area are required</td>
<td></td>
</tr>
<tr>
<td>Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology Child</td>
<td>3</td>
</tr>
<tr>
<td>Development, or Adolescent Development</td>
<td>3</td>
</tr>
<tr>
<td>Methods in Major Field Laboratory</td>
<td>1-2</td>
</tr>
<tr>
<td>Secondary Teaching Techniques</td>
<td>9</td>
</tr>
<tr>
<td>Secondary Student Teaching</td>
<td>9</td>
</tr>
<tr>
<td>School Law and Pupil or Youth and Drug Abuse</td>
<td>2</td>
</tr>
<tr>
<td>Reading in Secondary Schools</td>
<td>3</td>
</tr>
<tr>
<td><em>For Communications certification, 18 credits are required, with six in English, six in journalism, and six in speech and theatre, for a total of 57 credits in the General Education area</em></td>
<td></td>
</tr>
</tbody>
</table>

**SUBJECT AREA CERTIFICATION REQUIREMENTS**

A minimum of 30 credits (semester hours) is required for certification in the following disciplines: biology, chemistry, communication, general science, Latin, mathematics, modern languages, physics, and social studies. This is in addition to the General Education requirements.
## Major Field Requirements

<table>
<thead>
<tr>
<th>Major</th>
<th>Supporting Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>Mathematics, chemistry, and physics</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Mathematics and physics</td>
</tr>
<tr>
<td>Communications</td>
<td>Journaling, speech</td>
</tr>
<tr>
<td>English Emphasis</td>
<td>Speech, English</td>
</tr>
<tr>
<td>Journalism Emphasis</td>
<td>Consult with Journalism Department</td>
</tr>
<tr>
<td>Speech Emphasis</td>
<td>Consult with Speech Department</td>
</tr>
<tr>
<td>General Science</td>
<td>Consult with Classics Department</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Calculus I, II, III, General analytical physics,</td>
</tr>
<tr>
<td>Modern Languages</td>
<td>Philosophy, linguistics</td>
</tr>
<tr>
<td>Physics</td>
<td>Chemistry, mathematics, biology</td>
</tr>
<tr>
<td>Social Studies</td>
<td>Philosophy, anthropology, psychology</td>
</tr>
</tbody>
</table>

### Major Field Requirements Supporting Courses

- Consult with Biology Department
- Consult with Chemistry Department
- Consult with Classics Department
- Consult with English Department
- Consult with Journalism Department
- Consult with Speech Department
- Consult with Modern Languages Department
- Consult with Physics Department
- Consult with Spanish Department
- Consult with Latin Department

**Latin**: Consult with Classics Department

**Mathematics**: Calculus I, II, III, General analytical physics, Philosophy, linguistics

**Modern Languages**: Consult with Modern Languages Department

**Physics**: Consult with Physics Department, Chemistry, mathematics, biology

**Social Studies**: Economics, history, political science, sociology, psychology

### Supporting Courses

- Mathematics, chemistry, and physics
- Mathematics and physics
- Journaling, speech
- Speech, English
- Consult with Classics Department

**General Science**: Minimum of eight credits in biology, chemistry, and physics, and additional courses to total a minimum of 18 semester hours in one field of science

**Latin**: Consult with Classics Department

**Mathematics**: Calculus I, II, III, General analytical physics, Philosophy, linguistics

**Modern Languages**: Consult with Modern Languages Department

**Physics**: Consult with Physics Department, Chemistry, mathematics, biology

**Social Studies**: Economics, history, political science, sociology, psychology

### Area and Courses

<table>
<thead>
<tr>
<th>Areas and Courses</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Foundations of Education</strong></td>
<td>12</td>
<td>Teaching the Mildly Handicapped</td>
</tr>
<tr>
<td>Foundations of Education</td>
<td>3</td>
<td>Vocational Education for the Handicapped</td>
</tr>
<tr>
<td>Educational Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Child Development</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Adolescent Development</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Special Education</strong></td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Field Experiences</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Moderately and Severely Handicapped</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Vocational Education and either</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mildly Handicapped—Elementary</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mildly Handicapped—Secondary</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Foundations of Special Education</strong></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Reading in the Elementary School</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Teaching Elementary Mathematics/Science</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Methods in Special Education I</strong></td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td><strong>Methods in Special Education II</strong></td>
<td>3-4</td>
<td></td>
</tr>
<tr>
<td>Teaching the Moderately and Severely Handicapped</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

*Prerequisites: Reading in the Elementary School and Teaching Elementary Mathematics/Science

**Course Descriptions**

### Educational Foundations and Psychology

#### 201 CHILD DEVELOPMENT

3 cr  
Behavior and personality characteristics of children from birth to adolescence as they relate to school and home situations

#### 202 ADOLESCENT DEVELOPMENT

3 cr  
Physical, mental, moral, emotional, and social development of the adolescent, including needs, interest, and adjustment problems

#### 203, 204, 205, 206, 207 FIELD EXPERIENCE

1 cr each  
Classroom and other school experience 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.
INTERPERSONAL CLASSROOM MANAGEMENT FOR TEACHERS 3 cr
The major emphasis of this competency based course is the teacher's personal awareness of: 1) his/her feelings and emotions and 2) his/her personal, interpersonal, societal and educational values, 3) the teacher's understanding of the dynamics of groups, and 4) the teacher's management of classroom situations.

HUMAN DEVELOPMENT 3 cr
Growth and development of the child, with emphasis on understanding personality development and problems of growing up.

FOUNDATIONS OF EDUCATION 3 cr
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.

MAINSTREAM SEMINAR 3 cr
This seminar is designed to acquaint the regular teacher with the nature of the exceptionality which are characteristic of the handicapped child who may be mainstreamed into the regular classroom. Emphasis will be on teaching strategies in developing instructional programs for the mainstreamed handicapped child.

EDUCATIONAL PSYCHOLOGY 3 cr
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.

PSYCHOLOGY OF IDENTITY AND FULFILLMENT 3 cr
Implications of the psychology of personality for the wholesome development of personality and for the prevention of lasting personality disturbances.

YOUTH AND DRUG ABUSE 2 cr
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.

INDEPENDENT STUDY 1-2 cr
With permission of an instructor and approval of the Dean, students may pursue in-depth study of a subject area or engage in individual projects related to their professional goals.

LEARNING RESOURCES 3 cr
Identification, location, utilization, and creation of learning materials, adaptation of print and non-print materials to meet curricular needs, developing materials for individualized classroom instruction.

PROBLEMS IN TEACHING READING 3 cr
Reading difficulties on elementary and secondary school levels, discussion of classroom and clinical procedures in solving reading problems, diagnostic and corrective techniques and materials for the classroom teacher, reading improvement programs, special unit on reading problems of the mentally retarded.

EVALUATION OF LEARNING 2 cr
Principles of test construction, examination analysis, and interpretation of other media for appraisal of pupil growth and achievement.

DEVELOPMENTAL READING 2 cr
A survey course in the teaching of reading, appropriate for both elementary and secondary education majors. Major emphasis is on methods of teaching reading, the materials for evaluating pupil growth in reading, and reading in the content subjects.

SCHOOL LAW AND THE PUPIL 2 cr
School law as it affects the child—census, admission practices, vaccination, compulsory attendance, the neglected, dependent, and delinquent child work periods, graduation requirements, special school services, and other regulations pertaining to the health and welfare of the child.

EARLY CHILDHOOD EDUCATION

301. CHILD DEVELOPMENT I 4 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 skills developing during infancy (ages 0 through 2 years) and during the preschool years (ages 3 and 4). The role of the family as primary socializing agent is stressed.

302 CHILD DEVELOPMENT II 2 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 4 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 4 cr
Students will examine the humanistic, behavioristic, cognitive-developmental, and psychodynamic theories of child development. In-depth study of early childhood education models, Montessori Method, Bank Street Early Education Program, Demonstration and Research Center for Early Education, Bereiter-Englemann Curriculum, etc.—will be a requirement along with participation in pre-school programs.

307 CURRICULUM DEVELOPMENT I 3 cr
Focuses upon the development of creative abilities in children, age three through eight.
320 INTRODUCTION TO ART 3 cr
Designed to acquaint the student with materials, methods, and techniques used in relating arts and crafts to purposeful 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 on the elementary school level, growth toward independent reading skills, development of techniques, appraisal, record and report of progress

331 TEACHING ELEMENTARY LANGUAGE ARTS AND SOCIAL STUDIES 3 cr
The theories, techniques, practices, and content pertaining to the areas of language arts and social studies Pre-professional laboratory experiences in a public school

332 TEACHING ELEMENTARY MATHEMATICS AND SCIENCE 3 cr
The theories, techniques, practices, and content pertaining to areas of mathematics and science Pre-professional laboratory experiences in a public school

484 CHILDREN'S LITERATURE 3 cr
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

490 ELEMENTARY STUDENT TEACHING 9 cr
Student teaching in an approved public elementary school under the direct supervision of a cooperating teacher

493 SEMINAR IN ELEMENTARY TEACHING 3 cr
Exploration of learning styles, methods and practices of meeting individual differences in the classroom, role-playing and simulated experiences

SECONDARY EDUCATION

364 METHODS IN SECONDARY TEACHING 2 cr

365 SECONDARY TEACHING TECHNIQUES LABORATORY 1-2 cr
This is a team-taught learning experience that uses videotape technology to aid students toward mastery of five teaching competencies planning, questioning, using varied materials and techniques, working with small groups, and evaluation Evaluation is done via self-analysis, peer evaluation, and instructors' feedback. Learners are tested in 365-Teaching Laboratory and in Student Teaching. Student must register for both courses concurrently

490 SECONDARY STUDENT TEACHING 9 cr
Student teaching in an approved public secondary school under the direct supervision of a cooperating teacher

497 READING IN SECONDARY SCHOOLS 3 cr
A survey course in the teaching of reading, appropriate for secondary education majors. Major emphasis is on methods of teaching reading, the materials for evaluating pupil growth in reading, and reading in the content subjects

SPECIAL EDUCATION

211, 212, 213, 214 FIELD EXPERIENCES 2 cr each
Classroom and other experiences in educational, social welfare, and vocational settings as an observer and participant. Enrollment with consent of Director of Student Teaching and School of Education faculty advisor 211 and 212 are required experiences and the student may choose between 213 and 214 to complete the six credits of special education field experiences that are required

309 FOUNDATIONS OF EXCEPTIONAL CHILDREN 3 cr
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 typical child Prerequisites 201, 202

485 TEACHING THE MODERATELY AND SEVERELY HANDICAPPED 3 cr
Evaluation and integration of the various theories, methodologies, curriculum content, instructional techniques, and evaluation procedures for the moderately and severely handicapped

487 TEACHING THE MILDLY HANDICAPPED 3 cr
Evaluation and integration of the various theories, methodologies, curriculum content, instructional techniques, and evaluation procedures for the mildly handicapped

488 VOCATIONAL EDUCATION FOR THE HANDICAPPED 3 cr
An overview of the pre-vocational, vocational, career, and occupational education programs designed to be used for exceptional persons Students will be given information and experiences enabling them to design and implement instructional programs appropriate to the vocational needs of mentally and physically handicapped persons Prerequisites 485, 487

490. STUDENT TEACHING--SPECIAL EDUCATION 9 cr
A full semester of supervised classroom experience at a carefully-selected school for mentally retarded pupils
School of Music

HISTORY
Duquesne University, recognizing that it was most fortunately situated to offer outstanding opportunities for professional preparation in music, in 1926 established a School of Music with a four-year course of study leading to the Bachelor of Music degree. The music education program was approved by the Pennsylvania Department of Education in 1930. In 1959 the School became an associate member of the National Association of Schools of Music and in 1966 was elected to full membership. On April 29, 1967 a new air-conditioned music building was dedicated. Van Cliburn was awarded an honorary Doctor of Music degree on this occasion.

PHILOSOPHY AND OBJECTIVES
The administration and faculty of the School of Music believe that the development of the artistic personality is entirely compatible with the highest objectives of scholars in all fields. It is felt that the best place to educate music students to take their place in society is in a situation where they have an opportunity to share their academic courses in classes with students from other schools of the University. The great advantage of a solid musical preparation and the opportunity to participate in nationally recognized organizations and in performances of professional caliber are available to all of our students.

The faculty of musical scholars and artists with whom Duquesne students work believes that fine talents are best encouraged and developed in an atmosphere that is friendly while at the same time committed to the development of excellence. The faculty, selected with care, includes the names of concert and opera soloists, members of the Casals Festival Orchestra, the Pittsburgh Symphony, nationally known composers, authors, arrangers, conductors, clinicians, and music educators. The Pittsburgh Symphony, Pittsburgh Opera, chamber music and concert series, WDUQ (the Duquesne University radio station) and the high level of interest on the part of other radio and television stations in the arts serve as unusual stimuli to the eager music student.

The Symphony Band and the Concert Band, in their many performances on and off campus, present a wide variety of standard and contemporary repertoire.

The Symphony Orchestra offers fine opportunities for the student interested in orchestral literature. Association with teachers who are members of the Pittsburgh Symphony is an exceptional advantage.

The School also maintains various vocal and instrumental ensembles that are receiving national recognition for the excellence of their performances.
The objectives of the School of Music are to educate teachers and performers of 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**

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Teaching</td>
<td>$25.00</td>
</tr>
<tr>
<td>Instruction in voice or instrument as a minor, each semester</td>
<td>$25.00</td>
</tr>
<tr>
<td>Piano Class Fee, each semester</td>
<td>$10.00</td>
</tr>
<tr>
<td>Instrumental rental for use in major study</td>
<td></td>
</tr>
<tr>
<td>Harp, String Bass, Oboe, Bassoon, Tuba and Percussion</td>
<td>$50.00</td>
</tr>
<tr>
<td>All other instruments</td>
<td>$25.00</td>
</tr>
<tr>
<td>Instrumental rental for use in minor study</td>
<td></td>
</tr>
<tr>
<td>Harp, String Bass, Oboe, Bassoon, Tuba and Percussion</td>
<td>$20.00</td>
</tr>
<tr>
<td>All other instruments</td>
<td>$10.00</td>
</tr>
<tr>
<td>Instrument for class use</td>
<td>$10.00</td>
</tr>
<tr>
<td>Organ practice (major or minor) each semester</td>
<td>$10.00</td>
</tr>
<tr>
<td><strong>Summer Session</strong></td>
<td></td>
</tr>
<tr>
<td>Private Instruction Fees</td>
<td></td>
</tr>
<tr>
<td>Two hours a week (major)</td>
<td>$75.00</td>
</tr>
<tr>
<td>One hour a week (major)</td>
<td>$37.50</td>
</tr>
<tr>
<td>One hour a week (minor)</td>
<td>$25.00</td>
</tr>
<tr>
<td>Instrumental Rental</td>
<td></td>
</tr>
<tr>
<td>Instrument for class use</td>
<td>$5.00</td>
</tr>
<tr>
<td>Instrument for summer months</td>
<td>$15.00</td>
</tr>
<tr>
<td>Instrument for use in six-week Summer Session</td>
<td>$5.00</td>
</tr>
<tr>
<td>Organ practice for use in six-week Summer Session</td>
<td>$5.00</td>
</tr>
</tbody>
</table>

**SPECIAL FEES—Private Instruction**

These fees are charged to non-degree students and others taking the instruction without credit.

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>One hour a week</td>
<td>$272.00</td>
</tr>
<tr>
<td>One half hour a week</td>
<td>$181.00</td>
</tr>
<tr>
<td>One hour a week (Summer Session)</td>
<td>$161.00</td>
</tr>
</tbody>
</table>

**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 begun at the undergraduate level, except music therapy, 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: 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 sophomore flute major.

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 award is given to an outstanding junior studying a woodwind instrument.

Ezio Pinza Memorial Scholarship: This award of $1,000 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 seven different programs, four in applied music, two in music education, and one in sacred music.

<table>
<thead>
<tr>
<th>BACHELOR OF MUSIC—MAJOR IN PIANO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses</td>
</tr>
<tr>
<td>Freshman Year</td>
</tr>
<tr>
<td>Fall</td>
</tr>
<tr>
<td>Mus 103,104</td>
</tr>
<tr>
<td>Mus 111,112</td>
</tr>
<tr>
<td>Mus 131,132</td>
</tr>
<tr>
<td>Mus 133,134</td>
</tr>
<tr>
<td>Mus 143,144</td>
</tr>
<tr>
<td>Mus 121,122</td>
</tr>
<tr>
<td>Eng 101,102</td>
</tr>
<tr>
<td>Sophomore Year</td>
</tr>
<tr>
<td>Mus 203,204</td>
</tr>
<tr>
<td>Mus 211,212</td>
</tr>
<tr>
<td>Mus 231,232</td>
</tr>
<tr>
<td>Mus 233,234</td>
</tr>
<tr>
<td>Mus 243,244</td>
</tr>
<tr>
<td>Mus 251,252</td>
</tr>
<tr>
<td>Mus 241,242</td>
</tr>
<tr>
<td>Junior Year</td>
</tr>
<tr>
<td>Mus 303,304</td>
</tr>
<tr>
<td>Mus 351,352</td>
</tr>
<tr>
<td>Mus 343,344</td>
</tr>
<tr>
<td>Mus 347,348</td>
</tr>
<tr>
<td>Mus 335,336</td>
</tr>
<tr>
<td>Mus 341,342</td>
</tr>
<tr>
<td>Mus 191</td>
</tr>
<tr>
<td>Mus 253</td>
</tr>
<tr>
<td>Elective</td>
</tr>
<tr>
<td>Senior Year</td>
</tr>
<tr>
<td>Mus 403,404</td>
</tr>
<tr>
<td>Elective</td>
</tr>
<tr>
<td>Mus 491</td>
</tr>
<tr>
<td>Mus 313,314</td>
</tr>
<tr>
<td>Mus 441,442</td>
</tr>
<tr>
<td>Mus 443,444</td>
</tr>
<tr>
<td>Mus 447,448</td>
</tr>
<tr>
<td>Mus 340</td>
</tr>
<tr>
<td>Mus 379</td>
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</table>

1 Includes performance classes required by the piano department
2 If 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 ORGAN

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Freshman Year</td>
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<tr>
<td>Mus 103,104 Applied Music (Organ)</td>
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<td>Mus 111,112 Applied Music Minor (Piano)</td>
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<tr>
<td>Mus 131,132 Theory</td>
<td>2</td>
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<tr>
<td>Mus 133,134 Solfege</td>
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<tr>
<td>Mus 143,144 Ensemble Chorus</td>
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<tr>
<td>Mus 121,122 Physical Education (Eurhythmics)</td>
<td>2</td>
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<tr>
<td>Eng 101,102 English Composition</td>
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<td>Sophomore Year</td>
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<tr>
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<td>Mus 211,212 Applied Music Minor (Piano)</td>
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<td>Mus 231,232 Theory</td>
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<tr>
<td>Mus 233,234 Solfege</td>
<td>2</td>
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<tr>
<td>Mus 185,186 Voice Class</td>
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<tr>
<td>Mus 243,244 Ensemble Chorus</td>
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<tr>
<td>Mus 251,252 Music and Western Civilization</td>
<td>3</td>
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<tr>
<td>Junior Year</td>
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<tr>
<td>Mus 303,304 Applied Music (Organ)</td>
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<tr>
<td>Mus 351,352 Music and Western Civilization</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Mus 343,344 Ensemble Chorus or</td>
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<td>1</td>
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<tr>
<td>Mus 347,348 Small Ensemble</td>
<td>(1)</td>
<td>(1)</td>
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<tr>
<td>Mus 335,336 Counterpoint</td>
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<tr>
<td>Mus 340 Orchestration</td>
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<td>Mus 379 Conducting</td>
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<tr>
<td>Mus 191 Human Physiology or</td>
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<td>Mus 253 Visual Arts or</td>
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<td>Senior Year</td>
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<td>Elective Academic or Theology</td>
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<tr>
<td>Mus 491 Physical Science (Acoustics)</td>
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<tr>
<td>Mus 431,432 Improvisation</td>
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<td>5 Mus 452 Organ Literature</td>
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<td>Mus 438,439 Composition</td>
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<td>447,448 Small Ensemble</td>
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</table>

1 Includes performance classes required by the organ department
2 If 452 Organ Literature 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 VOICE

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<td>Mus 131,132 Theory</td>
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<td>Mus 133,134 Solfege</td>
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<tr>
<td>Mus 143,144 Ensemble Chorus</td>
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<td>Mus 121,122 Physical Education (Eurhythmics)</td>
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<td>Eng 101,102 English Composition</td>
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<tr>
<td>Mus 193,194 Italian Diction</td>
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<tr>
<td>Sophomore Year</td>
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<tr>
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<td>Mus 211,212 Applied Music Minor (Piano)</td>
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<td>Mus 231,232 Theory</td>
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<tr>
<td>Mus 233,234 Solfege</td>
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<tr>
<td>Mus 251,252 Music and Western Civilization</td>
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<td>Fr 101,102 Elementary French</td>
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<td>Mus 243,244 Ensemble Chorus</td>
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<td>Mus 311,312 Applied MusicMinor (Piano)</td>
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<td>Mus 351,352 Music and Western Civilization</td>
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<tr>
<td>Ger 101,102 Elementary German</td>
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<tr>
<td>Mus 335,336 Counterpoint</td>
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<tr>
<td>Mus 349,350 Vocal Repertoire</td>
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<tr>
<td>Mus 343,344 Ensemble Chorus or</td>
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<tr>
<td>Mus 347,348 Small Ensemble</td>
<td>(1)</td>
<td>(1)</td>
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<td>Senior Year</td>
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<tr>
<td>Mus 403,404 Applied Music (Voice)</td>
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<tr>
<td>Mus 191 Human Physiology or</td>
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<td>(3)</td>
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<tr>
<td>Mus 253 Visual Arts or</td>
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<tr>
<td>Elective Academic or Theology</td>
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<td>Mus 449,450 Vocal Repertoire</td>
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<td>(2)</td>
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<tr>
<td>Mus 340 Orchestration</td>
<td>(2)</td>
<td>2</td>
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<tr>
<td>Mus 443,444 Ensemble Chorus or</td>
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<tr>
<td>447,448 Small Ensemble</td>
<td>(1)</td>
<td>(1)</td>
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</table>

1 Includes performance classes required by the organ department
2 Includes performance classes required by the voice department
## BACHELOR OF MUSIC—MAJOR IN ORCHESTRAL INSTRUMENT

**Freshman Year**

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<tr>
<th>Courses</th>
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<tbody>
<tr>
<td>Mus 103,104 Applied Music (Instrument)</td>
<td>3</td>
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<tr>
<td>Mus 111,112 Applied Music Minor (Piano)</td>
<td>1</td>
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<tr>
<td>Mus 131,132 Theory</td>
<td>2</td>
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<tr>
<td>Mus 133,134 Solfeggio</td>
<td>2</td>
</tr>
<tr>
<td>Mus 143,144 Ensemble Orchestra or Band</td>
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<tr>
<td>Mus 121,122 Physical Education (Eurhythmics)</td>
<td>2</td>
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<tr>
<td>Eng 101,102 English Composition</td>
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<tr>
<td>Mus 141,142 Chamber Music</td>
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**Sophomore Year**

<table>
<thead>
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<tbody>
<tr>
<td>Mus 203,204 Applied Music (Instrument)</td>
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<tr>
<td>Mus 211,212 Applied Music Minor (Piano)</td>
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<tr>
<td>Mus 231,232 Theory</td>
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<tr>
<td>Mus 233,234 Solfeggio</td>
<td>2</td>
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<tr>
<td>Mus 243,244 Ensemble Orchestra or Band</td>
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<tr>
<td>Mus 251,252 Music and Western Civilization</td>
<td>3</td>
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<tr>
<td>Mus 241,242 Chamber Music</td>
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**Junior Year**

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<tr>
<td>Mus 303,304 Applied Music (Instrument)</td>
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<tr>
<td>Mus 335,336 Counterpoint</td>
<td>2</td>
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<tr>
<td>Mus 351,352 Music and Western Civilization</td>
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<tr>
<td>Mus 341,342 Chamber Music</td>
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<tr>
<td>Mus 343,344 Ensemble Orchestra or Band</td>
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<tr>
<td>Mus 347,348 Small Ensemble</td>
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<td>Flectives (1) Academic</td>
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**Senior Year**

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<td>Mus 443,444 Ensemble Orchestra or Band</td>
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<td>Mus 447,448 Small Ensemble</td>
<td>(1)</td>
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<tr>
<td>Mus 191 Human Physiology or</td>
<td>3</td>
</tr>
<tr>
<td>Mus 253 Visual Arts or</td>
<td>(3)</td>
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<tr>
<td>Elective Academic or Theology</td>
<td>(3)</td>
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<tr>
<td>Mus 491 Physical Science (Acoustics)</td>
<td>3</td>
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<tr>
<td>Mus 379 Conducting</td>
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<tr>
<td>Mus 340 Orchestration</td>
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<td>Mus 441,442 Chamber Music</td>
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**Includes performance classes required by individual departments**

## BACHELOR OF SCIENCE IN MUSIC EDUCATION

**Freshman Year**

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<tr>
<td>Mus 131,132 Theory</td>
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<tr>
<td>Mus 133,134 Solfeggio</td>
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<tr>
<td>Mus 181,182 Woodwind Class Methods (Instrumental majors will enroll for 183, 184)</td>
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<tr>
<td>Mus 101,102 Applied Music Major</td>
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<tr>
<td>Mus 111,112 Applied Music Minor (Piano)</td>
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<tr>
<td>Mus 121,122 Physical Education (Eurhythmics)</td>
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<td>Mus 143,144 Ensemble</td>
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**Sophomore Year**

<table>
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<tr>
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<td>Mus 211 Applied Music Minor</td>
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<td>Mus 243,244 Ensemble</td>
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**Junior Year**

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<tr>
<td>Psych 103 Introduction to Psychology</td>
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<tr>
<td>Ed 301 Foundations of Education or</td>
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<tr>
<td>Ed 351 Educational Psychology or</td>
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<tr>
<td>Ed 201 Child Development or</td>
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<td>Ed 202 Adolescent Development</td>
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<tr>
<td>Mus 251,252 Music and Western Civilization</td>
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<tr>
<td>Mus 361,382 String Class Methods</td>
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<td>Mus 340 Orchestration</td>
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<td>Mus 379 Conducting</td>
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<td>Mus 383 Elementary Methods</td>
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<td>Mus 384 Secondary Methods</td>
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<td>Mus 301,302 Applied Music Major</td>
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<tr>
<td>Mus 343,344 Ensemble or</td>
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<tr>
<td>Mus 347,348 Small Ensemble</td>
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**Senior Year**

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<td>Elective Academic or Theology</td>
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<td>Mus 491 Physical Science (Acoustics)</td>
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<tr>
<td>Mus 253 Visual Arts</td>
<td>3</td>
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<tr>
<td>Mus 387 Marching Band Methods or</td>
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<td>Mus 385 Choral Methods</td>
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<td>Mus 492 Creative Personality or</td>
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## BACHELOR OF SCIENCE IN MUSIC EDUCATION—MAJOR IN MUSIC THERAPY

### Freshman Year

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<tr>
<td>Eng 101,102 English Composition</td>
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<td>Mus 131,132 Music Theory</td>
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<tr>
<td>Mus 133,134 Solfeggio</td>
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<tr>
<td>Mus 101,102 Applied Musc Major</td>
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<td>Mus 111,112 Applied Music Minor</td>
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<td>Mus 107 Music Therapy Orientation</td>
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<td>Mus 124 Music Therapy Practicum</td>
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<td>Mus 121,122 Physical Education (Eurhythmics)</td>
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### Sophomore Year

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<tbody>
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<tr>
<td>Mus 231,232 Music Theory</td>
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<tr>
<td>Mus 233,234 Solfeggio</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Mus 252 Music and Western Civilization</td>
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<tr>
<td>Mus 181 Woodwind Class Methods (for voice, piano, organ majors)</td>
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<tr>
<td>Mus 183 Woodwind Class Methods (for instrumental majors)</td>
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**Elective**

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<td>Mus 108 Music in Therapy</td>
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<td>Mus 201,202 Applied Music Major</td>
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<td>Mus 213,214 Class Piano</td>
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### Junior Year

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<th>Courses</th>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psych 103 Introduction to Psychology</td>
<td>3</td>
<td></td>
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<tr>
<td>Mus 351,352 Music and Western Civilization</td>
<td>3</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Mus 381 String Class Methods</td>
<td>2</td>
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<tr>
<td>Mus 281 Brass Class Methods (for voice, piano, organ majors)</td>
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<tr>
<td>Mus 283 Brass Class Methods (for instrumental majors)</td>
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</tbody>
</table>

### Senior Year

**Electives**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Mus 481 Percussion Class Methods</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Psych 352 Abnormal Psychology</td>
<td>3</td>
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<tr>
<td>Mus 191 Human Physiology</td>
<td>3</td>
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<tr>
<td>Mus 491 Physical Science (A)</td>
<td>3</td>
<td></td>
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<tr>
<td>Mus 307 Psychology of Music (A)</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Mus 600 Psychology of Music (B)</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Mus 309 Directed Study in Music Therapy (B)</td>
<td>2</td>
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<tr>
<td>Mus 397 Conducting</td>
<td>2</td>
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<tr>
<td>Mus 423,424 Music Therapy Practicum VI, VII</td>
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<tr>
<td>Mus 340 Orchestration</td>
<td>2</td>
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<tr>
<td>Mus 310 Recreational Instruments</td>
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<tr>
<td>Mus 443,444 Ensemble</td>
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**Elective**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Mus 345,346 Academic or Theology</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

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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
5. Electives in psychology, sociology, and special education will be selected following consultation with advisor
6. Take either Series A or B

## BACHELOR OF MUSIC IN SACRED MUSIC—MAJOR IN ORGAN

### Freshman Year

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Mus 101,102 Applied Music (Organ)</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Mus 111,112 Applied Music (Piano)</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Mus 131,132 Theory</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Mus 133,134 Solfeggio</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Mus 143,144 Ensemble (Chorus)</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Mus 121,122 Eurhythmics</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Eng 101,102 English Composition</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Theo 213,214 Old and New Testament</td>
<td>3</td>
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</tbody>
</table>
SCHOOL OF MUSIC

Sophomore Year

Mus 201,202 Applied Music (Organ) 2 2
Mus 211,212 Applied Music (Piano) 1 1
Mus 231,232 Theory 2 2
Mus 233,234 Solfegegio 2 2
Mus 311,312 Applied Music (Voice) 1 1
Mus 243,244 Ensemble (Chorus) 1 1
Mus 251,252 Music and Western Civilization 3 3
Theology Liturgics 3 3

Junior Year

Mus 301,302 Applied Music (Organ) 2 2
Mus 411 Applied Music (Voice) 1
Mus Children's Choirs
Mus 351,352 Music and Western Civilization 3 3
Mus 343,344 Ensemble 1 1
Mus 335,336 Counterpoint 2 2
Mus 340 Orchestration 2
Mus Sacred Choral Literature 2
Electives Electives 3 3

Senior Year

Mus 401,402 Applied Music (Organ) 2 2
Mus 431,432 Organ Improvisation 2 2
Mus 451,452 Organ Literature 2 2
Mus 443,444 Ensemble 1 1
Mus Choral Conducting and Methods 2 2
Mus Gregorian Chant 2
Mus Hymnody
Mus Organ Design and Maintenance 2
Mus Church Music Administration 2
Mus Music Elective 2
Mus Recital 2 2

COURSE DESCRIPTIONS

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 and 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

Var cr

Private study of voice, piano, organ, string, wind, or percussion instruments throughout all semesters. Credits are distributed according to departmental curricular. The candidate for the Bachelor of Music degree must give a recital during the senior year. The recital will be presented to a faculty committee for approval at least one month prior to the date of the performance.

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 who do not elect piano as a major must study it as a secondary instrument.

Students not majoring in piano must satisfy the following piano requirements before graduation: (a) construct and play with facility major and minor scales and cadences in all keys; (b) read simple four-part music; (c) play a simple Clements Sonatina and excerpts from Schumann's "Album for the Young," or their equivalent. A student majoring in piano or organ will select an applied music minor with the guidance of his advisor. Students who fail to meet the minimum requirements in the time allotted for their particular degree must continue study until the requirements have been fulfilled.

Transfer of Applied Music Credit

Transfer credit in the undergraduate Applied Music program can be granted only after the student's proficiency has been evaluated by a faculty panel in the student's area of specialization.

Changing Assigned Applied Music Teacher

Changes in assigned teachers can become effective only at the beginning of a new semester and cannot be accomplished while a semester is in progress. The student must discuss the feasibility of a proposed change with the appropriate department chairman.

BACHELOR OF MUSIC

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, Fret and Mouquet.

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

Scales and arpeggios continued, Oubradous, Eighteen Etudes, Labancha Studies, Brahms sonatas and Quintet for Clarinet and Strings, representative contemporary solos, orchestra studies.

403, 404 5 cr each

Oubradous, Scales and Daily Drills, Milde, Concert Studies, Orefici, Bravura Studies, selected passages from the Bach Cantatas, Mozart Concerto in B flat, Beethoven Quintet, representative contemporary solos, orchestra studies.

Clarinet

103, 104 3 cr each


203, 204 4 cr each

Scales and arpeggios continued, Rose, Twenty Studies after Rode, Jeaneau, Twenty-five Etudes, Weber Concertos, Mozart, Quintet for Clarinet and Strings, orchestral studies.

303, 304 4 cr each

Scales and arpeggios continued, Jeaneau, Eighteen Etudes, Labancha Studies, Brahms sonatas and Quintet for Clarinet and Strings, representative contemporary solos, orchestra studies.

403, 404 5 cr each

Oubradous, Scales and Daily Drills, Milde, Concert Studies, Orefici, Bravura Studies, selected passages from the Bach Cantatas, Mozart Concerto in B flat, Beethoven Quintet, representative contemporary solos and sonatas.

Double Bass

103, 104 3 cr each

Scales and intervals in all keys Simandl, Thirty Studies. Selected pieces. Orchestra studies.

203, 204 4 cr each

303, 304 4 cr each  
Nanny, Etudes de Kreutzer et de l’orilillo, concertos by Koussievtsky, Dittersdory and Bottsens, orchestral studies

403, 404 5 cr each  
Nanny, Dix Etudes Caprices, Storch, Twenty Concert Etudes, concertos by Koussievtsky and Dragonetti, orchestral studies

Flute

103, 104 3 cr each  

203, 204 4 cr each  
Taffanel-Gaubert Scales, scales in thuds and sixths, chromatic scales, arpeggios and trills Anderson, Etudes Op 21, Hughes, 40 New Studies, Moyse, De la Sonorite The Modern Gradus and Parnassum Selected duets by Kuhla, Koechlin and River, concertos by Haydn and Mozart, sonatas by LeClair, J S Bach and W F Bach, solos by Faure, Debussy, and Gaubert

303, 304 4 cr each  

403, 404 5 cr each  
Taffanel-Gaubert Scales, the half note equals MM 120, scales in thuds, sixths, octaves and tenths, Moyse, De la Sonorite, Melchizand and Chromatics, Anderson, Etudes Artistiques Op, 15, including the memorization of certain selected studies, Anderson Op 63, Jeanjean, Etudes Modernes, Orchestral Studies, Bach Sonata in A minor for unaccompanied flute, sonatas by Hindemith, Reinecke, Concerto by Ibert, works by representative contemporary composers

Guitar

Information and course content in preparation

Harp

103, 104 3 cr each  
Larriere Exercises and technical studies. Standard orchestra parts Bochsa Etudes opus 318, Book II Pieces grade of difficulty of Grandjany, Arna in Classic Style, Tourner, Images (Suite I), Saint-Saens, Fantasie

203, 204 4 cr each  
Technical studies Bochsa Etudes, opus 62 Standard orchestra cadenzas Pieces of grade difficulty of Tourner, Feene, Rousseau, Variations Pastorales, Grandjany, Fantasie on a Theme of Haydn

303, 304 4 cr each  
Technical studies Orchestra parts Bochsa Etudes, opus 34 Pieces grade of difficulty of Hindemith, Sonata, Handel, Concerto in Bb major, Ravel, Introduction and Allegro

403, 404 5 cr each  
Technical studies Pieces grade of difficulty of Faure Impromptu C P E Bach, Sonata, Salzedo, Scantillation, Debussy, Danses Sacre et Profane

Horn

103, 104 3 cr each  
Scales and arpeggios in all keys review of fundamentals of tone production, Alphonce, Deux Cents Etudes Nouvelles, Gallay, Thirty Studies, review of muting and trill technique, Dubois, Cavatine, Franz Strauss, Concerto

203, 204 4 cr each  
Alphonce, Deux Cents Etudes Nouvelles, Kopprach Studies, Strauss, Seventeen Concert Studies, Chabrier, Larghetto, Mozart, concertos, orchestral studies

303, 304 4 cr each  
Alphonce, Deux Cents Etudes, Nouvelles Kopprach Studies, Gallay, Twelve Caprices, Beethoven Sonata, Mozart, Concert Rondo, orchestral studies

Organ

103, 104 4 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 Gabriel, Frescobaldi, Buxtehude, Brahms, Bohm and Couperin, Bach, Orgelbuchlein selections, Eight Short Preludes and Fugues, Little Fugue in G minor and Cathedral Prelude and Fugue Hymn playing, transposition, modulations to closely related keys, counterpoint

104 5 cr each  
Alphonce, Deux Cents Etudes Nouvelles, Kopprach Studies, Gallay, Twelve Caprices, Beethoven Sonata, Mozart, Concert Rondo, orchestral studies

Percussion

103, 104. 3 cr each  
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 4 cr each  
Advanced snare drum studies, repertoire Three and four tympani exercises, orchestral literature Intermediate xylophone studies, transcriptions for solo
303, 304 4 cr each
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 5 cr each
Examination of representative solo material for all percussion instruments, preparation of solo for recital.

Piano
103, 104 4 cr each
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 4 cr each
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 4 cr each

313 PIANO METHODS I 2 cr
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 2 cr
A continuation of 313 concentrating on the techniques and materials for teaching piano at the intermediate and advanced levels.

303, 304 5 cr each
Bach, Suites, Partitas, Toccata, 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.

Saxophone
103, 104 3 cr each

203, 204 4 cr each
Mule, Scales and Arpeggios Vol II, Lamotte, 18 Studies for Saxophone, Salvami-Exercises in All the Practical Keys, Guillou, Sontaine, Glazounov, Concerto.

303, 304 4 cr each

403, 404 5 cr each
Rascher, Top Tunes and Four Octave Studies, Mule, 53 Studies, Loyon, Thirty-two Studies, Montz, Concerto, Contemporary solos, orchestra studies.

Trombone and Baritone Horn
103, 104 3 cr each

203, 204 4 cr each

303, 304 4 cr each

311, Kopprasch Studies Vol II, Blazhevich, Clef Studies, Bach Cello Suites transcribed for Trombone, Blazhevich, Concert Duets, Sanders Sonata, Galliard, Six Sonatas, orchestral and band studies.

403, 404 5 cr each
Gaetke, Lip Flexibility, La Fosse, Complete Method for Trombone, Blazhevich, 26 Sequences in Bass, Tenor and Alto Clefs, Rimsky-Korsakov, Concert, Hindemith Sonata, Grandahl Concerto, Blazhevich, Concerto No 2 orchestral studies, study of bass trombone.

Trumpet
103, 104 3 cr each
Scales and arpeggios in three octaves, two octaves scales in thirds, sixths, octaves, and tenths. Rode, Caprices, Wieniawski, Caprices, Mozart, Concerto No 4, Vieux-temps Fantasie Appassionate.

203, 204 4 cr each
Scales and arpeggios continued Dont, Twenty-four Etudes, Mozart, Concerto No 5. Wieniawski, Concerto No 2, Bach, Sonatas for violin and clarinet.

303, 304 4 cr each
Continue scales and arpeggios, add all possible four octave scales. Gavannes, Twenty-four Matinees, Bruch, Concerto in D minor No 2. Lalo, Symphonie Espagnole, sonatas by Beethoven and Brahms.

403, 404 5 cr each
Wieniawski, Ecole Moderne, Pagannini, Caprices, Bach, solo sonatas and partitas, concertos by Beethoven and Brahms.

Viola
103, 104 3 cr each
Scales and arpeggios in three octaves, selected scales in thirds, sixths and octaves. Flach, Scale Studies, Sevack, Studies (Lefschay), Campagnoli, Forty-one Caprices, Fuchs, Twelve Caprices, Enesco, Concert Piece.

203, 204 4 cr each
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.I. Bach, and Hoffmeister, Vaughan-Williams, Suite, Sonata by Milhaud, parts from orchestral and chamber music literature.
303, 304 4 cr each
Continue scales and arpeggios. Selections from Rode, Caprices and Gavottes, Twenty-Four Mathe- nees Sonatas by Brahms and Creston, Violin parts from orchestral and chamber music literature.

403, 404 5 cr each
Selected Studies from Paganini, Caprices, Reger, Three Suites Bach, unaccompanied violin or violoncello works transcribed for viola, Bloch, Suite for Viola, concertos by Bartok, Walton, Porter.

Violoncello
103, 104. 3 cr each
Scales and arpeggios in three octaves with varied bowings Duport Studies, Franchomme, Twelve Caprices Sonatas of Veracini, Locatelli, and Bocchieri.

203, 204. 4 cr each
Scales and arpeggios in four octaves with varied bowings, scales in thirds, sixths and octaves, chromatic scales, and seventh chords Franchomme, Twelve Caprices, Duport, Etudes Concertos by Romberg, Popper and Saint-Saens, sonatas by Bocchieri and Haydn Orchestral studies Contemporary works.

303, 304 4 cr each
Continue scales. Studies by Servans and Patti Concertos by Daviddoff, Dohnanyi, Lalo, Boellmann, Symphonic Variations, arpeggione Sonata Contemporary solos and sonatas Orchestral studies and chamber music literature.

403, 404 5 cr each
Studies by Servans, Patti and Popper Concertos by Haydn, Bocchieri, Elgar, Barber, Schubert, Arpeggione Sonata Contemporary solos and sonatas Orchestral studies and chamber music literature.

Voice
109, 110 3 cr each
Fundamentals of tone production and technical exercises to fit the needs of the student. Early Italian art songs and songs in English chosen for the purity and simplicity of their line. Sight singing.

193, 194 4 ITALIAN DICTION 1 cr each
Spoken and sung pronunciation of Italian for singers, with minimal emphasis on grammar.

203, 204 3 cr each
Exercises to develop flexibility, range, and power. Early Italian art songs including more florid examples than used in the first year. Early Italian arias by Handel and Monteverdi, Oratorio arias by Bach, Handel, and Haydn, German lieder of Schubert and Schumann, French art songs of Faure and Duparc.

303, 304 4 cr each
Operatic and oratorio materials chosen from the standard repertoire in French, German, Italian, and English. German lieder of Brahms, Wolf, and Strauss, French art songs of Chausson, Debussy, Faure, Hahn and Ravel.

403, 404 6 cr each
Continued study of vocal literature chosen with special consideration for individual needs. All students must have at least one complete oratorio and one complete operatic role ready for performance before graduation. The student's repertoire should contain representative songs in Italian, French, German, and English, including significant examples of contemporary vocal literature.

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.

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 British) music, with concentration on one category each semester.

BACHELOR OF SCIENCE IN MUSIC EDUCATION

Bassoon
101, 102 2 cr, each

201, 202 2 cr each

301, 302, 303, 304 4 cr each
Milde, Studies in All Keys, Jancourt, Grand Method Book II, Kavar Studies, sonatas by Marcello and Cools, orchestral studies.

401, 402 2 cr each
Selected studies from Milde, Concert Studies Vol. I, Telemann, Sonata, orchestral studies.

Clarinet
101, 102 2 cr each
Scales and arpeggios, Klose, Celebrated Method for Clarinet, Part II, Baerman, Method Book II, selected solos.

201, 202 2 cr each
Continue scales and arpeggios in various articulations continue Klose Method, Rose, 32 Studies for Clarinet, Vixman, Duets, selected solos.

301, 302, 303, 304 2 cr each
Langenus, Scale Studies, continue Rose, 32 Studies, Klose, 20 Characteristic Studies, Weber, Fantasy and Rondo, orchestral and band studies.

401, 402 2 cr each
Continue Langenus, Scale Studies, Rose, 42 Studies, Polatchak, 12 Etudes for Clarinet, Mozart, Concerto in A, solos by Jeannin, contemporary solos, 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.

Flute
101, 102 2 cr each
Kohler, Etudes Book I, Terschak 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, Berggauer, 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.

Guitar
Information and course content in preparation.

Harp
101, 102 2 cr each
Lansere Exercises and technical studies Standard orchestra parts Bochsa Etudes opus 318, Book II Pieces grade of difficulty of Grandjany, Aria 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 grade of
difficulty of Tourner, Feerne, Rousseau, Variations
Pastorales, Grandjany, Fantasie on a
Theme of Haydn
301, 302 2 cr, each
Technical studies Orchestra parts Bochsa
Etudes, Opus 34 Pieces grade of difficulty of
Hindemith, Sonata, Handel, Concerto in Bb
major, Ravel, Introduction and Allegro,
401, 402 2 cr, each
Technical studies, Pieces grade of difficulty of
Faure, Impromptu, C.P.E. Bach, Sonata,
Salzedo, Scintillation, Debussy, Danses Sacre et
Profane
Horn
101, 102 2 cr, each
Fundamentals of tone production, scales and
arpeggios in various articulations, chromatic
scales, ability to read in at least two clefs,
Mozart, Concerto No 3, selected melodic ma-
terial
201, 202 2 cr, each
Extend range of all scales and arpeggios,
diminished seventh chords, muting and prepara-
tory trill studies, ability to read in three or four
clefs, Alphonse, Deux Cents Etudes Nouvelles
Book II, selected solos, orchestral studies
301, 302 2 cr, each
Continue scales, arpeggios and other drills
Alphonse, Deux Cents Etudes Nouvelles Book
III, selected studies from Kopprasch 60 Studies
Book I, R Strauss Concerto, orchestral studies
401, 402 2 cr, each
Continue scales, arpeggios and technical drills,
Kopprasch, 60 Studies, Gallay, 30 Studies,
solos by Mozart, Godard, Corelli, representative
contemporary solos, orchestral studies
Oboe
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
401, 402 2 cr, each
Barret, Etudes, selected etudes by Ferling,
continue scales and arpeggios, solos by Bach and
Handel, contemporary solos
Organ
101, 102 2 cr, each
Gleason, Method of Organ Playing, Stanley,
Voluntaries, Franck, L'Organiste, Viener, 24
Pieces, Dupre, Chorale Preludes, Pachelbel,
Fugues on the Magnificat Selected compo-
sitions by Gabrieli, Frescobaldi, Buxtehude,
Brahms, Bohm and Couperin, Bach, Orgel-
buchlein selections, Light Short Preludes and
Fugues, Little Fugue in G minor and Cathedral
Prelude and Fugue, Hymn playing, transposi-
tion, modulations to closely related keys,
counterpoint
201, 202 2 cr, each
Brahms, Chorale Preludes, Mendelssohn
Schumann, Hindemith, Sonatas, Jenkins, Six
Pieces, Dupre, Antiphons, Messiaen, Le Ban-
quet Celeste or Ascension Suite, movements 1
or 4, Langlais, Franck, Cantabile or Prelude,
Fugue and Variation, Schroeder or Pepping,
Viener, Pieces de Fanteasse, Bach, Orgel-
buchlein, Trio Sonata, Concerti, Prelude and
Fugue in G Major, D minor, C minor, F minor,
Schubert Chorales Hymn playing, keyboard
harmony, modulations to all keys, counter-
point
301, 302 2 cr, each
D'Aquin, Clerehault, deGogny, Handel, Con-
certi, Franck, Fantaisies, Piece Henreque
Sowtery and contemporary American selec-
tions, Mozart, Swelinck, Bach, 18 Great
Chorales, Toccata, Adagio and Fugue, Prelude
and Fugue in A minor, D major, Orgelbuchlein
Hymn playing, free harmonizations, keyboard
harmony and counterpoint, anthem accompaniment
401, 402 2 cr, each
Franck, Chorales, Messiaen, Nativite, Lizet,
Dupre, Preludes and Fugues, Duraifle, Langlas,
Viener and Widor, Symphonies, Alain, Tourn-
emire, selected works by Pascacaglia and Fuge,
Prelude and Fugue in B minor, E minor, G minor
Clavereun, Part III Conducting from the
console, accompaniment of larger choral works,
improvisation
431, 432 IMPROVISATION Var cr
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.

Percussion
101, 102 2 cr, each
Rudimentary snare drum technique, analysis of
existing methods Elementary tympani tech-
nique, uses of tympani in classical literature,
tuning
201, 202 2 cr, each
Intermediate snare drum studies, elementary
vocal technique Intermediate tympani
studies, orchestral literature Beethoven to
Wagner Performance techniques of most com-
monly used equipment
301, 302 2 cr, each
Use of tympani and percussion in late 19th and
20th century literature Orchestral studies in all
instruments Examination of percussion en-
semble materials, group instruction methods
Selection and care of instruments for pro-
fessional and school use Extension of mallet
study
401, 402 2 cr, each
Deployment of instruments in band and or-
chestra settings, conducting the percussion en-
semble 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
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
Bach, two and three part inventions, sonatas of
Haydn and Mozart, easier sonatas of Beethoven,
nocturnes and waltzes of Chopin, Schumann
Op 15, Scales Major and Minor M M quarter
note equals 104 Dominant and diminished
seventh arpeggios M M quarter note equals 96
301, 302 2 cr, each
Bach, selected preludes and fugues from Well-
27, Chopin, preludes and nocturnes selections
from contemporary repertoire Continuation of
major and minor scales, dominant, diminished
seventh and trill arpeggios
401, 402 2 cr, each
Bach, French Suites, selected preludes and
fugues Beethoven Op 2 No 2 and 3, Op 28,
Op 31, preludes and Improvisations of Chopin,
Brahms, Intermezzi, selections from con-
temporary repertoire, Scales and arpeggios con-
tinued
501, 502 2 cr, each
All major and minor scales and arpeggios,
Universal Method for Saxophone or equivalent
material, Bachi-lasilli, Concert Etudes, selected
solos
201, 202 2 cr, each
Continue scales and arpeggios with various
articulations Bachi-lasilli, Concert Etudes, se-
lected solos
301, 302 2 cr, each
Mule, Scales and Arpeggios, Gatti-lasilli, 35
Melodious Technical Exercises, pieces by Faure and Jeangeau,
401, 402 2 cr each Male, Scales and Arpeggios, Gatti-Iastilli, 35 Melodious Technical-Exercises, Labanch-Iastilli, 33 Concert Etudes, Premier Solo de Concours by Pares, Morris, Sonata for Saxophone, representative contemporary solos

Trombone and Baritone Horn
101, 102 2 cr each Studies and exercises in tone production and flexibility by Shumer, Arban, Method for Trombone, major and minor scales through two octaves, selected solos
201, 202, 2 cr each All scales and arpeggios, continue drills and Arban Method for Trombone, selected studies from Cimera, 170 Etudes, Study of single, double and triple tonguing, Pyyr solos and other selected materials, band and orchestral studies
301, 302 2 cr each Continue technical exercises, Stacey, Lip Flexibility, Rochut, Melodious Etudes Book II, Blume, Studies Book I, La Fosse, Sight Reading Studies, study of tenor clef, Croce-Spinelli, Solo de Concours, Alary, Contest Pieces, Morel, Piece in F minor
401, 402 2 cr each Continue technical exercises, Stacey, Lip Flexibility, Kopprasch Book I-II, Rochut, Melodious Etudes Book III, Blazieh, Clef Studies, study of bass trombone, Guilmant, Moreau Symphonique, Cimera, Valse Pettie, Repartiz, Andante and Allegro

Trumpet
101, 102 2 cr each All scales and arpeggios, Schlossberg, Daily Drills, Arban, Complete Method for Trumpet, selected short pieces
201, 202, 2 cr each All major and minor scales and arpeggios, Schlossberg, Daily Drills, Arban, Complete Method for Trumpet, Kreutzer, Ten Studies, Concerto by Grofe, selected solos, band and orchestral studies

201, 202, 2 cr each Continue scales and arpeggios in various articulations, Schlossberg, Daily Drills, Concone, Fifty Lessons, Brandt, Etudes for Trumpet, Bernstein, Rondo for Life, Two Pieces for Trumpet by Kasev
401, 402 2 cr each Continue Schlossberg and Concone, Laurent, Etudes Practiques Book I and II, Herwing, 32 Etudes, Clarke solos, Mouquet, Legende Heroique, Baly, Petite Piece Concertante

Tuba
101, 102 2 cr each All scales and arpeggios, Arban Method for Trombone and Baritone, selected solo material
201, 202, 2 cr each All scales and arpeggios with various articulations, continue Arban, Bell, the foundations of Tuba and Sousaphone Playing, selected solos
301, 302 2 cr each Continue scales and arpeggios, chromatic scales, Bell, Foundations of Tuba and Sousaphone Playing, Vandercook, Etudes, Rochut, Melodious Etudes Book I, Blume Studies Book I, Tyrell, Advanced Studies for the BB flat Tuba, selected solos, band and orchestra studies
401, 402 2 cr each Rochut, Melodious Etudes Book II, Blume Studies Book II, Blazieh, Etudes for the BB flat Tuba, selected solos, band and orchestra studies

301, 302 2 cr each Continue scales and arpeggios, chromatic scales, Bell, Foundations of Tuba and Sousaphone Playing, Vandercook, Etudes, Rochut, Melodious Etudes Book I, Blume Studies Book I, Tyrell, Advanced Studies for the BB flat Tuba, selected solos, band and orchestra studies

Viola
101, 102 2 cr each All scales and arpeggios, Arban, selected compositions by Grutzmacher, Etudes, Sonatas by Graziob, Samuel, Goltermann Concerto No. 1
201, 202, 2 cr each Scales and arpeggios as before but including thirds, sixths and octaves Duport Studies, selected studies from Franck, 12 Caprices, Concerto No 2 Romberg, Sonatas by Nardms and Sammartini, orchestral studies

401, 402 2 cr each Scales and arpeggios continued, Tuor Etudes, selected compositions by Kressler, representative contemporary solos, selected movements of standard concerts

Vocals
101, 102 2 cr each Fundamentals of tone production, vocables 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, Cacini, 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

CONDUCTING
379 Conducting
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

BACHELOR OF SCIENCE IN MUSIC EDUCATION

1 cr. each Voice, Piano, and Organ Majors will participate in a chorale or ensemble for each semester of enrollment. Instrumental Majors will participate in Band, Orchestral and/or other instrumental ensembles for each semester of enrollment. Instrumentalists are encouraged to take advantage of opportunities to participate in choral, keyboard or voice majors are likewise encouraged to gain experience in one of the instrumental ensembles.

BACHELOR OF MUSIC

Voice Majors will participate in choral or other vocal ensemble. Piano and organ majors will accompany solosists as approved by the studio faculty. Instrumental Majors will participate in Band, Orchestra, and other instrumental ensemble. Required for all students as laboratory work during each semester of full-time enrollment.

147, 148, 247, 248, 347, 348, 447, 448 SMALL ENSEMBLE

The Small or Minor Ensembles include Tambauntza Ensemble, Chamber Singers, Brass Ensemble, Percussion Ensemble, Woodwind Ensemble, Jazz Ensemble, and Guitar 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

A performance class in which students learn standard and other opera repertoire 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.

MUSIC EDUCATION

181, 182 WOODWIND CLASS METHODS I, II

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 and spring semesters. Two hours a week.

183 WOODWIND CLASS METHODS I

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.

282 BRASS CLASS METHODS II

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 and spring semesters. 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 voice, piano, and organ majors in the music education program. Offered in the fall and spring semesters. Two hours a week.

284 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 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 2 cr
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 observation and discussion periods will be required. Two hours a week.

385. CHORAL METHODS 1 cr
This course deals with all aspects of choral singing and their application to school music programs. Emphasis is placed on the development of performance ensembles, rehearsal techniques, special choral problems, planning musical productions and practical work in choral conducting and arranging. Includes principles, practices, materials, and an overview of current teaching strategies and curriculum trends as applied to the total music program of the secondary school. Offered Spring Semester only.

387 MARCHING BAND METHODS 1 cr
Principles, practices, and materials for the marching band are studied including its role in the total music program, organization and maintenance, planning and executing of the field show, basic maneuvers and rehearsal procedures. Offered Fall Semester only.

481 PERCUSSION CLASS METHODS 2 cr
Fundamental principles and techniques of playing and teaching the percussion instruments of the band and orchestra with special emphasis on the snare drum. Two hours a week.

490 STUDENT TEACHING 6 cr
Practice teaching in approved elementary and secondary schools under the guidance of a critic teacher and the college supervisor. Before a student will be permitted to begin Student Teaching, all methods classes including instrumental classes, piano, woodwinds, brass, strings, and voice must be satisfactorily completed. Percussion class may be taken in the senior year prior to or concurrently with the student teaching assignment. Students will receive complete instructions, together with lists of materials, when they enroll in the Music Education program. Practical techniques to aid students in fulfilling the requirements will be explored in various methods classes.

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 centuries 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.

451, 452 ORGAN LITERATURE 2 cr each
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 visits to the museums and galleries in the Pittsburgh area.

SCHOOL OF MUSIC
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. Two 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 teaching, 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, particularly orchestral music, 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 of the basic 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.

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.

MUSIC THERAPY
107 MUSIC THERAPY ORIENTATION 2 cr
An introduction to Music Therapy as practiced in a variety of rehabilitation settings. Observations followed by informal group discussions. Basic theory about the validity of music as therapy, the relationship of theory to practice. Intensive class participation will be required.
prove qualification for further, in-depth study of the profession.

108 MUSIC IN THERAPY 2 cr
A course designed to increase the student's self-identification as a music therapist by weekly assignments to rehabilitation settings. Understanding goals and relationships of treatment or education, learning to make systematic observations through written progress reports, and discussions about specific writings related to personal experiences are included in the course work. Prerequisite Music Therapy 107

307 PSYCHOLOGY OF MUSIC 2 cr
An exploration of musical behaviors, and to a lesser degree, all other art behaviors of a variety of cultures and sub-cultures, beginning with the student's personal experience. Extensive class participation will be expected. Prerequisite Psychology

308, INFLUENCE OF MUSIC ON BEHAVIOR 2 cr
A study of the uses of music in society, including movies, television, industry, churches, schools, hospitals, etc., and the rationale thereof. Discussion, reading and individual research projects will be assigned. Prerequisites: General Psychology or equivalent and Junior standing

309 DIRECTED STUDY IN MUSIC THERAPY 2 cr
124, 223, 224, 323, 324, 423, 424 MUSIC THERAPY PRACTICUM 1 cr each
Supervised field work in an approved agency

SACRED MUSIC
CHILDREN'S CHOIRS 1 cr
Materials and techniques used in dealing with children's choirs

CHORAL CONDUCTING AND METHODS 2 cr
Development of conducting technique. The study, rehearsal and class performance of choral works in various styles

CHURCH MUSIC ADMINISTRATION 2 cr
Seminar in practical aspects of church music establishing the music program in a church, graded choir systems, children's choirs, instruments in worship, contracts, cantor systems, worship commissions, etc

GREGORIAN CHANT 2 cr
The history, notation and modal systems of Gregorian chant. Class participation in the singing of chant. Chant as prayer and current liturgical application

HYMNOLOGY 2 cr
A study of the church's heritage of song: the psalms, the great hymns of the Medieval Church, the heritage of Luther, Calvin and their followers, English hymnody, American contributions, twentieth-century hymnody with special emphasis on the theological framework for each major development in the history of hymns

ORGAN DESIGN AND MAINTENANCE 2 cr
A study of the basic concepts of organ construction with emphasis on the historical development of the organ and mechanical operation of the pipes and console tuning, voicing, and esthetics of organ design will be discussed

SACRED CHORAL LITERATURE 2 cr
A survey of choral literature for the church with emphasis on practical materials for church choirs and congregations

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 roles 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

NON-MUSIC MAJORS
253 VISUAL ARTS 3 cr
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

321 MUSIC FOR THE CLASSROOM TEACHER 2 cr
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

GENERAL EDUCATION
191 HUMAN PHYSIOLOGY 3 cr
A study of the fundamental principles of human physiology as a basis for the understanding of artistic expression and music therapy

491 PHYSICAL SCIENCE (ACOUSTICS) 3 cr
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. Consideration is also given to the mechanism of hearing and the physical basis of harmony, scales, electronic recording, and reproduction of recorded sound

492 DEVELOPMENT OF THE CREATIVE PERSONALITY 3 cr
This course encourages personal and social creative growth through discussion and participation in individual and group problem solving projects. Situations are structured, based on the philosophical and psychological dynamics of the creative person. Limited enrollment. Prerequisite: Introduction to Psychology. Educational Psychology, and consent of the instructor

SCHOOL OF MUSIC

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 of this Catalog
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 generic nursing students and registered nurse students in which they enroll for courses leading to the degree of Bachelor of Science in Nursing.

PHILOSOPHY
The School of Nursing's philosophy and objectives evolve from those of the University. As such, they guide the development of a personal philosophy of life based on a Christian frame of reference, and support a commitment to the values which give meaning to life. To accomplish this, the faculty of the School of Nursing approaches the concepts of Man, Nursing, and Health from an existential philosophical base.

Man is a living unity, a creative act of God, whose existence in the world is through his body. The existence is co-constituted, that is, man's relationship with his environment is participative. Man chooses his way of being with the world, and in that choosing he gives meaning to the situation. His freedom is limited within his situation. Man's existence has the potential to become more meaningful through Christ-participation in humanity.

Nursing is a human science profession primarily concerned with the care of man as he evolves from conception through death. It focuses on helping individuals and families to promote health and enhance the quality of living. The nurse interrelates with families to help them describe their health status, evaluate alternatives, and mobilize their resources for change. Central to professional nursing practice is the nursing process, which is a deliberate systematic series of actions designed to affect nursing care. The nurse bases her practice on theories and concepts that are multidisciplinary in nature.

Health is a subjective state of well-being experienced by man. It is a relative condition that affords an individual the potential for productive and meaningful life. While health is a fundamental right, every person has the freedom to pursue his desired level of health. Society's health-nursing needs
are assessed by both the consumer and the promoters of health care through a participative process which involves planning and decision-making.

Education occurs in a co-constituted teaching-learning environment. The teacher and the student work together in planning experiences and sharing knowledge. The teacher provides leadership in the selection and organization of learning experiences in a variety of health settings. The need for new knowledge and the revision of present knowledge is identified in the ongoing interrogation of new experiences.

The professional nurse is educated in an institution of higher learning in a program which grants a baccalaureate degree in nursing. He/she is a creative innovator who finds satisfaction in giving service to others, who regularly evaluates self, who plans for continual growth, and who promotes the evolution of nursing toward independence.

The Duquesne University School of Nursing baccalaureate program graduates a generalist who is prepared to function on a beginning level within established health care systems and who possesses the flexibility to function in a variety of settings. The graduate program builds upon the baccalaureate program and prepares the graduate for the leadership roles of family health nurse, teacher of family health nursing or administrator of family health nursing services.

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.

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:

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 181). 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: $25
  (One $5.00 breakage card a semester will cover laboratory courses in biology, chemistry and physics.)

- Anatomy and Physiology
  Laboratory Fee: $25
  Breakage Deposit: $5
Challenge Examinations  
Each credit hour—$10  
(non-refundable)

Miscellaneous Costs  
Uniforms, approximate total cost $50  
Special health requirements  
Books and miscellaneous supplies  
Transportation to and from agencies, approximate cost $5 weekly  
School of Nursing pin for graduation, approximate cost $15  
Student Liability Insurance (Professional), approximate cost $41 for three-year period

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.

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 quality point 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.

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 requirements 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 that 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.

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

<table>
<thead>
<tr>
<th>Courses</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science (laboratory)</td>
<td>4 credits</td>
<td>4 credits</td>
</tr>
<tr>
<td>English</td>
<td>3 credits</td>
<td>3 credits</td>
</tr>
<tr>
<td>Psychology</td>
<td>3 credits</td>
<td>Sociology 3</td>
</tr>
<tr>
<td>Science (laboratory)</td>
<td>4 credits</td>
<td>4 credits</td>
</tr>
<tr>
<td></td>
<td>14 credits</td>
<td>14 credits</td>
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#### Sophomore Year

<table>
<thead>
<tr>
<th>Courses</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Anatomy &amp; Physiology</td>
<td>4</td>
</tr>
<tr>
<td>Human Development</td>
<td>3</td>
</tr>
<tr>
<td>Nutrition</td>
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<tr>
<td>Sociology</td>
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<tr>
<td>Philosophy</td>
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<td></td>
<td>16</td>
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#### Junior Year

<table>
<thead>
<tr>
<th>Courses</th>
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<tbody>
<tr>
<td>Commonalities in Nursing</td>
<td>9</td>
</tr>
<tr>
<td>Speech</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Management</td>
<td>3</td>
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<tr>
<td></td>
<td>15</td>
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</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing &amp; The Family I</td>
<td>9</td>
</tr>
<tr>
<td>Nursing Electives</td>
<td>9</td>
</tr>
<tr>
<td>Systematic Inquiry into</td>
<td>3</td>
</tr>
<tr>
<td>Nursing Electives</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

### CURRICULUM STANDARDS

To progress to the junior clinical nursing courses, a minimum QPA of 2.5 is required with a minimum of a C grade or better in Anatomy and Physiology, Nutrition and Pathophysiology.

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.

### SCHOOL OF NURSING

#### School Nurse Certification

Through completion of the baccalaureate curriculum leading to School Nurse Certification, a student will be eligible to apply for School Nurse Certification. Application for certification must be made through the Office of the Dean.

### DEGREE CURRICULUM FOR SCHOOL NURSE

#### Core Requirements

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
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</tr>
<tr>
<td>Speech</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Religion</td>
<td>3</td>
</tr>
<tr>
<td>Survey of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>*Principles of Chemistry</td>
<td>8</td>
</tr>
<tr>
<td>*General Biology</td>
<td>8</td>
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</tbody>
</table>

#### Professional Nursing

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy and Physiology</td>
<td>8</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>303 Commonalities in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>307 Nursing &amp; The Family I</td>
<td>9</td>
</tr>
<tr>
<td>401 Systematic Inquiry in Nursing</td>
<td>3</td>
</tr>
<tr>
<td>421 Health Care in the</td>
<td>3</td>
</tr>
<tr>
<td>School Setting</td>
<td>3</td>
</tr>
<tr>
<td>Senior Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

### COURSE DESCRIPTIONS

Descriptions of courses in liberal arts and sciences may be found in the College of Liberal Arts and Sciences section, pages 14 to 65.

#### 209, 210 ANATOMY AND PHYSIOLOGY

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

Introduction to the basic scientific concepts of the disease process. Lecture, three hours.

#### 255 NUTRITION

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.

**Prerequisite:** Minimum of 12 credits of laboratory sciences.

**Semester:**
- Lecture, three hours

**303 COMMONALITIES IN NURSING**

- The beginning nursing course which provides core content common to nursing practice. The nursing process is the unifying focus and is the means by which care is provided to clients/families in various settings.
- Prerequisites: 209, 210, 211, 255.

- Lecture, five hours, Laboratory, 12 hours

**Semester:**
- Lecture, three hours Spring Semester

**413 FEMINIST INQUIRY IN NURSING**

- This course reviews the history of nursing and the role of women in the healing professions. Focus, in the historical context, is upon the role of the nurse in the health system or the setting of the time. Philosophical assumptions and psychological, sociological, and theological theories describing or defining the nature of women are discussed.
- Prerequisites: 303, 305, 307.

- Lecture, three hours Spring Semester

**421 HEALTH CARE IN THE SCHOOL SETTING**

- This course is concerned with the traditional and expanded roles, functions and responsibilities of the school nurse in providing health services and health education for school populations in a variety of settings. Major emphasis is on the theoretical and practical dimensions of nursing in the promotion of health and the prevention and control of disease.
- Prerequisites: 303, 305, 307.

- Lecture, two hours, Laboratory, three hours Spring Semester

**425 THE LONG TERM CLIENT AND FAMILY IN THE COMMUNITY**

- This course builds upon the concepts of family health care that were implemented in the various settings. Family theories are presented and the student has the opportunity to implement the nursing process with long-term clients and families in a community setting.
- Prerequisites: 303, 305, 307.

- Lecture, one and one-half hours, Laboratory, four and one-half hours Spring Semester

**427 CONCEPTS OF CRITICAL CARE NURSING**

- This course focuses on the nursing care of the critically ill client. Specific concepts will be utilized to organize both the existential and the task-oriented dimensions of nursing in the critical care environment. Research in the nursing literature is compared to the phenomenological approach in the discussion of the following concepts: The World as Environment, Technology, Depersonalization, Dependency, Anxiety, Immobility, Pain and Suffering.
- Prerequisites: 303, 305, 307.

- Lecture, one and one-half hours, Laboratory, four and one-half hours Spring Semester

**435 CARE OF THE DYING CLIENT AND HIS FAMILY**

- The focus of this course is the nursing student's implementation of the nursing process with a client and family in life-threatening situations and the dying process. Various theories of the dying process are reviewed. Dying is discussed as a personal, individual phenomenon. Death is examined as a biological and medical reality, as a social and cultural event, and as an economic fact of life as a psychological process, and as a religious and spiritual event.
- Prerequisites: 303, 305, 307.

- Lecture, one and one-half hours, Laboratory, four and one-half hours Spring Semester

**443 REHABILITATION NURSING IN THE GENERAL HOSPITAL**

- This course focuses on the client and his family as members of a community. The general hospital and ambulatory care setting are viewed as an integral part of the community. The concept of continuity of care is explored by students as they participate in the rehabilitation process. Nursing care and discharge planning of hospitalized persons with post-hospital needs are discussed.
- Prerequisites: 303, 305, 307.

- Lecture, one and one-half hours, Laboratory, four and one-half hours Spring Semester

**460 THE SCHOOL AND THE LAW**

- The study of the law as it relates to professional employees of the school, the pupil and the school nurse. It includes a study of the school nurse's duties, rights and her relationships to other school personnel. Philosophical assumptions and psychological, sociological, and theological theories describing or defining the nature of women are discussed.
- Prerequisites: 303, 305, 307.

- Lecture, three hours Spring Semester

**455 ADVANCED CONCEPTS IN CHILD HEALTH CARE**

- This course focuses on the pathophysiology of pediatric diseases and children's reactions to illness and dying. Family dynamics and changes within the family resulting from illness of a child are explored in depth. Specific nurse roles and functions as a health care provider in prevention and during acute chronic, and terminal phases of pediatric illness are emphasized.
- Prerequisites: 303, 305, 307.

- Lecture, three hours Spring Semester
School of Pharmacy

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, bionucleonic laboratory, eight additional teaching laboratories, and a manufacturing pharmacy laboratory containing basic pharmaceutical manufacturing equipment and separate tabletting 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 posi-
tions. 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.

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 hospital 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 physicists are available in hospitals and any laboratories and industrial facilities which use radioisotopes.

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.

Residency Requirements

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 residency requirement is applicable to all students regardless of advanced standing status.

CURRICULUM

A minimum of 15 credits in the combined areas of humanities and social sciences is required for graduation from the School of Pharmacy (none in the humanities, including theology, and six in the social sciences, including economics). Courses for fulfilling the theology requirement are listed under the Department of Theology in the College of Liberal Arts and Sciences section of this Catalog. A minimum of 160 credits is required for graduation.

The faculty reserves the right to require completion of course clusters in the humanities and social sciences. Students may receive a list of the courses in each cluster from their advisors.

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.

First Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>101 English Composition</td>
<td>102 English Composition</td>
</tr>
<tr>
<td>105 Mathematics</td>
<td>115 Mathematics</td>
</tr>
<tr>
<td>111 General Biology</td>
<td>112 General Biology</td>
</tr>
<tr>
<td>112 General Chemistry</td>
<td>122 General Chemistry</td>
</tr>
<tr>
<td>1 Pharmaceutical Orientation</td>
<td>13 12 16</td>
</tr>
<tr>
<td>14 8 16</td>
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Second Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>201 General Physics</td>
<td>202 General Physics</td>
</tr>
<tr>
<td>205 Organic Chemistry</td>
<td>206 Organic Chemistry</td>
</tr>
<tr>
<td>121 General Chemistry</td>
<td>122 General Chemistry</td>
</tr>
<tr>
<td>14 Pharmaceutical Math</td>
<td>Theology or Elective</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>16 6 17</td>
</tr>
<tr>
<td>15 7 17</td>
<td></td>
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</table>

Third Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Physical Pharmacy</td>
<td>12 Physical Pharmacy</td>
</tr>
<tr>
<td>13 Pharmaceutical Law</td>
<td>16 Biochemistry</td>
</tr>
<tr>
<td>17 Anatomy and Physiology</td>
<td>18 Anatomy and Physiology</td>
</tr>
<tr>
<td>20 Anatomy and Physiology Laboratory</td>
<td>35 Medical Microbiology</td>
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<tr>
<td>Elective</td>
<td>13 10 16</td>
</tr>
<tr>
<td>12 7 14</td>
<td></td>
</tr>
</tbody>
</table>
**Fall Semester** | **Spring Semester**
--- | ---
**21. Biopharmaceutics and Dosage Forms** | **22. Biopharmaceutics and Dosage Forms**
4 - 4 | 4 - 4
**33. Pharmacology** | **34. Pharmacology**
3 - 3 | 4 - 4
3 - 4 | 3 - 4
**27. Analytical Chemistry** | **37. Analytical**
3 - 7 | 3 - 3
13 10 15 | 17 8 17

**Fall Semester** | **Spring Semester**
--- | ---
**23. Medical Chemistry** | **24. Medical Chemistry**
3 - 3 | 3 - 3
**31. Professional and Clinical Practice** | **32. Professional and Clinical Practice**
3 - 4 | 3 - 4
**39. Practical Pharmacy I** | **41. Practical Pharmacy II**
- - 3 | - - 3
**Elective** | **Elective**
6 - 6 | 3 - 3
6 6 16 | 9 6 16

*D — Didactic hours L — Laboratory Hours C — Credit hours
Courses are to be completed in the designated sequence.
Minimum credits for B.S. in Pharmacy Degree — 160; sufficient elective courses must be taken to satisfy the minimum credit requirements.

**Curriculum Majors**
During the fourth year (earlier if possible) each pharmacy student is urged to select a curriculum major from one of the following major areas: Community Practice, Institutional Practice, Industrial Practice, Radiopharmacy, or Pre-Graduate Study.
The following courses are approved for the respective major areas:

1. **Community Practice**
   - 29. Emergency Treatment
   - 58. Community Practice I
   - 59. Community Practice II
   - All — Psychology
   - All — Sociology
   - 53. Clinical Pharmacy

2. **Institutional Practice**
   - 52. Hospital Pharmacy
   - 53. Clinical Pharmacy
   - 530. Principles of Hospital Management
   - 501. Manufacturing Pharmacy
   - 56. Clinical Chemistry
   - 502. Pharmaceutical Formulation and Development
   - 505. Methods of Pharmaceutical Control
   - 562. Analytic Methods (Statistics and Computer Technology)
   - 539. Biocumunics
   - 540. Advanced Biocumunics and Radio-Pharmaceuticals

3. **Industrial Practice**
   - 41 - Practical Pharmacy I, II

4. **Radiopharmacy**
   - 541, 542 — Radiological Health
   - 431 — Introduction to Biostatistics

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. A combined B.S./M.S. program is available to qualified students.

**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. This program is approved 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 3.0 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 residence halls.
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.

Curriculum

First Year

Fall Semester | Spring Semester
---|---
D | L | C* | D | L | C* | D | L | C* | D | L | C* |
101 English Composition | 3 | - | 3 | 102 English Composition | 3 | - | 3
105 Basic Math | 4 | - | 4 | 115 Calculus I | 4 | - | 4
111 General Biology | 3 | 4 | 4 | 112 General Biology | 3 | 4 | 4
121 General Chemistry | 3 | 4 | 4 | 122 General Chemistry | 3 | 6 | 5

Total | 13 | 8 | 15

Second Year

Fall Semester | Spring Semester
---|---
D | L | C* | D | L | C* |
201 General Physics | 4 | 2 | 4 | 202 General Physics | 4 | 2 | 4
205 Organic Chemistry | 3 | 4 | 4 | 206 Organic Chemistry | 3 | 4 | 4
Humanities Elective | 3 | - | 3 | 35 Medical Microbiology | 3 | 3 | 4
Social Science Elective | 3 | - | 3 | Humanities Elective | 3 | - | 3
Theology or Elective | 3 | - | 3 | 13 | 9 | 15

Total | 10 | 6 | 17

Third Year

Fall Semester | Spring Semester
---|---
D | L | C* | D | L | C* |
17 Anatomy and Physiology | 3 | - | 3 | 16 Biochemistry | 3 | 3 | 4
20 Anatomy and Physiology | 3 | - | 3 | 18 Anatomy and Physiology | 4 | - | 4
Laboratory | - | 3 | 1 | - | 3 | 4
27 Analytical Chemistry | 3 | 7 | 4 | Electives | 3 | - | 3
Elective | 9 | - | 9 | 13 | 6 | 15

Total | 15 | 10 | 17

Fourth Year

The fourth year of the program will begin in June and continue for twelve consecutive months. Courses and laboratory assignments will be held primarily at Mercy Hospital. The following syllabus will be covered with 30 credits awarded for completion of the courses.

Courses | Credits
---|---
61 Clinical Chemistry | 7
62 Urinalysis | 2
63 Hematology | 5
64 Blood Banking | 3
65 Bacteriology | 3
66 Parasitology | 2

Total | 30

* D - Didactic hours  L - Laboratory hours  C - Credit hours

BACHELOR OF SCIENCE IN RADIOLOGICAL HEALTH

Since 1972 the School of Pharmacy has offered a four-year 123-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

First Year

Fall Semester | Spring Semester
---|---
D | L | C* | D | L | C* |
101 English Composition | 3 | - | 3 | 102 English Composition | 3 | - | 3
105 Basic Mathematics | 4 | - | 4 | 115 Calculus I | 4 | - | 4
111 General Biology | 3 | 4 | 4 | 112 General Biology | 3 | 4 | 4
121 General Chemistry | 3 | 4 | 4 | 122 General Chemistry | 3 | 8 | 5

Total | 13 | 8 | 15

Second Year

Fall Semester | Spring Semester
---|---
D | L | C* | D | L | C* |
211 General Analytical Physics | 3 | 3 | 4 | 212 General Analytical Physics | 3 | 3 | 4
205 Organic Chemistry | 3 | 4 | 4 | 206 Organic Chemistry | 3 | 4 | 4
116 Calculus II | 4 | - | 4 | 215 Calculus III | 4 | - | 4
Theology or Elective | 3 | - | 3 | Humanities Elective | 3 | - | 3

Total | 13 | 7 | 15

Three credits in theology are required for all students

Third Year

Fall Semester | Spring Semester
---|---
D | L | C* | D | L | C* |
17 Anatomy and Physiology | 3 | - | 3 | 16 Biochemistry | 3 | 3 | 4
20 Anatomy and Physiology | 3 | - | 3 | 18 Anatomy and Physiology | 4 | - | 4
Laboratory | - | 3 | 1 | - | 3 | 4
27 Analytical Chemistry | 3 | 7 | 4 | Electives | 3 | - | 3
Elective | 9 | - | 9 | 13 | 6 | 15

Total | 15 | 3 | 16

* D - Didactic hours  L - Laboratory Hours  C - Credit Hours
**SCHOOL OF PHARMACY**

**ADMISSION**

Students who plan to enter any of the programs offered by the School of Pharmacy are encouraged to meet with the Dean of the school for a personal interview. Entrance requirements are listed under Admission 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.

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 should 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 all cases, transfer applicants must have been granted honorable dismissal from their previous institution and have the academic average currently required for admission to the programs in which they are interested.

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
<td><strong>Spring Semester</strong></td>
</tr>
<tr>
<td>D</td>
<td>L</td>
</tr>
<tr>
<td>306 Applied</td>
<td>411 Ecology</td>
</tr>
<tr>
<td>Electronics</td>
<td>431 Intro to Radiological</td>
</tr>
<tr>
<td>431 Intro to Radiological</td>
<td>Health Practice</td>
</tr>
<tr>
<td>473 Atoms, Physics</td>
<td>483 Nuclear Physics</td>
</tr>
<tr>
<td>540 Advanced</td>
<td>542 Radiological</td>
</tr>
<tr>
<td>Biometrics and Radiopharmaceuticals</td>
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<td>Radiopharmaceuticals</td>
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<td>Radiological Health</td>
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<td>306 Applied</td>
<td>411 Ecology</td>
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<td>431 Intro to Radiological</td>
<td>Health Practice</td>
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<td>473 Atoms, Physics</td>
<td>483 Nuclear Physics</td>
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<td>540 Advanced</td>
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<td>Radiological Health</td>
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* D — Didactic hours  
  L — Laboratory Hours  
  C — Credit Hours

**LABORATORY FEES**

Required laboratory courses scheduled by all schools of the university are subject to fees as published. Pharmacy laboratories require a fee of $40 each semester. This is a prorated charge derived from the total costs of all laboratory operations throughout the professional years. 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 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.

Transfer pharmacy students must complete a minimum of three academic years of residence in the School of Pharmacy.

In extenuating circumstances and with the permission of the School of Pharmacy Student Standing Committee, 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 his 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.
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, examinations, class lectures, 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 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, social 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 students and faculty. The annual membership fee includes one 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 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 students in pharmacy.

Class Organizations. 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. An award of $25 is presented to the graduate who has shown outstanding ability and interest in the field of pharmacognosy.

American Institute of the History of Pharmacy Award. A recognition certificate and gift membership is awarded annually by the American Institute of the History of Pharmacy for superior achievement in pharmacological and historical study or activity.

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 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. An award is presented annually by the Bristol Laboratories, Inc., New York City, to a Doctor of Pharmacy candidate for excellence in scholastic achievement.
Brasil 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.

Maurice H. Finkelpearl Award. An award of $50 is presented annually to a student who intends to practice Community Pharmacy.

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 pharmaceutics.

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.

Merk 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.

Rexall 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. It is presented at a meeting of the Student Chapter of the American Pharmaceutical Association.

Smith Kline & French Laboratories Award. A personalized plaque is presented annually by the Smith Kline & French Laboratories, Philadelphia, Pennsylvania, for superior achievement in Clinical Pharmacy.

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 is presented to the graduating student who has demonstrated through service, reporting and activity, an avid interest in organization work.

Syntex Preceptor of the Year Award. An appropriately designed plaque is awarded annually by the Syntex Laboratories, Inc., of Palo Alto, California, to the preceptor who, in the opinion of the Pharmacy Interns, best exemplifies professionalism, ethics, and clinical practice.

Upjohn Award. A suitably inscribed plaque is awarded annually by the Upjohn Company, Kalamazoo, Michigan, for outstanding public service.

Western Pennsylvania Society of Hospital Pharmacists Award. An award of $25 is presented to the graduating senior who demonstrates outstanding ability and interest in the area of Hospital Pharmacy.

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 210 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 of a $5.00 fee to the State, to candidates who have completed an approved four-year high school course. Full instructions for securing the certificate are provided through the School of Pharmacy office to students entering that year. Applicants who cannot satisfy the requirements by furnishing certified records from accredited high schools may make up deficiencies by passing the examinations given for this purpose by the Credentials Evaluation Division of the Department of Education of the Commonwealth of Pennsylvania. Further information regarding these
examinations, fees, dates, etc. may be obtained by writing to the Credentials Evaluation Division, Department of Education, Commonwealth of Pennsylvania, Box 911, Harrisburg, Pennsylvania 17120.

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.

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.

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

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RESEARCH FOUNDATION

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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 71 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 PHARMACEUTICS

Chairman MITCHELL L. BORKE, Ph.D.
Associate Chairman ALVIN M. GALINSKY, Ph.D.

1 PHARMACEUTICAL ORIENTATION 1 cr
Introduction to pharmacy. Discussion of various phases of pharmacy and their relationships 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 continuation of Physical Pharmacy. Lecture, three hours, Laboratory, four hours.

MATHEMATICS 3 cr
16 BIOCHEMISTRY  4 cr
Designed to emphasize primarily the manner in which energy is derived from food. Metabolism of carbohydrates, lipids, and proteins are discussed and interrelated. The function of enzymes, vitamins, and hormones is discussed in relation to their role in metabolism. The relationship of biochemistry to disease states is stressed. Prerequisite: Organic Chemistry Lecture, three hours, Laboratory, three hours.

19 ELECTRONICS FOR HEALTH SCIENCES  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 circuits. 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 physio-chemical, biological, and pharmaceutical factors which affect absorption, distribution, metabolism, and excretion of drugs in man. Emphasis is placed on the utilization of biopharmaceutical and pharmacokinetic knowledge in problems of bioavailability and bioequivalence of drug products and in the determination of appropriate drug dosage regimens. Prerequisite: Physical Pharmacology 12, Lecture, four hours.

22 BIOPHARMACEUTICS AND DOSAGE FORMS  4 cr
A continuation of Biopharmaceutics and Dosage Forms 21 with emphasis on drug delivery systems. Prerequisite: Biopharmaceutics and Dosage Forms 21, Laboratory, seven hours, Recitation, one hour.

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 Pharmacology 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 equilibrium principles, with laboratory experience in the principal methods of gravimetric and volumetric analysis. Prerequisites: Physical Pharmacology 11, 12 or Physical Chemistry 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 27, Lecture, three hours.

499 INDEPENDENT STUDY AND RESEARCH  1-2 cr /sem
Opportunity for students to carry out independent study or research under the supervision of a faculty member. Requires detailed study of a subject area related to the professional goal of the student. The development of a skill is mandatory and the student is evaluated on a competency basis. Maximum of four credits. Registration by permission of instructor.

3 BASIC PHARMACOLOGY  3 cr
A course dealing with the major classes of therapeutic agents, designed for students who have 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.

DEPARTMENT OF PHARMACOGNOSY

Chairman: NORBERT A. PILEWSKI, Ph.D.

26 NATURAL PRODUCTS  4 cr
Deals with the important medicinal agents which are derived from natural sources. Emphasis is placed on the medically important antibiotics, alkaloids, glycosides, volatile oils, fixed oils, vitamins, carbohydrates, and enzymes, including 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
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, rickettsial, protozoal, viral, and protozoal diseases along with wound infections, their causes, symptoms, and treatments. 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. Health statistics, disaster preparedness, and environmental pollution are also discussed. 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 toxico logical 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 SOCIAL DISEASES  1 cr
Causes, course of diseases, 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 Pharmacology 33.
DEPARTMENT OF PHARMACEUTICAL ADMINISTRATION

Chairman ANTHONY J AMADIO, M BA

12 PHARMACEUTICAL LAW 3 cr
A course designed to acquaint the student with the philosophy of law and its relationship to pharmacy. Federal, state, and local laws and regulations pertinent to the handling and sale of drugs, cosmetics, narcotics, poisons, and alcohol are discussed. A review of antitrust laws, fair-trade regulations, and other court decisions of importance to the pharmacist are also discussed. Lecture, three hours.

39 PRACTICAL PHARMACY I 3 cr
Practical Pharmacy Program required of all final year pharmacy students and involving placement in operating pharmacies with a pharmacist preceptor. Off-campus placement may be necessary. Note: Calendar change for fifth year patients may be required.

41 PRACTICAL PHARMACY II 3 cr
An extension of Practical Pharmacy 39 required for all final year students.

DEPARTMENT OF CLINICAL PHARMACY

Chairman THOMAS MATTEI, Pharm D

31 PROFESSIONAL AND CLINICAL PRACTICE 4 cr
A course designed to prepare the student for professional pharmacy practice. Didactic, laboratory and clinical experiences are integrated to develop the student's ability in providing pharmaceutical services to patients and to other members of the health team. Emphasis is placed on the use of modern medications 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. Pre-requisite: Biopharmaceutics and Dosage Forms.

32 PROFESSIONAL AND CLINICAL PRACTICE 4 cr
A continuation of Professional and Clinical Practice 31. Pre-requisites: Professional and Clinical Practice 31. Lecture, three hours, Laboratory, six hours.

DEPARTMENT OF MEDICAL TECHNOLOGY

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 nosensitization.

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.

69 MYCOLOGY 1 cr
The study of the pathogenic fungi, the diseases they cause, and the technical methods of identification.

70 VIROLOGY 1 cr
The study of the viruses causing disease and the technical methods of identification.

71 NUCLEAR PATHOLOGY 2 cr
The study of the use of radionuclides in the diagnosis and treatment of disease.
DEPARTMENT OF RADIOLOGICAL HEALTH

Chairman MITCHELL L BORKE, Ph D

51 RADIOLOGICAL HEALTH

PRACTICE 4 cr

Designed to provide the student with practical experience in at least four broad areas of radiological health: industrial, hospital, reactor, and university. This experience will be acquired through observation and participation in daily practical problems of radiation protection within local organizations representative of the four broad areas of radiological health. Emphasis will be placed on personnel monitoring and dosimetry, radiochemical assaying of biological and environmental materials, field surveying of plant operations involving large quantities of fission products and other radioactive materials, environmental monitoring practices, decontamination procedures, and radiation protection record keeping. Prerequisites: Bionucleonics 539, Radiological Health 541, Co-requisite: Radiological Health 542, Laboratory, 16 hours.

306 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.

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 GM 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 AND RADIO-PHARMACEUTICALS 3 cr

A course devoted to the practical applications of radioactive isotopes in chemistry, biology, pharmacy, and medicine. The scope of the course includes neutron activation analysis, gamma spectrometry, tracer methods, and radiopharmaceuticals. 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.

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 PARENTEAL PHARMACEUTICALS 1 cr

Sepsis and asepsis, sterilization, bacterial filtration, pyrogen and sterility testing. Class size limited to 10 students. Laboratory, 16 hours. Prerequisite: Physical Pharmacy 12.

Any course taught in the University may be chosen as an elective course by students who have met the prerequisites.

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. Prerequisites: Anatomy and Physiology 17 and 18. Lecture, three hours. Demonstrations included during lecture hours.

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.

RECOMMENDED PROFESSIONAL ELECTIVES

Any course taught in the University may be chosen as an elective course by students who have met the prerequisites.

501 MANUFACTURING PHARMACY 510 ADVANCED BIOPHARMACEUTICS

502 PHARMACEUTICAL FORMULATION 523, 524 MEDICINAL CHEMISTRY

AND DEVELOPMENT 525 ELECTRONICS FOR SCIENTIFIC INSTRUMENTATION

503 METHODS OF PHARMACEUTICAL CONTROL
539 BIONUCLEONICS
540 ADVANCED BIONUCLEONICS AND RADIO PHARMACEUTICALS
541, 542 RADIOLOGICAL HEALTH
543 BIOSTATISTICS AND EPIDEMIOLOGY

Descriptions of these courses may be found in the Graduate School of Liberal Arts and Sciences Catalog

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
231, 232 DEVELOPMENT OF THE UNITED STATES
307, 308 HISTORY OF SCIENCE
201 SPEECH AND PHONETICS
202 SPEAKING AND LISTENING
101 ELEMENTS OF ECONOMICS
203 GENETICS

560 BIOSYNTHESIS OF NATURAL PRODUCTS
561 GENERAL TOXICOLOGY
563 PATHOLOGY
567, 568 CLINICAL PHARMA COLOGY
569 TOXINS THEIR CHEMISTRY, BIOLOGY, AND TOXICOLOGY

541, 542 RADIOLOGICAL HEALTH
543 BIOSTATISTICS AND EPIDEMIOLOGY

Descriptions of these courses may be found in the Graduate School of Liberal Arts and Sciences Catalog.
Reserve Officer Training Corps

DEPARTMENT OF MILITARY SCIENCE

Department Head COLONEL JAMES R BAMBERY, USA

PROGRAMS

The Army Reserve Officer Training Corps (ROTC) program is open to male and female students on a voluntary basis. Two-year and four-year programs are offered, both are taken in conjunction with the required course of study in all the University's undergraduate degree programs. Interested incoming students are encouraged to enroll immediately so that the ROTC program and their academic major are phased properly for graduation. For entry into the two-year program, the student must have two academic years remaining, either at the undergraduate or graduate level, or a combination of the two. After successful completion of the four-year or two-year program, a student will be commissioned a second lieutenant in the United States Army. The Professor of Military Science invites letters or telephone calls of inquiry. Questions will be answered promptly.

FOUR-YEAR

All four-year program students are encouraged to take two of the following four courses during their freshman and sophomore years:

**Fall Semester**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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<tr>
<td>Academic Major</td>
<td>12</td>
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<tr>
<td>Military Subject or approved elective</td>
<td>3</td>
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<tr>
<td>MS 001 Professional Laboratory</td>
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<tr>
<td>MS 002 Professional Laboratory</td>
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**Spring Semester**

<table>
<thead>
<tr>
<th>Courses</th>
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<tbody>
<tr>
<td>Academic Major</td>
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<tr>
<td>MS 004 Professional Laboratory</td>
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**Sophomore Year**

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<tr>
<td>Military Subject or approved elective</td>
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</tr>
<tr>
<td>MS 004 Professional Laboratory</td>
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<tr>
<td>MS 005 Professional Laboratory</td>
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**Junior Year**

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<tr>
<td>MS 006 Professional Laboratory</td>
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<tr>
<td>MS 007 Professional Laboratory</td>
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</table>

**Summer**

Attendance at six-week ROTC Advanced Camp

**Senior Year**

<table>
<thead>
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<th>Courses</th>
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</thead>
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<tr>
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<td>15</td>
</tr>
<tr>
<td>MS 008 Professional Laboratory</td>
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</tr>
</tbody>
</table>

In addition, freshman and sophomore students are required to take Military Science Professional Laboratories 001, 002, 003, 004 (one a semester).

Advanced Course students (juniors and seniors) are required to take

- **MS 401 Professional Seminar** 3 cr
- **MS 005, 006, 007, 008 Professional Laboratories** (one a semester) 0 cr

**SAMPLE PROGRAM**

- **Fall Semester**
  - Academic Major: 12 cr
  - MS 002 Professional Laboratory: 0 cr
  - MS 001 Professional Laboratory: 0 cr
- **Spring Semester**
  - Academic Major: 15 cr
  - MS 004 Professional Laboratory: 0 cr

Advanced Course students (juniors and seniors) are encouraged to take

- **MS 301 The Dynamics of Group Presentations** 3 cr
TWO-YEAR

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 requirements of the Advanced Course.

MILITARY SCIENCE MINOR

The introductory course for the minor is History 348, Modern American Military History (no credit toward the minor). The required, three-credit hour courses are Sociology 195-The Military and Society, Political Science 215-National Strategy, and Defense Management. To complete the minor, one elective must be selected from among the following:

College of Liberal Arts and Sciences

History
- 231 DEVELOPMENT OF THE U.S. TO 1877
- 232 DEVELOPMENT OF THE U.S. SINCE 1877
- 356 DIPLOMATIC HISTORY OF THE UNITED STATES
- 358 CIVIL WAR AND RECONSTRUCTION

Political Science
- 303 INTERNATIONAL RELATIONS
- 315 POLITICS OF THE EMERGING NATIONS

Mathematics

Psychology
- 226 DEVELOPMENTAL PSYCHOLOGY II - ADOLESCENCE AND MATURITY
- 340 SOCIAL PSYCHOLOGY

Speech
- 300 ARGUMENTATION AND DEBATE
- 304 PERSUASION

School of Business and Administration
- 201 PRINCIPLES OF MANAGEMENT
- 309 ADMINISTRATIVE ORGANIZATION

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.

ARMY ROTC SCHOLARSHIPS

Army ROTC offers a number of scholarships for cadets enrolled in the four-year and two-year programs. These scholarships include tuition, fees, and textbooks. For details see ROTC Scholarships in the Financial Aid section, page 193.

COURSE DESCRIPTIONS

BASIC COURSE

HIS 348 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 conflict, evaluates in general terms the conduct of military operations, and assesses the impact 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, analyses 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.

MS 302 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, and 2) Representatives from private enterprise. This unique interaction provides added dimension to organizational theory, motivation, communication, and management practices.

ADVANCED COURSE

MS 301 DYNAMICS OF GROUP PRESENTATIONS 3 cr
Designed to give students opportunities to improve their techniques of oral instruction through formalized teaching and practical exercises. Topics for student presentations will relate to the theories of leadership as they apply to the learning process.

MS 401 PROFESSIONAL SEMINAR 3 cr
Designed to give the student facts about career development, the finer points of military organization, operations and tradition, and financial planning for himself/herself and a family. In addition, the student will have opportunity to broaden his/her experience in Command and Staff procedures.

PROFESSIONAL LABORATORIES 0 cr

MS 001, 002 UNITED STATES ARMY ORIENTATION

MS 003, 004 PRESENTATION OF MILITARY SKILLS

MS 005, 006 ADVANCE CAMP PREPARATION

MS 007, 008 COMMAND AND STAFF DEVELOPMENT
Part III:
Student Services, Programs and Organizations
Student Services,
Programs and Organizations

DEVELOPMENTAL SERVICES

CAMPU MINISTRY

In conjunction with the academic pursuits of the University, the Pastoral Office of Campus Ministry through its staff offers many opportunities for the student to be active in his religious development and continued spiritual growth by seeking ways of working out his relationship and responsibility to God and neighbor.

A varied schedule of daily and weekend Liturgies is provided. Priests are available for the Sacrament of Penance at regularly scheduled times and individually at any other pre-arranged time. The University Chapel remains open each day for prayer, reflection, and meditation. Evenings of recollection, weekend retreats, informal discussions and conversations, counseling, guest lecturers, and other special programs are some of the current activities of Campus Ministry. Open concerts of sacred music and recitals are given periodically during the year at the chapel.

All Campus Ministry activities are posted on the bulletin boards outside the chapel and in the Main Lobbies of each Residence Hall.

Students should feel free to stop in the Campus Ministry office at any time in the Administration Building (1st floor) or in the main lobby of the Towers.

CENTER FOR ACADEMIC AND CAREER DEVELOPMENT (CACD)

The Center for Academic and Career Development (CACD) is a coordinated guidance, counseling, referral, and consultative program within Duquesne University. The Center provides for both direct counseling and guidance services to students, assisting them through the educational process and the career development process. Through the Center a student can seek any or all of the following services: academic planning, tutoring, academic skill development, vocational guidance, career planning, career information, job placement assistance, academic skill assessment, career assessment and personality assessment. Also, students can receive indirect assistance through referral to appropriate University and community programs. The Center can further assist all University departments and divisions as a source for their student referrals also as a consultative service for occupational, community and University surveys of academic and career needs.

CAREER PLANNING AND PLACEMENT

Students and graduates of Duquesne University have available to them the full services and programs of Career Planning and Placement. The person whose vocational goals have not been formulated or are changing may seek career planning through personal...
contact with the professional staff and by using the career resources and collection. Early use of this service is encouraged. The individual with well-defined career goals may seek employment advice including resume preparation, job application and interview techniques, job referrals, and credentials. The graduating student may also be interested in campus interviews with visiting employers.

Any student group or academic department may contact Career Planning and Placement for aid in developing a career program and/or in securing a career speaker.

The part-time and summer employment program is important to students in financing their education and to those seeking practical experience to augment college training. Placement in campus jobs is largely, though not totally, dependent upon financial need. Part-time and summer jobs in the community are also available, with new listings arriving daily.

Students and alumni are invited to call (434-6644), or visit (305 Administration Building), Career Planning and Placement Hours are 8:30 A.M. to 6:00 P.M., Monday and Thursday, and 8:30 A.M. to 5:00 P.M., Tuesday, Wednesday and Friday.

**LEARNING SKILL PROGRAM**

The Learning Skills Program, located on the third floor of the Administration Building, is an ancillary academic service, whose primary charge is the intellectual development of students. Services are provided in coordination with academic offices of the University.

As part of its academic assistance efforts, the Learning Skills Program delivers diagnostic and prescriptive services. Individualized developmental programs in reading, writing, mathematics, and science are offered students who seek to upgrade their academic skills and advance their intellectual growth.

A free tutorial service provides students with competent tutors in numerous subject areas. In addition, a comprehensive study skills program is available to help students prepare study skills as well as to assist students experiencing academic difficulties.

The program is free to all Duquesne University students. Appointments can be made by phoning 434-6661. Hours are 8:30 A.M. to 5:30 P.M., Monday through Friday.

**TESTING BUREAU**

The Testing Bureau provides counseling to students who have questions for concerns relating to some aspects of their personal and/or academic life. As the name implies, tests and inventories are incorporated whenever appropriate to aid in compiling as much information about students' abilities, interests, and personality as possible, insofar as these relate to their concerns. The test results are used in conjunction with extensive interviews in order to facilitate the resolution of problems by looking at alternatives and trying to formulate viable plans.

The Testing Bureau has assisted students to make career choices, understand their abilities, interests and personality factors, look at alternative careers, understand personal concerns, acquire referral information to University and neighborhood organizations, and acquire information concerning applications for national and other standardized tests (for example GRE, SAT, MAT, LSAT, CLEP, etc.).

The Testing Bureau is open, free of charge, to all Duquesne students, and is located in Room 308 of the Administration Building. Appointments may be made by telephone (434-6204). Hours are 8:30 A.M. - 4:30 P.M., Monday through Friday.

**INTERNATIONAL STUDENT ADVISEMENT**

The responsibility of the International Student Advisor is to be of service to all international students in the areas of adjustment, housing, and activities. Other services include the preparation of forms for extension of stay, assistance for obtaining summer employment where permissible by law, and, upon graduation, the preparation of applications for practical training. The International Student Advisor's office is part of the Office of the Dean of Students, which is located in the Duquesne Union.

**PSYCHOLOGICAL CENTER FOR TRAINING AND RESEARCH**

The Psychological Center for Training and Research 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.

**RESIDENCE LIFE**

Residence Life is dedicated to the task of creating an environment in which a student can grow and develop as a total person. Its program is based on two assumptions: 1) the student's residence hall living experience can be an important part of the total university education, and 2) the residence hall staff with a defined educational mission can greatly enhance the opportunities for students to profit from their residence hall experience. Therefore, it is the purpose of Residence Life to facilitate the personal and academic growth of student living by striving to make the whole of residence life an educational experience. To this end, the professional and resident assistant staff will provide the wherewithal to facilitate such development.

Recognizing that each individual has unique talents and potentials, every effort is made to create a residence hall environment that is acceptable to each individual and open to his or her effort on this environment. It is the student who, actively becoming part of environment, enriches his or her own development. It is this aim that university living strives to accomplish.

In the belief that residence living adds to the educational opportunities of the individual student, the University reserves the right to require all under-
graduate students who do not commute from their permanent home of residence to reside in University residence halls. Availability of space currently limits implementation of this requirement to freshmen and sophomore students. 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 are available for resident students.

HEALTH SERVICES
The Health Services Office is located on the Second Floor of the Duquesne Towers Residence Hall. Registered nurses are available on a regular schedule throughout the year. Clinic hours are conducted daily during the academic year at specific hours, Monday through Friday, by the University physicians. Primary health care is provided for resident students as a part of their room and board contract. Commuter students may receive the same service by payment of a nominal fee each semester. Further information may be obtained at the Health Services office.

Emergency service is also available to all commuter students, faculty members, and staff members. A completely equipped ambulance is maintained by the University for emergency use. Should an emergency occur when the Health Services office is closed, the Department of Public Safety should be contacted immediately.

Health Service costs are included in room fees for resident students and by payment of the previously mentioned special fee for non-residents, however, all additional treatment by non-University physicians, clinics, or hospitals must be paid for by the student.

HEALTH INSURANCE
It is recommended that each student carry some form of health insurance. The University provides a Student Health Care Program which has been designed to meet the needs of the student, and is priced lower than individual health insurance policies. Complete information about this insurance plan may be obtained from the University Insurance Officer, Second Floor of the Administration Building. Note: The University is not responsible for medical expenses resulting from participation in intramural sports.

ACTIVITIES AND FACILITIES
ATHLETICS
Duquesne University is a member of the National Collegiate Athletic Association, the Eastern Collegiate Athletic Conference, the Association for Inter-Collegiate Athletics for Women, and the Eastern Association for Inter-Collegiate Athletics for Women. The University follows the rules of these organizations in determining a student’s eligibility for a varsity team. The Athletic Department supports the following varsity teams: baseball, basketball, cross-country, golf, rifle, tennis, women’s volleyball, and women’s volleyball. The golf, rifle, tennis, and bowling teams are open to both men and women athletes.

Prospective candidates for any of the teams may obtain applications from the Athletic Office in the Main Gymnasium. Those interested in applying for either of the women’s teams may contact the Assistant to the Director of Athletics. Duquesne’s women’s varsity basketball and volleyball teams compete with women’s teams from other colleges and universities in the tri-state area. The bowling team competes in the Club League of Western Pennsylvania. Candidates for all teams may apply for athletic grants-in-aid.

Football is an inter-collegiate sport funded under the Athletic Department budget, operating within Club Football Association rules. Those interested in participating in football should contact the Director of Athletics. No athletic grants-in-aid are offered for this sport.

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 March 1967. Through cooperative governance and management of its human and physical resources, the Union strives to stimulate individual self-development through interaction with diverse people and ideas. With a goal of community, all aspects of the Union—facilities, programs, and committees—are open to all segments of the campus—students, faculty, administrators, and staff.

PROGRAM BOARD
Student committees of the Union Program Board cooperatively organize a variety of programs each year. Funded by a portion of the University Fee, the Program Board coordinates and balances general campus programming under the supervision of the Union Governing Council.

The Union constitution permits considerable flexibility in its program committee structure; committees may be added or deleted according to student interest. This allows for new ideas to grow and become an active part of University activities.

Membership on Union Program Board committees is open to all students, challenging them to meet and share their talents in ways which promote individual growth and group effectiveness.

TAMBURITZANS
The Duquesne University Tamburitzans were founded in 1937 at the University and were the first university-based performing folk ensemble in the United States. The group takes its name from the Tamburitzia family of stringed instruments, indigenous to the folk cultures of Southeastern Europe.
The group exists for the dual purpose of preserving and perpetuating the Eastern European cultural heritage in the United States and offering scholarship opportunities to deserving students.

**THEATRE**
The Red Masquers serves to provide an extracurricular 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. Any Duquesne student is eligible for membership.

**WDUQ RADIO AND TELEVISION**
The University's radio station (WDUQ-90.5 FM) and television (closed circuit) provide academic support to the individual schools and departments through seminars, workshops, laboratory experience, and extracurricular opportunities in communication skills for individuals and groups. Most positions on the staff are filled by students. The University radio station operates on a 25,000 Watt frequency over a radius of seventy miles.

**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 Systems 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.

**STUDENT GOVERNMENT**

**STUDENT GOVERNMENT ASSOCIATION**
The Student Government Association is a student-created structure designed 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. A major function of the SGA is to serve as student representatives on important University committees, including the Administrative Council (advisory to the President) and the Council of Academic Deans (the highest academic board).

**RESIDENCE COUNCIL**
The Residence Council coordinates activities, enforces regulations within the residence halls, and promotes interest in campus affairs. It is the aim of the Residence Council to serve as a link between the resident students and the administration. Aside from the council activities, representatives of the Residence Council serve on the Council on Student Services and the Food Service Committee to provide student input for the formulation and review of University policies affecting residence life.

**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 the 10 member fraternities. The IFC establishes all rules governing inter-fraternity sports and regulates pledging.

**PAN-HELLENIC COUNCIL**
The Pan-Hellenic Council was established for the purpose of strengthening women's fraternities as organizations and for promoting cooperation among the groups through scholastic, athletic, and social activities. Membership in the Pan-Hellenic Council is composed of the presidents and elected representatives of each of the six women's social fraternities. Pan-Hellenic Council establishes all rules concerning the rushing and pledging of new fraternity members.

**STUDENT 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.

**HONOR SOCIETIES**
These societies have as their primary purpose recognition of scholarship achievement and academic excellence and are members of the Association of College Honor Societies.

**PROFESSIONAL AND DEPARTMENTAL ORGANIZATIONS**
These professional organizations exist to provide the fertile ground for the
growth of informal exchange of ideas pertinent to the student's academic pursuits. With this purpose in mind, these organizations sponsor numerous programs including debates, symposiums, and lectures.

SERVICE ORGANIZATIONS
The purpose of these nationally-affiliated organizations is to provide a high standard of service to the campus and local communities while, at the same time, developing the leadership qualities of and cooperation among each member of the organization. With this purpose in mind, service organizations sponsor a wide variety of professional, service, charitable, and social programs.

SOCIAL ORGANIZATIONS
Social organizations are composed of college men and women who have joined together to enhance their identities by sponsoring and promoting social, athletic, cultural, and academic events. Many of these organizations belong to Inter-Fraternity Council or Pan-Hellenic Council.

PUBLICATIONS
The Duquesne Duke, the University campus newspaper, is written and edited by the students for the students. It appears every Thursday during the academic year except during examination periods and holidays, and provides an array of campus news, student opinions, editorials and advertisements. The paper is geared to all members of the University, administrators, faculty members, employees, and most of all students. Membership in the Duquesne Duke is open to all students.

The Duquesne Magazine is a literary publication, published each semester, which affords students the opportunity to submit writing, artwork, and photographs.

L’Esprit du Duc, the yearbook, highlights the events of the previous year to remind all graduates of their alma mater. It is mailed to all seniors after their graduation.

STUDENT HANDBOOK
A Student Handbook that contains detailed information about practices and procedures of University policies that concern students is available to all new enrollees. It may be obtained from the Information Office in the Duquesne Union or from the enrollee’s academic advisor.
Admission

OFFICE OF ADMISSIONS
The Office of Admissions is located on the first floor of the Administration Building.

Telephone (412) 434-6220, 434-6221, 434-6222
Office hours Monday through Friday from 8 30  A M to 4 30  P M and on Saturday from 9 00  A M to 12 00  Noon

POLICY
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, sex, racial characteristics, and ethnic origin is not taken into consideration by the Committee on Admissions.

ADMISSION 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 their state 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 Com-
mittee 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—NEW FIRST-YEAR STUDENTS

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 students.
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 the Financial Aid Office before 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. Two separate interviews are required. Further details may be obtained by telephoning or writing to the Admissions Office.

APPLICATION—OTHER CATEGORIES

It is the responsibility of persons who apply for evening study, or as foreign students, post-graduates, readmission students, transfers, temporary transfers, and veterans, to arrange to have all supporting credentials on file with the Office of Admissions and the Financial Aid Office before the deadline dates.

INTERNATIONAL 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 photocopies, 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.
4. **Health Certificate**: Students for undergraduate admission must present evidence of good health in the form of a health certificate signed by a physician.

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-GRADUATES

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.

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

TRANSFERS

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 Advisement Office of his school for placement and curriculum planning following a reasonable period for evaluation of transcript.

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 regionally 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 TRANSFERS

No Temporary Transfer Student will be granted admission without formal application and an official transcript.

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.

SUMMER SESSION

DUQUESNE STUDENTS

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.

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

STUDENTS FROM OTHER INSTITUTIONS

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 Session. A tear-out admissions application and registration form for summer study is provided in the announcement of summer offerings, which may be obtained from the Office of Admissions at mid-March.

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, modern foreign languages (French, German, Spanish), Latin, mathematics A, mathematics B, physics A, B, C, 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 Bureau 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. Information about equivalent University courses for which qualifying students may receive credit may be obtained from the University's Director of Testing Bureau or the Assistant Dean for Administration, College of Liberal Arts and Sciences.

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
   - College composition, general chemistry, general psychology, introductory calculus, introductory sociology, microbi-
A student who has accumulated 30 or more credits is not eligible to take the General Examinations for credit. A student who has completed 60 credits in a degree program is not eligible for any CLEP credit but may utilize the "challenge" procedure under the Credit by Examination policy described on page 207. The University is continuing to evaluate CLEP subject scores and performance at Duquesne. Credit will be given on a minimum score determined yearly by the College of Liberal Arts and Sciences.

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. Information about equivalent University courses for which qualifying students may receive credit may be obtained from the University's Director of Testing Bureau or the Assistant Dean for Administration, College of Liberal Arts and Sciences.

**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. The maximum number of credits that may be taken is 15. 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.

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**Tuition and Fees**

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.

- Application Fee (non-refundable) $20
- Matriculation Deposit (non-refundable) $100
- Residence Hall Pre-Payment (non-refundable) $100
- Residence Hall Damage Deposit $50

**SEMESTER TUITION AND FEE CHARGES**

Auditors pay the same as those taking credit. The University reserves the right to change the tuition and fee charges herein at any time.

- Undergraduate Tuition for each semester hour credit $93
- Graduate Tuition for each semester hour credit $98
- *University Fee 12 or more credits $150
- 9 to 11 credits $106
- 5 to 8 credits $75
- 1 to 4 credits $40

- *Undergraduate Music Student Fee when carrying 12 or more credits $100
- *Undergraduate Business and Administration Student Fee 12 or more credits $5
- less than 12 credits $3

- *Undergraduate Pharmacy Student Activities Fee $25
  (Third, Fourth, and Fifth Year Students)
- Late Registration $10
- Removal of I Grade Fee $5
- Change of Schedule Fee for processing each form $5
- Credit by Examination for each course credit hour $10

**LABORATORY FEES**

All amounts are for one semester, where applicable, the yearly charge is double. In addition to the laboratory fee, there is a breakage charge of $5.00 a semester; this is proportionately refundable, depending upon the losses incurred.

- Biology (each laboratory) $25
- Chemistry (each laboratory) $25
- Earth Science 103, 104 $15
- English 380, 381, 382, 383 $5
- Journalism 267, 268, 367, 369, 405, 409 $10

*Charged on each semester registration.
Journalism 370, 378, 413 $15
Pharmacy (each laboratory) $40
Physics (each laboratory) $15
Psychology 356 $7
ROTC Professional Laboratories $5
Speech 101, 203 $5

SUMMER AND SPECIAL SESSION TUITION AND FEE CHARGES
Undergraduate Tuition for each semester hour credit $93
Graduate Tuition for each semester hour credit $98
University Fee 1 to 4 credits $40
5 to 8 credits $75
9 to 11 credits $106
12 or more credits $150

GRADUATION FEES
Bachelor Degree $30
Master Degree $40
Doctor of Pharmacy Degree $40
Juris Doctor Degree $40
Doctor of Philosophy Degree $55
Thesis Binding Fee—Doctoral Dissertation $40
Thesis Binding Fee Master Thesis $25

WITHDRAWAL AND TERMINATION OF ATTENDANCE
Upon officially withdrawing from the University, a student receives remission of part of the tuition charged for the semester or session in accordance with the Tuition Remission Schedule. The amount of the remission is added to payments, and a cash refund is made where a credit balance is created on the student’s total account.

The Effective Date of Withdrawal for determining the percent of remission is that on which the appropriate Academic Dean was notified by letter of the student’s decision to terminate attendance and requested official withdrawal. It is also the recorded date of the student’s separation from the University and regarded as the last day of attendance. A student is considered enrolled and “in attendance” until he or she acts to terminate attendance in conformity with this policy even though absences from classes were observed and recorded before the Effective Date of Withdrawal.

Any remission of tuition beyond the limits of the prescribed withdrawal schedule is subject to approval of the University Vice President and Treasurer. However, when a student’s attendance is involuntarily terminated because of personal disability arising from injury or illness, the appropriate Academic Dean may establish the last day of attendance as the Effective Date of Withdrawal.

TUITION REMISSION SCHEDULE
This schedule applies to tuition only; it does not apply to other charges, such as the University Fee, course fee, and laboratory fees, nor to the reduction of credits resulting from course withdrawals made after the Change of Schedule period.

Within the Semester Percent of Remission
First Week 80
Second Week 80
Third Week 40
Fourth Week 20
After Fourth Week None

Within the Summer Session
First Week 60
Second Week 20
After Second Week None

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 application 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. This pre-payment is non-refundable.

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.
TUITION AND FEES

TUITION AND FEES

BANK CREDIT CARDS
BankAmericard 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 percent 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.

Regular Session—Room and Board (20 meals a week)
Single for each semester $957.50
Double for each semester $752.50

Summer Sessions—Room and Board*
Eight Weeks
Single $510.00
Double $402.00
Six Weeks
Single $383.00
Double $301.00
Workshops (a week)
Single $64.00
Double $50.00

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

*Those desiring residency for the Summer Session should make reservations with the Assistant Dean of Students and 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.
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. 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

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 may vary slightly 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 that 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 that 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 help earn a portion of the educational costs.

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 for future service such as an officer in the Armed Forces. It should be noted that many sources of gift aid expect the student to accept some form of self-help assistance.

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. 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

ONE  FINANCIAL AID OFFICE

APPLICATION—UNIVERSITY AID

1. Applicants must be currently enrolled in the University or be in the process of applying for admission. Incoming students should not wait for official acceptance to the University before applying for financial assistance.

2. Obtain the formal application for financial assistance (Freshmen and transfer students may obtain the form through Admissions Office publications or through the Financial Aid Office). Currently enrolled students may obtain the form only through the Financial Aid Office. Complete this application and submit it to the Financial Aid Office, Duquesne University, Pittsburgh, Pennsylvania 15219 PRIOR to these deadline dates. For the Fall Semester or the academic year, no later than May 1, for the Spring Semester, no later than December 1. Late applicants will be considered on the basis of available funds.

3. Obtain from the high school guidance office or the Financial Aid Office a College Scholarship Service-Financial 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. A reply to this application, if filed by deadline dates, should be anticipated as follows: Freshmen and new transfers 60 days after CSS 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.

AID PROGRAMS

The following programs for which the foregoing application procedures apply, are administered directly by the Financial Aid Office.

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.

Nurses Training Act Loans: Nurses Training Act Loans are available to both full-time and half-time nursing undergraduate students who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the Federal government. 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.

Health Profession Student Loans: Health Profession Student Loans are available to full-time undergraduate students in the Bachelor of Science in Pharmacy program who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the Federal government. Loan repayment does not begin until one year after the student ceases to pursue a full-time course of study in pharmacy.

Supplemental Educational Opportunity Grants: Federal grant assistance is available to full or half-time undergraduate 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 Federal government.

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 Federal government.

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.

Student Employment: Two programs of employment are available to financial aid applicants who demonstrate need. The first is the College Work-Study Program and the second is the Federal Work-Study Program.
Program which is financed principally by Federal appropriations and awarded as aid in accordance with guidelines published by the U.S. Office of Education. The second program is referred to as the General Program which is funded by the University. 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. Students working under either program may not retain outside jobs during academic periods.

TWO BASIC EDUCATIONAL OPPORTUNITY GRANTS
Direct grant assistance through the Federal government is available to undergraduates based on an eligibility determination reviewed and adjusted each year by Congress. Grants range from a minimum of approximately $200 to a maximum of $1800 to students determined to be eligible. Applications may be obtained from high school guidance offices, college aid offices, or branches of the United States Post Office. All undergraduate students are advised to apply for this form of aid. Students receiving aid through the University are required to apply for a Basic Grant.

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 $100 to $1200 a year are available to full-time undergraduate students, based on considerations of financial need. Applications may be obtained from high school guidance offices or from the Pennsylvania Higher Education Assistance Agency (PHEAA) in Harrisburg. Deadline is normally May 1.

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. These loans are available to any student who is enrolled in an institution of higher learning on at least a half-time basis. They are provided by commercial lending institutions in every state. To apply, the student should inquire at a local lending institution where the student or parents have an account. The maximum loan is $2,500. The interest rate of seven percent a year will be automatically subsidized if the family’s adjusted income is less than $25,000. Additional information about subsidy may be obtained from the lender. Repayment of these loans begins nine months after graduation or withdrawal from school. A 90-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 who apply for or receive aid through the Financial Aid Office should apply for a Guaranty Loan only after consulting with an Aid Officer.

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 Guide to Financial Aid for Students and Parents, published by Simon & Schuster, 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 Bishop Coleman F. and Howard J. Carroll, the purpose of this scholarship is to provide some deserving student, who has already demonstrated a talent in writing, with sufficient financial aid (the exact sum to be determined by the committee) so that 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 of their junior year.

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

*Edward T. Leech Scholarship* This annual scholarship was established in 1971 by the Scripps Howard Foundation for journalism junior/senior students who demonstrate outstanding academic promise, concurrent financial need, and are preparing for a journalism career in the newspaper or broadcasting fields. It is administered by the faculty of the Department of Journalism.

**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 administration.

**SCHOOL OF EDUCATION**

*Hetern 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 who is in need of financial aid. The student must also have sound academic credentials and a commitment to a career in Special Education.

*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 awardee must have 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 of the University 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 for 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**

*Professional Nurse Traineeship Program* The United States Public Health Service provides a limited number of traineeships for qualified 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.

*Other Programs* Two additional programs, Nurses Training Act Loans and Nursing Scholarships are described under Sources of Aid—Financial Aid Office, page 193.

**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.

*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 function of the Fraternity.

Peter and Dorothy Manzione Memorial Fund A revolving loan fund, donated by Rosetta and Geraldine Manzione and friends of the family, is available to all students in the School of Pharmacy.

Mary McPartland Beck Scholarship Award Scholarship funds are available from earnings on a fund started 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.

Rite-Aid Scholarship A $1,000 scholarship from the Rite-Aid Corporation is available to students entering the final year of the pharmacy program. Letters of application should be addressed to the Dean, School of Pharmacy, by May 1. Selection is based on financial need, demonstration of normal progress, and good standing in the pharmacy program.

Tau Alumna 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.

Dr. B. Olive Cole Graduate Educational Grant A $300 grant is offered by Lambda Kappa Sigma to financially assist an alumnae member who is enrolled in a program of graduate study and research in the pharmaceutical sciences. Applications must be received by the chairman of the grant committee by November 15. Applications are available in the School of Pharmacy Office.

Other Programs Two additional programs, Health Professions Loans and Health Professions Scholarships, are described under Sources of Aid—Financial Aid Office, page 193.

RESERVE OFFICER TRAINING (ROTC) SCHOLARSHIPS

Army ROTC offers 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 a $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

Students who attend the Fall Semester, which begins in late August, receive academic advisement and register for classes during the preceding months of April, May, June, and July. Spring Semester students register in the Fall Semester during November and early December.

Orientation programs for new students are conducted by the schools in late spring and summer in conjunction with academic advisement and registration.

A comprehensive invoice that confirms the class schedule of courses for which the student is registered and lists fees, tuition, dormitory charge, deposits, financial aid awards, and balance due is mailed to the student at his or her permanent address a month before classes begin, thus enabling the student or parent to make payment by mail.

A three-day final registration for students who have neither obtained registration for classes nor concluded financial arrangements is held just before the opening of classes.

The financial obligation for class places reserved by a registered student who does not subsequently attend cannot be canceled unless written notification of the decision not to attend is given to the dean of the student's school before the first class day. Notification received on or after the opening day of classes is subject to the official withdrawal policy.

OFFICIAL REGISTRATION

Only students who are recognized as officially registered are bona fide students of Duquesne University. Unless students are officially registered, they are not permitted to attend classes, engage in student affairs, or, generally, have access to the buildings and grounds or use of the University's facilities.

Official registration is the recognition given by the University to persons who have met these conditions:

1. Appropriate authority for admittance to study in a school or department has been given by an authorized officer of the University. The admitting authority for undergraduate students resides in the Director of Admissions.

2. Authorization to continue in the program selected has been given and registration for classes has been accomplished in compliance with all academic requirements and procedures.
Arrangements have been made to the satisfaction of the University for payment in full of all financial charges, including fees, tuition, and housing charges, all of which are due and payable in full before the beginning of classes.

**CHANGE OF SCHEDULE**

Students who require a change of their class schedules (dropping or adding a course) may make the adjustment during pre-registration or the change of schedule week at the start of a semester but not later than the Latest Date for Change of Schedule as announced in the Academic Calendar. All changes must be approved by the appropriate academic advisor and processed with the Registrar.

During the Change of Schedule week approval of the instructors whose classes are being added or dropped is also required. A fee of $5.00 is charged for each form processed except when the change is by request of the appropriate Academic Dean.

No adjustment is made in the semester tuition charge for credits dropped when the change occurs later than the announced Latest Date for Change of Schedule. However, students who terminate their enrollment at the University by officially withdrawing are entitled to a reduction of the semester tuition charge according to the refund schedule published elsewhere in this catalog.

**CROSS-REGISTRATION**

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

- Carlow College
- Carnegie-Mellon University
- Chatham College
- Community College of Allegheny County
- 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.

**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 Academic Calendar.

**RECORDS AND REPORTS**

**SEMESTER GRADE REPORTS**

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

**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 $2.00 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 the advisor's name which may be obtained from the office of the school in which the student is 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.

AUDITING COURSES

To audit courses, a student must be officially registered and pay the same charges as for courses that are taken for credit. Enrollment in a course for audit is subject to approval of the student's academic advisor. Permission to audit graduate and professional courses requires consent of the dean of the school in which the desired course is offered.

CANCELLATION OF COURSES

The University makes every reasonable effort to offer courses as announced in the Semester Schedule of Courses and the Summer Session Bulletin. It reserves the right, however, to make changes or cancel courses in the academic schedule because of insufficient enrollment or for any other equally valid reason.

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 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

Freshman - 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 Student: 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 Student: Anyone who carries under 12 credits is regarded as a part-time student.

3. Post-graduate Student: A person who has completed a baccalaureate degree and is seeking additional undergraduate credits.

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 registrar within 72 hours after the final examination. No student is excused from taking the final examination.

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 per 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 (A temporary grade automatically given by an instructor when neither a passing nor failing grade can be determined because of incomplete course work or non-attendance of a student in a class. Unless a cogent explanation of extenuating circumstances, acceptable to the instructor, is presented and the missed examination or required assignment is made up by the date specified in the Academic Calendar, the I becomes a permanent F grade).
X — Absent from Final Examination. This grade was superseded in September, 1974 for undergraduate course evaluation by the I grade.

W — Official Withdrawal. (Used on a student's permanent record to indicate termination of attendance in courses under conditions of official withdrawal. See pages 211 and 212, Withdrawal from a Course and Withdrawal from the University.)

QUALITY POINT SYSTEM
The student's overall academic quality point 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

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.

Courses which must be taken in progression are those that have a required sequence, such as mathematics and modern languages. A student who has received an F for a prerequisite course may not continue in the sequential progression. A student who has earned a D grade in a course in a sequence may either repeat the course or go on in the sequence. If he goes on, he may not retake for credit at a later date that course in which he earned the D grade.

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 this elective pass/fail basis; however, the F grade is used in some courses where scaled grading is inappropriate. 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.

STUDENT STANDING
Progress towards a degree is measured by the cumulative, quality point average. The scholastic records of students who fail to meet the minimum requirements as established by the faculty of each college or school will be submitted to the College or School Committee on Student Standing for review and appropriate action. Normally, academic records will be reviewed annually at the conclusion of each academic year; therefore, students who fail to meet the minimum standards for retention in the Fall Semester may be permitted to continue their studies during the Spring Semester.

Students who are eligible to re-enroll on a full-time basis shall be considered in good standing and eligible to participate fully in all University-sponsored or controlled extra-curricular activities, including intercollegiate athletics. Students with marginal records of achievement (less than a 2.0 QPA) are subject to the jurisdiction of the appropriate Committee on Student Standing and will be evaluated according to the established guidelines.

For students who have attempted 15-30 credits, or more than 30 credits in one year, the guidelines are:

**Academic Warning**: 1.75 to 1.99 QPA (Letter of warning may be sent by appropriate Dean)

**Probation**: 1.50 to 1.74 QPA (Subject to the jurisdiction of the appropriate Committee on Student Standing and may be required to modify or restrict academic program)

**Dismissal**: Less than 1.50 QPA (Readmission may be permitted on recommendation of the appropriate Committee on Student Standing)

For the students who have attempted 31-60 credits or who have attempted up to 61 credits within four semesters, these guidelines prevail.

**Academic Warning**: 1.85 to 1.99 QPA (Letter of warning may be sent by appropriate Dean)

**Probation**: 1.75 to 1.84 QPA (Subject to the jurisdiction of the appropriate Committee on Student Standing and may be required to modify or restrict academic program)

**Dismissal**: Less than 1.75 QPA (Readmission may be permitted on recommendation of the appropriate Committee on Student Standing)

Students who have attempted 61 or more credits and who have a QPA of between 1.85 and 1.99 may continue on probation for one semester. However, students who have earned more than 90 credits are subject to dismissal.
not less than three credits (or one course) in theology are required for all

3 years' work (a minimum of 30 semester hours of credit) must be

mentioned general requirements, and the following

for graduation which the student is expected to know, as well as the afore-

resolution of any question about fulfillment of graduation requirements

academic advisor progress toward graduation and seek, with the advisor, the

I The bachelor's degree requires a minimum of 120 semester hours of course

each semester are sequentially correct and necessary for the degree program

University

announced in the Academic Calendar, and paid all indebtedness to the

Office of the Registrar on or before the latest date to apply for graduation as

Academic, Dean, filed the Application for the University Degree with the

degree program and in addition has the recommendation of the appropriate

character who has satisfactorily completed all academic requirements for the

The candidate for a University degree must be a person of good moral

GRADUATION REQUIREMENTS

The candidate for a University degree must be a person of good moral character who has satisfactorily completed all academic requirements for the degree program and in addition has the recommendation of the appropriate Academic Dean, 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 Academic Calendar, and paid all indebtedness to the University.

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

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 each 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 Radiological Health, Medical Technology, and Pharmacy which require, respectively, 123, 125, 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 course, 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 are required for all undergraduate Catholic students in every program at the University. This is a general requirement, individual schools may require alternate or additional course work in this area.

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.

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 of lecture or recitation, or at least two hours 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.

If a student, other than a first semester freshman, wishes to withdraw from a course, he may do so with the approval of his academic advisor and by processing the proper form up to the date announced in the Academic Calendar for withdrawal with a W grade.

If a student wishes to withdraw from a course after the date announced in the Academic Calendar, the student must seek approval of the Committee on Student Standing of the student's School. The student will be notified of the Committee's decision. If approval is granted, the student then initiates the appropriate form through the advisor.

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

SCHOLASTIC POLICIES

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 timewise 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.

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.
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 appropriate Academic Dean 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 reduction of charges nor refund of payments to which a student may have been otherwise entitled will be made if withdrawal is not in accordance with the official withdrawal procedure.

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 for the next semester, he or she should notify the appropriate Dean and advisor.
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