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UNIVERSITY  
OF  
SCRANTON  
CATALOG  
1961-1962

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**BULLETIN**  
OF THE  
**UNIVERSITY OF SCRANTON**

*COLLEGE OF ARTS AND SCIENCES*

1961 - 62







## UNIVERSITY OF SCRANTON

*Scranton 10, Pennsylvania*

**VERY REVEREND JOHN J. LONG, S.J., *President***

Courses in the College of Arts and Sciences are restricted to male students. Courses in the Evening, Summer and Graduate Divisions are open to men and women students. Please consult the catalogs of the respective divisions for further information.

For information on admission to the College of Arts and Sciences, write or phone:

### **THE DEAN OF ADMISSIONS**

University of Scranton  
Scranton 10, Pennsylvania  
Telephone: DI 7-3321

Information and regulations printed in this catalog are subject to change. Due notice of the changes will be given on the University Bulletin Board.



## ACCREDITATION

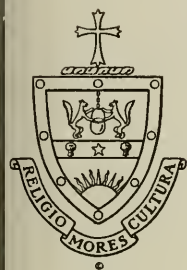
Pennsylvania Department of Public Instruction  
Middle States Association of Colleges and  
Secondary Schools

Board of Regents of the University of the State  
of New York



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*Volume Forty-six, Number 4 August 31, 1961*

## ACADEMIC CALENDAR 1961-1962

1961	JUNE	12-17	Registration
		19	Summer Session begins
	JULY	4	Independence Day — Holiday
		31	Saint Ignatius Day — Holiday
	AUGUST	12	End of Summer Session
SEPTEMBER		5-10	Freshman Orientation and Retreat
		11	Fall Session begins
		15	Mass of the Holy Ghost — Convocation
		18	Final day for late registration or change of course
NOVEMBER		1	Feast of All Saints — Holiday
		4	End of Quarter
		23-25	Thanksgiving Holidays
DECEMBER		8	Feast of the Immaculate Conception — Holiday
		14	Christmas Holidays begin (after last class)
1962	JANUARY	4	Classes resume
		15-20	Semester Examinations
		22-27	Semester vacation
		29	Spring Semester begins
FEBRUARY		5	Final day for late registration or change of course
		22	Washington's Birthday — Holiday
MARCH		16	Eighth Annual Military Mass in Honor of Saint Ignatius of Loyola — Spring Convocation
		24	End of Quarter
APRIL		13	Easter Holidays begin (after last class)
		30	Classes resume
MAY		21-25	Senior Examinations
		28	Semester Examinations begin
		31	Ascension Thursday — Holiday
JUNE		2	Baccalaureate Mass — Class Day Exercises
		3	Commencement

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## HISTORICAL ORIGINS

The University of Scranton was founded as Saint Thomas College in 1888. Its University Charter was received in 1938 and in 1942 it became the twenty-fourth of the twenty-eight Jesuit colleges and universities.

In 1540 the Jesuits (Society of Jesus) became a religious order under the direction and guidance of Saint Ignatius of Loyola. Almost from this date, education became one of the chief concerns of this Society. In the United States, the Jesuit educational tradition began with the founding of Georgetown College in 1789. Today there are thirteen Jesuit colleges and fifteen Jesuit universities in the United States. The University of Scranton carries on the tradition of Jesuit education in Northeastern Pennsylvania.





In planning for the student's educational future, the most important decision is to choose the college or university which is best suited to him. This bulletin is designed to help in this task.

The University is an urban, liberal arts college conducted by the Jesuit Fathers. It is located close to the business district in the City of Scranton, Pennsylvania. The city, the focal point of the Federal Highway System in northeastern United States, is less than three hours driving distance from New York and Philadelphia. Within easy travel distance are the beautiful Pocono Mountains and the Susquehanna River resorts with hundreds of streams, lakes and magnificent scenery.

This bulletin offers a cordial invitation to visit the campus and to talk with faculty members and administrators. Arrangements for your visit may be made at the Office of Admissions.

In this section

- **Campus and Buildings**
- **Objectives and Purposes**
- **Religious Training**
- **Counseling, Guidance and Placement**

### Alumni Memorial Library

Opened in 1960, the Alumni Memorial Library, is a striking presentation of advanced functional architectural planning. In bright, air-conditioned surroundings, students find ideal accommodations for concentrated study and research. The library features a music room with the most modern equipment for individual and group listening, seminar rooms for presentation and discussion of projects in specialized fields, and an audio-visual room for instruction in teaching techniques.











### Loyola Hall of Science

This modern science building, opened in 1957, provides the highly specialized equipment necessary for the study of engineering, physics, chemistry and biology.





## Classroom Building

This new University building to match the University's other modern structures, containing classrooms, laboratories and administrative offices, now under construction, will be occupied in 1962.







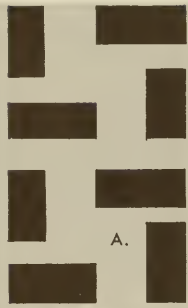
## Student Center

Opened in 1960, the Student Center has become the popular meeting place for all members of the University family. Auditorium and ballroom, cafeteria and snack bar, lounges and sun porch, rifle range and game room, bookstore and reading room provide for the leisure time needs of students and faculty.





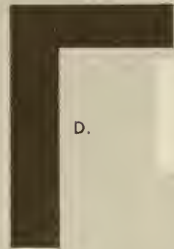
CLAY AVENUE



LINDEN STREET

- A. Dormitory Area
- B. Student Center
- C. Arts Building
- D. Classroom Building
- E. Loyola Hall of Science
- F. Faculty Residence
- G. Alumni Memorial Library
- H. Treasurer—Alumni House
- J. President's Office  
Student Services
- K. Greenhouse

QUINCY AVENUE

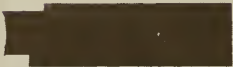


Parking

RIDGE ROW

MONROE AVENUE

LINDEN STREET



MADISON AVENUE

Estate Grounds

MADISON AVENUE

PLATT PLACE

PLAN of the UNIVERSITY OF SCRANTON



## OBJECTIVES AND PURPOSES

The University of Scranton, as one of the family of colleges and universities administered by the Society of Jesus throughout the world, shares with them their common education objectives.

To lead the student to understand himself and the world in which he lives; to enable him to fulfill his potentials and responsibilities as a person and as a member of human society, under God;

Harmoniously to develop all his powers of soul and body, under the influence of Divine Grace, by methods of teaching which will form habits of correct and vigorous thinking, and of courageous, effective and virtuous acting.

To attain these ends, the University requires that its undergraduates complete studies in language, literature, history, mathematics, the natural sciences, and in scholastic philosophy and theology as a necessary cultural foundation.

The University employs the methods of the *Ratio Studiorum*, the Jesuit Code of Liberal Education, which was first adopted in 1599 after more than thirty years of cooperative experiment and study. This method provides for:

Clear cut organization of successive objectives to be obtained by the students;

Frequent stimulation of the student to organize and synthesize the knowledge he has gained;

The use of personal inquiry and critical discussion as an essential part of the teaching technique to promote both intellectual curiosity and mastery of subject matter;

Development of creative thinking and effective self expression in accordance with the ideals of the intellectual and moral order;

Personal association between teacher and student to assure proper adjustment and that growth which comes only from direct contact with the ideals and example of a mature scholar.

## RELIGIOUS TRAINING



If education is to perfect human nature and prepare the student for a fruitful life, intellectual training must be supplemented by complete training in religion and morality. The more highly trained a man is, the greater are his potentials for good or evil, and, consequently, the more important the role of religion becomes to instruct the conscience and to strengthen the will in the ways of private, social and civic virtue.

One of the phases of this religious training at the University consists of formal instruction given during class periods as an integral part of the curriculum. Since religious truths form a body of doctrine that can be taught and studied as exactly and scientifically as other branches of human knowledge, the courses in religion are conducted as regular lecture courses with recitations and examinations. The courses are so distributed over the four years of college that the entire field of Christian dogma and morals is adequately surveyed.

In the admission of students to the University, however, no discrimination is made on the grounds of their religious belief. Non-Catholics are not obliged to take theology courses. Such students will substitute other courses in place of theology.



## COUNSELING, GUIDANCE AND PLACEMENT

*Counseling and guidance services are available for all students.*

**STUDENT COUNSELOR.** A characteristic of Jesuit education is the student counselor. He directs the spiritual activities of the University and its various religious organizations. He is, in a special sense, the student's friend and advisor in religious matters, in social duties and other personal concerns.

**GUIDANCE.** Staffed by professionally trained personnel, this department serves the students, the student counselor, the faculty and the administration. It provides counseling service on educational, vocational and personal matters. Students are tested and counseled on their aptitude for college work, study habits, their correct placement in the curriculum, and their reading techniques.

**PLACEMENT.** Undergraduates and alumni are given every possible assistance in finding satisfactory employment when they register with the University Placement Bureau. Officers of large corporations, from time to time, especially during the Spring term, arrange through the Bureau to visit the University to interview seniors for positions with their organizations.





## THE STUDENT AND THE UNIVERSITY

This section of the bulletin outlines procedures, requirements and responsibilities which will pertain to students throughout their four years at the University.

- Admission
- Residence Halls
- Student Expenses
- Financial Assistance
- General Regulations
- University Organizations



## ADMISSION

The Board of Admissions of the University of Scranton will make the final decision on applications for admission. In reaching this decision, the board will consider the following:

- The high school record — both the student's relative standing in class and the program followed.
- The scores on the College Entrance Examination Tests.
- Recommendations of teachers, guidance counselors, and the principal.
- The student's character, personality, and leadership potential.

**Steps in Making Application.** Requests for an application form and all correspondence dealing with admission to the University should be directed to: THE DEAN OF ADMISSIONS, UNIVERSITY OF SCRANTON, SCRANTON 10, PENNSYLVANIA.

A fee of \$5.00 is chargeable on application.

- Students should apply at the completion of their junior year in high school; or at the completion of the first semester of their senior year. July 15 is the final date on which applications for Fall term admission will be accepted.
- Complete the first two pages of the application form and give the entire form to the registrar or principal of the high school who will record the high school grades and return the form with his recommendations to the University.
- Arrange to have letters of recommendation mailed to the Dean of Admissions by teachers and guidance counselors.
- In December or January of senior year, take the Scholastic Aptitude Tests. The Achievement Tests in English, Intermediate Mathematics<sup>1</sup>, and the Modern Foreign Language studied in high school are to be taken in March of senior year. The Scholastic Aptitude Tests and the Achievement Tests are required of all applicants. The Aptitude Tests are used for admission, and the Achievement Tests are used for placement. Arrange for these tests one month ahead of the testing date by writing to: *The College Entrance Examination Board, Box 592, Princeton, New Jersey.*

<sup>1</sup> Applicants for science or engineering programs will take the Advanced Mathematics Test.



- Make use of the pre-college counseling offered by the Dean of Admissions after your application has been submitted.
- Final marks for senior year and certification of graduation are necessary. Arrange to have them sent to the Dean of Admissions on the completion of senior year in high school.

**Required High School Preparation.** Students desiring to enroll in any of several undergraduate programs offered by the University must have completed a total of sixteen or more high school units covering grades 9-12. The term "unit" means a high school course of from four to five hours weekly throughout an academic year of thirty-six weeks duration. Unit requirements and preferred distribution of secondary courses are given in the following table:

HIGH SCHOOL UNITS	COLLEGE PROGRAM CHOICE					
	Arts		Science or Engineering		Business Education or Social Science	
	Req.	Pref.	Req.	Pref.	Req.	Pref.
English .....	4	4	4	4	4	4
History & Social Science .....	2	3	2	3	2	3
Classical Languages .....	2	2+	0	2+	0	2+
Modern Foreign Language .....	2	2+	2	2+	2	2+
College Preparatory Mathematics .....	2	3+	3	4	2	3+
Science .....	1	2+	1	2+	1	2+
Electives .....	3		4		5	
<b>TOTAL .....</b>	16+		16+		16+	

- Applicants for Bachelor of Arts Degree may be accepted without the classical language requirement if they have sixteen (16) acceptable units.
- Applicants without secondary school credit in modern languages may be accepted if they present sixteen (16) acceptable units. However, they must register for the elementary course in a modern foreign language and continue their study of the language in Summer school. A single year of a language in high school will not be counted as a unit to satisfy the requirements for admission.
- German is the preferred language in the sciences and mathematics. Graduate schools normally require either French or German or both.

- Mathematics includes elementary, intermediate and advanced algebra, plane and solid geometry, trigonometry, analysis. Related Mathematics, Consumer Mathematics, General Mathematics will not be recognized as fulfilling admission requirements. Applicants for science and engineering programs must include trigonometry and have maintained an 85% average in each mathematics course.
- Science includes biology, chemistry and physics but not general science. High school work in chemistry is preferred. Engineering applicants are urged to include physics in their high school preparation.
- Electives are to be from academic subject matter courses and may include any of the following:

Ancient History . . . . .	1	Greek . . . . .	2 to 3
Medieval History . . . . .	1	Modern Foreign Language . . .	2 to 4
Modern History . . . . .	1	Mechanical Drawing . . . . .	1 only
Civics . . . . .	1	Business Subjects . . . . .	1 only
Economics . . . . .	1	College Preparatory	
Problems of Democracy . . . . .	1	Mathematics . . . . .	2 to 4
Social Science . . . . .	1	Science . . . . .	2 to 4

### REQUIRED OF ALL APPLICANTS

<i>What</i>	<i>Apply to Whom</i>	<i>When</i>
Application Form	Dean of Admissions	End of junior year or beginning of senior year
High School Record	Principal (to be sent to the Dean of Admissions)	End of junior year or beginning of senior year
Scholastic Aptitude Test	College Entrance Examination Board, Box 592, Princeton, New Jersey	November or December of senior year
Achievement Tests in: ENGLISH INTERMEDIATE MATHEMATICS MODERN FOREIGN LANGUAGE WRITING SAMPLE	College Entrance Examination Board, Box 592, Princeton, New Jersey	November or December of senior year

Arrange to have all test scores sent to the Dean of Admissions, University of Scranton.



## ADVANCED PLACEMENT AND EARLY ADMISSION

**ADVANCED PLACEMENT.** Applicants who have taken college level courses during their secondary school career may be given advanced placement or advanced placement and credit in those subjects at the discretion of the Board of Admissions. Students who have been accepted for admission and desire to apply for such placement must take the Advanced Placement Examination offered by the College Entrance Examination Board, Princeton, New Jersey.

**EARLY ADMISSION.** Outstanding secondary school students who demonstrate sufficient maturity may be admitted to the University after the completion of the junior year of high school. Such admission will be made at the discretion of the Board of Admissions. Students who are so admitted will be granted the high school equivalent diploma by the Department of Public Instruction, Harrisburg, Pennsylvania, upon completion of their freshman year of college. Such applicants should present a minimum of fifteen (15) acceptable high school units on application.

**TRANSFER STUDENTS.** At the discretion of the Board of Admissions, credits earned at other accredited colleges will be honored, provided a grade of C or its equivalent is presented and the content of the courses offered conforms to the requirements of the University of Scranton. No one, however, will be admitted to a standing higher than that represented by the completion of the junior year. To be eligible for a degree, a year of residence is required. Students entering from other institutions shall be required to make up curricular subjects prescribed in the course which they are to follow at the University of Scranton.

The candidate must present a transcript indicating honorable dismissal and particulars of past academic achievement signed by the proper college authority. In case the character of a student's work in any subject is such as to create doubt as to the quality of that which preceded, the University explicitly reserves the right to revoke any and all credit assigned on credentials and to exact examination in the same subject.





## RESIDENCE HALLS

Residence Halls for out-of-town students are provided on campus. All such students are obliged to live in these residences. An exception to this requirement will be made in the case of those out-of-town students who will be living with relatives in Scranton while attending the University. Permission to live outside the residence halls must be obtained from the Dean of Men before the beginning of the school year.

The Residence Hall fee is \$320.00 per semester. This is to be paid in advance either by the semester or for the full year. This fee provides for room for the full week and for breakfast and dinner Monday through Friday in the University cafeteria.

Students who remain on campus over the week-end may obtain their meals in the Student Center snack bar or in any of several restaurants located within walking distance of the University. All inquiries about residence halls should be directed to the Dean of Men.

Students desiring to reserve space in one of the residence halls must make a room reservation deposit of \$50.00 before May 1. This deposit is not refundable but is applicable to room and board.

Fees listed for residence facilities do not cover the times of calendar vacations. Students are expected to vacate their rooms at these times.



## STUDENT EXPENSES



Tuition per semester (including registration fee) . . . . .	\$370.00
<i>Special Service Fees</i>	
Late Registration Fee . . . . .	15.00
Change of Schedule after Registration . . . . .	3.00
Condition Examination (per course) . . . . .	5.00
<i>Ordinary Fees</i>	
University Fee, per semester . . . . .	30.00
(includes student personnel service, athletic admissions and subscriptions to University publications)	
Science and Engineering Laboratory, per semester . . . . .	15.00
Accounting Laboratory, per semester . . . . .	5.00
Statistics Laboratory, per semester . . . . .	10.00
Education and Psychology Laboratory, per semester . . . . .	5.00
Breakage Fees . . . . .	actual
Retreat Fee (Catholic students only) . . . . .	5.00
<i>For Seniors Only</i>	
Graduation Fee . . . . .	45.00
Retreat Fee (Catholic students only) . . . . .	15.00

Tuition and fees are payable in advance on registration. Registration is to be completed *by mail* by August 15 for the Fall semester and by January 13 for the Spring semester. There will be a \$5.00 service charge made for students who register in person instead of by mail. After the dates of August 15 or January 13, respectively, the late registration fee of \$15.00 becomes effective.

No students shall be permitted to receive any degree, certificate or transcript of record until his financial account with the University has been satisfactorily settled. Students are responsible for all breakage in the laboratories.

The tuition charge permits the student the number of credit hours as indicated for his course and year according to the curriculum tables. (cf. pp. 39-54) There is a charge of \$23.00 for each additional credit hour per semester. Students whose combined number of credit hours total twelve (12) or more in the College of Arts and Sciences or in combination with evening courses shall be charged full tuition and fees. Full time students who have permission to take additional courses in Evening Sessions will be charged at the rate of \$23.00 per semester hour of credit for all courses taken. The written premission of the Dean is always required to take both day and evening courses.

The University reserves the right to change tuition and fee charges at any time.

**MONTHLY PAYMENTS.** Parents who prefer to pay tuition, board and room, and other fees in equal monthly installments may take advantage of the Northeastern National Tuition Plan. For further information on this plan write to: Northeastern National Bank and Trust Company, Wyoming Avenue and Spruce Street, Scranton 3, Pennsylvania. Similar tuition plans are available in numerous banking institutions.

**REFUNDS.** When a student leaves the University without completing the semester, he may not demand a refund as a matter of right. If, however, his withdrawal is authorized for a good cause and he has honorable dismissal, he may request in writing a refund of tuition, board and room fees. Ordinary and special service fees are not refundable. The schedule of refunds is listed below.

PERIOD OF ATTENDANCE	REFUND
<i>First Semester</i>	
To September 23 .....	80%
To September 30 .....	60%
To October 7 .....	40%
To October 14 .....	20%
Beyond October 14 .....	no refund
<i>Second Semester</i>	
To February 10 .....	80%
To February 17 .....	60%
To February 24 .....	40%
To March 3 .....	20%
Beyond March 3 .....	no refund





## FINANCIAL ASSISTANCE

The University desires to help as many qualified students as possible complete a college education. Since financial difficulties are often obstacles, the financial assistance program at the University includes competitive and non-competitive grants as well as National Defense Student loans. For the student's convenience, a detailed outline of the program follows:

### COMPETITIVE SCHOLARSHIP PROGRAM

No. of Grants	Value per Year	Term of Grants	Geographic Restrictions
3	\$750	4 years	none
3	\$500	4 years	none

These scholarships are awarded on basis of

- Competitive Examination
- Excellence of High School Record
- Principal's Recommendation

Student must maintain a B average to keep scholarship.  
*Deadline: January 1*

### NON-COMPETITIVE SCHOLARSHIPS

Type	No. of Grants	Value per Year	Term of Grants	Geographic Restrictions
MARTHA FITCH FUND	35	\$200-250	4 years	none
UNICO CLUB FUND	1	\$550	4 years	Lackawanna Co.
FERRANTI BROS. CANADA DRY FUND	1	\$700	4 years	Lackawanna Co.
ELIZABETH WATKINS DIXSON FUND	1	\$750	4 years	none
BURKE FOUNDATION	2	\$600	4 years	none
ALUMNI GRANTS	6	\$200-250	1 year	none

The above grants are awarded on the basis of:

- Proven financial need
- Excellence of High School Record
- Excellence of Entrance Examination Scores
- Recommendation of Principal

Student must maintain a B average to keep the scholarship.

Type	No. of Grants	Value per Year	Term of Grants	Geographic Restrictions
PURPLE CLUB	40	\$100-250	4 years	Lackawanna County and radius of 25 miles around Scranton
NATIONAL DEFENSE STUDENT LOANS	variable	up to \$1000, depending on need	variable	none
<p>The above grants are awarded on the basis of:</p> <ul style="list-style-type: none"> <li>• Proven financial need</li> <li>• A good high school record</li> <li>• A satisfactory performance on entrance examination</li> <li>• Recommendation of principal</li> </ul> <p>Student must maintain a C average to keep scholarship.</p>				

#### OTHER NON-COMPETITIVE GRANTS

#### *Important Steps in Making Application for Financial Aid :*

**Apply for Admission** to Dean of Admissions, University of Scranton, Scranton 10, Pennsylvania.

**Apply for Financial Assistance** — also to Dean of Admissions.

#### **Complete the Parents' Confidential Statement**

Obtain this form from *College Scholarship Service*, Box 176, Princeton, New Jersey.

Please return application before *April First* to:

*Committee on Financial Assistance*, University of Scranton, Scranton 10, Pennsylvania.

Type	Source	Apply to
STUDENT TEACHER PROGRAM GRANTS	Scholarships awarded by the University of Scranton through cooperating school districts	Superintendent of school district
PENNSYLVANIA POWER AND LIGHT SCHOLARSHIPS	Grants made by PPL to students to attend colleges in area served by PPL	Principal of high school
STATE REHABILITATION GRANTS	Grants made under the State Rehabilitation Program	Local State Rehabilitation office

#### OTHER SOURCES OF FINANCIAL ASSISTANCE

The University provides over seventy campus jobs in various departments each year. Application is made through the University Placement Office. The Placement Office will also help students obtain off-campus employment.

#### WORK OPPORTUNITIES

## GENERAL REGULATIONS



Students of the University of Scranton, both on campus and off campus, are expected to manifest respect for order, morality, personal honor and the rights of others, which are the sign of a gentleman and the duty of a good citizen. Unbecoming conduct as well as insubordination, continued inapplication to studies or irregularity in attendance will constitute grounds for dismissal from the University.

The University reserves the right to dismiss at any time, and without making public the reason, any student who conducts himself contrary to the standards of the University or, in the opinion of the University authorities, fails to make proper use of the opportunities offered to him.

**ABSENCE AND LATENESS.** Regular attendance is one of the most important obligations of the student. Absence beyond twelve percent of classes or laboratories in any course, or absence totalling more than double the number of credits in a given course, will cause the student to be withdrawn from the course or courses and a failure will be recorded in each case. This allowance is considered sufficient to cover all extraordinary causes such as illness, death in the family and the like.

Students will not be admitted to class after the bell signaling the beginning of the class.

**PROPER ATTIRE.** Dress proper to the occasion is a hallmark of a gentleman and at the same time an important factor in his formation. At the University of Scranton proper attire includes coat and tie.



**GRADING SYSTEM.** Final grades are determined by the instructor on the basis of the student's homework, recitations, tests and final comprehensive examination. The standing of students at the quarter is to be ascertained from the instructor. Deficiency warnings will be mailed at the quarter to students doing unsatisfactory work.

All students are required to pass a comprehensive examination in each subject at the close of each semester.

The system of grading is based on the letters A, B, C, D, E and F. These letters are evaluated according to the following scale:

<b>A</b>	indicates, not only high achievement, but also a high degree of intellectual initiative and creative work	3 quality points for each credit hour
<b>B</b>	indicates attainment above the average	2 quality points for each credit hour
<b>C</b>	indicates medium or average attainment	1 quality point for each credit hour
<b>D</b>	indicates attainment below average but passing	0 quality points for each credit hour
<b>E</b>	Conditioned Failure. This grade is assigned to a student who, in the opinion of and at the discretion of the instructor and after having completed all semester exercises, narrowly fails to achieve a passing grade; or to the student who, after achieving a passing average in all other semester exercises narrowly fails to achieve a passing grade in the final examination. It is a temporary grade, and, after a single condition examination, will be replaced on the record by a final grade indicating that the student has passed satisfactorily or that his failure is complete. The highest mark on the condition examination is D. However, the semester grade may be higher. The condition grade must be removed within two weeks from the end of the semester.	
<b>F</b>	Complete Failure, with no privilege of re-examination and with the obligation of repeating the course if permitted to remain in attendance.	
<b>W</b>	Withdrew before judgment could be formed.	
<b>F</b>	Withdrew failing.	
<b>I</b>	Course requirements incomplete. The incomplete grade must be removed by completion of the remaining requirements by the end of the semester after which it has been incurred.	

**QUALITY OF WORK.** A grade average of C, or a quality point index of 1.0 is required for graduation.

The quality point index of a student is determined by dividing the total number of quality points earned by the total number of credits attempted.

A semester hour of credit represents one hour a week for one semester except when a class period is conducted in the style of a conference or seminar. Two or more hours of science laboratory work are counted as the equivalent of one lecture period.

**DEFICIENCIES.** No student will be classified as a senior who has not removed all deficiencies or who has not earned the necessary number of quality points. Any member of the senior class who incurs one failure or two conditions shall cease to be a candidate for a degree at the next commencement.

A student who has accumulated three failures at the end of a semester shall be dismissed.

**PROBATION.** Probation is a warning that a student is in danger of dismissal from the University for academic reasons.

**HONOR STUDENTS.** To be eligible for honors a student must carry the full program of his class. All semester hours in which a student receives a grade are counted in the determination of honors. In order to be listed as an honor student a grade of B or higher must be earned in each subject. Names of honor students are placed on the Dean's List, which is published each semester.





**RECOMMENDATIONS AND HONORS.** Favorable recommendations for the purpose of advanced studies will not be issued to any student who does not maintain a quality point average of 1.5 or better in his major field.

Honors at graduation are conferred under the following regulations:

- a. To be eligible students must have completed a minimum of 100 hours of work at the University of Scranton.
- b. Honor Averages:
 

Summa Cum Laude	A quality point average in all subjects of 3.0
Magna Cum Laude	A quality point average in all subjects of 2.5
Cum Laude	A quality point average in all subjects of 2.0

**WITHDRAWAL FROM THE UNIVERSITY.** A student who withdraws voluntarily from the University of Scranton will be granted an honorable dismissal under the following conditions:

1. He must not already be liable to dismissal for deficiencies, excessive absence, or misconduct.
2. He must discuss his intention with the Dean, and, if so instructed, must submit the request for withdrawal in writing from his parents or guardian.
3. He must have settled all financial accounts with the University. Withdrawal will be effective as of the date on which the notice is received from the parent or guardian.



## UNIVERSITY ORGANIZATIONS

College organizations are an essential part of student life. They not only complete the work begun in the classroom, but provide opportunities for initiative, leadership, self-expression, and the social graces. Most important of all, they produce that breadth of outlook which comes from close associations with men dedicated to intellectual and cultural pursuits.





## RELIGIOUS ORGANIZATIONS

The League of the Sacred Heart  
 The Swordsmen  
 (Sodality of Our Lady)  
 The Knights of Columbus  
 (University Council #4032)

ALPHA SIGMA NU  
 (The Honor Society)



## DEPARTMENTAL ACTIVITIES

Art Club  
 Aviation Club  
 Biology  
 Business  
 Chemistry  
 Deutscher Kreis  
 Economics  
 Society for the  
 Advancement of Management  
 Le Cercle Francais  
 Social Science  
 Greek Club  
 Loyolans (Spanish)  
 Student Education  
 Association  
 Pershing Rifles  
 Philosophy Club  
 Physics  
 Political Science  
 Royals Historical  
 Society

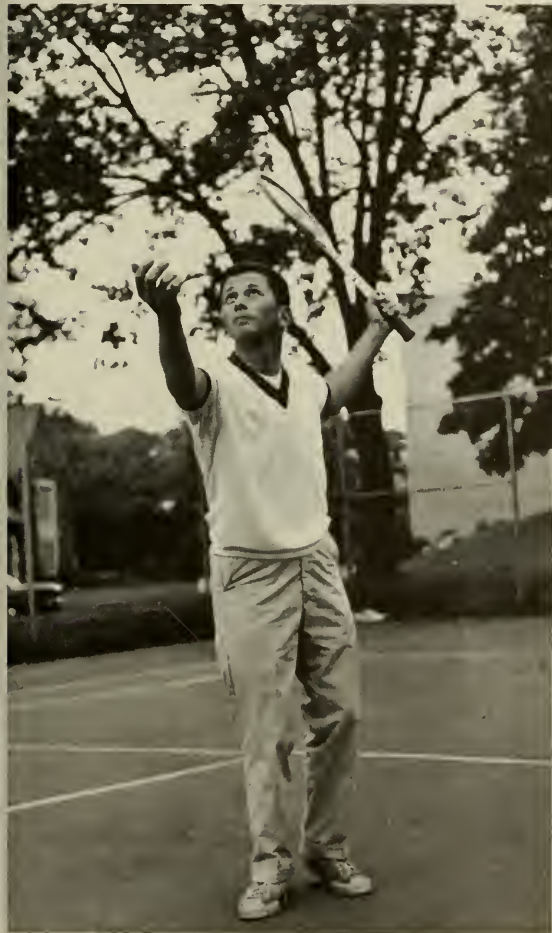




## ATHLETICS

Basketball  
Baseball  
Tennis  
Golf  
Rifle Team  
Intramurals









**UNIVERSITY ACTIVITIES**

Players	Student Council
Singers	Debate
Band	Radio Station

Publications  
 Aquinas  
 Esprit  
 Windhover  
 Bioscript  
 Physics Journal  
 Chemiscope





## PROGRAMS OF STUDY

The College of Arts and Sciences of the University of Scranton offers six basic programs for the undergraduate student, leading to the A.B. or B.S. degrees. A variety of fields of concentration within each enables the undergraduate student to specialize in one or more areas of study.

All freshmen pursue the same basic studies with the exception of one course peculiar to the curriculum chosen. This provides flexibility, enabling the freshman student to change from one curriculum to another with the least loss of credit.

At the beginning of junior year and in the case of the sciences and accounting at the beginning of sophomore year, the student must choose his field of concentration. Students preparing for law school are urged to concentrate in history, political science, economics or accounting.

The following pages present the programs available at the University of Scranton:

- Programs in the Arts and Social Sciences
- Programs in the Natural Sciences
- Program in Engineering
- Programs in Business Administration
- Programs in Teacher Training

## DEGREE PROGRAMS IN THE ARTS AND SOCIAL SCIENCES

Candidates for the Bachelor of Arts Degree may select a program emphasizing the classical tradition of Greece and Rome or one characterized by a more intense study of a modern foreign language. Majors are available in classical languages, English, modern foreign languages, history, philosophy, political science, economics, mathematics, psychology and sociology.

Candidates for the Bachelor of Science in Social Science receive a broad training in the various social sciences and may concentrate in history, political science, economics, psychology and sociology.

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i> <i>Fall Spring</i>	
<b>Freshman</b>			
English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Latin 3-4	Intermediate Latin <sup>1</sup>	4	4
Modern Language 21-22	Intermediate Modern Language	3	3
Theology 1-2	The Biblical World—The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
Greek 1-2	Elementary Greek <sup>2</sup>	4	4
		18	18
<i>Classical Curriculum</i>			
<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Latin 21-22	Livy and Virgil — Horace and Catullus	4	4
Philosophy 101-104	Logic — Philosophy of Being	4	4
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
Greek 21-22	Plato — Euripides	3	3
		18	18
<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
History 3-4	History of Modern Europe	3	3
Theology 101-102	Theology of the Individual — of the Layman	2	2
Latin 101-102	Horace and Juvenal — Cicero	4	4
Greek 31-32 or	Sophocles — Demosthenes or	3	3
Biology 3-4	General Biological Science	3	3
		16	16



<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Senior</b>			
Elective	Elective	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Electives	Electives in Classical Languages	6	6
		15	15

<sup>1</sup> Students presenting four units of high school Latin will be allowed to start with Latin 21-22. A qualifying examination may be required.

<sup>2</sup> Students presenting two units of high school Greek will be allowed to start with Greek 21-22. A qualifying examination may be required.

<b>Freshman</b>			
English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Latin 3-4	Intermediate Latin <sup>1</sup>	4	4
Modern Language 21-22	Intermediate Modern Language	3	3
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Mathematics 7-8 or	Fundamentals of Mathematics or	3	3
Mathematics 13-14	Freshman Mathematics — Introduction to Analysis	4	4
Military Science 11-12	First Year Basic, General Military Science	1	1
		17-18	17-18

<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Latin 21-22	Livy and Virgil — Horace and Catullus	4	4
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Philosophy 101-104	Logic — Philosophy of Being	4	4
History 1-2 <sup>2</sup>	History of the United States	3	3
Military Science 21-22	Second Year Basic, General Military Science	2	2
		18	18

<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
History 3-4	History of Modern Europe	3	3
Theology 101-102	Theology of the Individual — of the Layman	2	2
Electives	Electives in Major Field	6	6
Biology 3-4	General Biological Sciences	3	3
		18	18

<b>Senior</b>			
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Electives	Electives in Major Field	6	6
Elective	Elective	3	3
		15	15

<sup>1</sup> Students presenting four years of high school Latin will be allowed to start with Latin 21-22. A qualifying examination may be required.

<sup>2</sup> Students intending to major in economics, sociology or psychology will substitute the introductory course in these subjects for History 1-2.

**BACHELOR  
OF ARTS**  
*Classical Curriculum*  
**Majors in English,  
Modern Language,  
Latin, History,  
Political Science,  
Sociology, Economics,  
Psychology**

	<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>		
			<i>Fall</i>	<i>Spring</i>	
<b>Freshman</b>					
	English 5-6	College Composition and Rhetoric	3	3	
	English 3-4	Public Speaking	1	1	
	History 3-4	History of Modern Europe	3	3	
	Theology 1-2	The Biblical World — The Quadriform Gospel	2	2	
	Modern Language 21-22	Intermediate Modern Language	3	3	
	Mathematics 7-8 or Mathematics 13-14	Fundamentals of Mathematics or Freshman Mathematics — Introduction to Analysis	3	3	
	Military Science 11-12	First Year Basic Military Science	4	4	
			1	1	
			16-17	16-17	
<b>Sophomore</b>					
<b>BACHELOR OF ARTS</b> <i>Modern Language Sequence</i> Majors in English, Modern Language, Mathematics <sup>1</sup> , History, Political Science, Economics, Sociology, Psychology	English 21-22	Poetry and Dramatic Literature	3	3	
	History 1-2 <sup>2</sup>	History of the United States	3	3	
	Philosophy 101-104	Logic — Philosophy of Being	4	4	
	Theology 21-22	Man's Redemption — The Catholic Church	2	2	
	Military Science 21-22	Second Year Basic, Military Science	2	2	
	Modern Language	Advanced Modern Language Elective	3	3	
				17	17
	<b>Junior</b>				
		Philosophy 105-108	Philosophy of Man	4	4
		English 131-132	Masterpieces of World Literature	3	3
	Theology 101-102	Theology of the Individual — of the Layman	2	2	
	Electives	Major Elective Courses	6	6	
	Biology 3-4	General Biological Science	3	3	
			18	18	
<b>Senior</b>					
	Philosophy 110-111	Philosophy of Human Conduct	4	4	
	Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2	
	Elective	Elective	3	3	
	Electives	Major Elective Courses	6	6	
			15	15	

<sup>1</sup> Students desiring to major in mathematics will take Mathematics 21-22 in sophomore year in place of History 1-2. History 1-2 will be taken by mathematics majors in junior year in place of one of their major elective courses.

<sup>2</sup> Students intending to major in economics, sociology or psychology will substitute the introductory course in these subjects for History 1-2.

<b>Freshman</b>					
<b>BACHELOR OF SCIENCE</b> <i>Social Science Curriculum</i> Majors in History, Political Science, Sociology, Economics, Psychology	English 5-6	College Composition and Rhetoric	3	3	
	English 3-4	Public Speaking	1	1	
	Mathematics 7-8	Fundamentals of Mathematics	3	3	
	Modern Language 21-22	Intermediate Modern Language	3	3	
	History 3-4	History of Modern Europe	3	3	
	Theology 1-2	The Biblical World — The Quadriform Gospel	2	2	
	Military Science 11-12	First Year Basic, General Military Science	1	1	
				16	16

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Philosophy 101-104	Logic — Philosophy of Being	4	4
History 1-2	History of the United States	3	3
Economics 23-24 or	Principles of Economics or	3	3
Sociology 21-22	Basic Sociology — Social Problems	3	3
Military Science 21-22	Second Year Basic, General Military Science	2	2
Theology 21-22	Man's Redemption — The Catholic Church	2	2
		17	17
<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
Biology 3-4	General Biological Science	3	3
Theology 101-102	Theology of the Individual — of the Layman	2	2
Electives	Electives in Major Sequence <sup>1</sup>	6	6
Elective	Elective	3	3
		18	18
<b>Senior</b>			
Economics 23-24 or	Principles of Economics or	3	3
Sociology 21-22	Basic Sociology — Social Problems	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Electives	Electives in Major Sequence	6	6
		15	15

<sup>1</sup> Economics majors will take Economics 25-26 in junior year together with six elective credits each semester.

## DEGREE PROGRAMS IN THE NATURAL SCIENCES AND MATHEMATICS

The degree programs in the natural sciences and mathematics are designed to give the student a solid foundation in scientific method and provide the courses necessary for the mastery of one or other of the sciences or mathematics.

Majors are available in biology, chemistry, physics, electronics or mathematics.

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Spring</i>	<i>Fall</i>
<b>Freshman</b>			
English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Mathematics 13-14	Freshman Mathematics — Introduction to Analysis	4	4
Modern Language 21-22	Intermediate Modern Language	3	3
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
Chemistry 1-2	Inorganic Chemistry and Qualitative Analysis	4	4
		18	18

**BACHELOR  
OF SCIENCE  
Major in Biology**

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Biology 1-2	General Biology	4	4
Philosophy 101-104	Logic — Philosophy of Being	4	4
Chemistry 22	Quantitative Analysis	4	
Sociology 22	Social Problems		3
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		19	18
<b>Junior</b>			
Physics 1-2	General Physics	4	4
Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Chemistry 101-102	Organic Chemistry	4	4
Biology 21-22	Comparative Vertebrate Anatomy	4	4
		18	18
<b>Senior</b>			
History 1-2	History of the United States	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Biology 103-105	Histology — Embryology	4	4
Biology Electives		4	4
		17	17

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**Freshman**

English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Mathematics 13-14	Freshman Mathematics — Introduction to Analysis	4	4
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Modern Language 21-22	Intermediate Modern Language	3	3
Military Science 11-12	First Year Basic, General Military Science	1	1
Chemistry 1-2	Inorganic Chemistry and Qualitative Analysis	4	4
		18	18

**BACHELOR  
OF SCIENCE**  
Major in Chemistry

**Sophomore**

English 21-22	Poetry and Dramatic Literature	3	3
Chemistry 22-23	Quantitative Analysis — Advanced Quantitative Analysis	4	3
Philosophy 101-104	Logic — Philosophy of Being	4	4
Mathematics 21-22	Analysis	4	4
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		19	18

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Chemistry 101-102	Organic Chemistry	4	4
Chemistry 123-124	Physical Chemistry	4	4
Physics 11-12	Elements of Physics	4	4
		18	18
<b>Senior</b>			
History 1-2	History of the United States	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Electives	Electives	7	7
		16	16

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**Freshman**

English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Chemistry 1-2	Inorganic Chemistry and Qualitative Analysis	4	4
Mathematics 13-14	Freshman Mathematics—Introduction to Analysis	4	4
Modern Language 21-22	Intermediate Modern Language	3	3
Theology 1-2	The Biblical World—The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
		18	18

**BACHELOR  
OF SCIENCE**  
Major in Mathematics

**Sophomore**

English 21-22	Poetry and Dramatic Literature	3	3
Physics 11-12	Elements of Physics	4	4
Mathematics 21-22	Analysis	4	4
Philosophy 101-104	Logic—Philosophy of Being	4	4
Theology 21-22	Man's Redemption—The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		19	19

**Junior**

Philosophy 105-108	Philosophy of Man	4	4
Physics 106-107	Electronic Principles and Circuits	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Mathematics 101-102	Differential Equations—Vector Analysis	4	3
Mathematics 104-103	Statistical Analysis — Advanced Differential Equations	3	3
		17	16



<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Senior</b>			
History 1-2	History of United States	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Mathematics 106-107	Advanced Analysis	3	3
Mathematics 108-111	Modern Algebra — Linear Algebra	3	3
		15	15
<b>Freshman</b>			
English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Chemistry 1-2	Inorganic Chemistry and Qualitative Analysis	4	4
Mathematics 13-14	Freshman Mathematics — Introduction to Analysis	4	4
Modern Language 21-22	Intermediate Modern Language	3	3
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
		18	18
<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Physics 11-12	Elements of Physics	4	4
Mathematics 21-22	Analysis	4	4
Philosophy 101-104	Logic — Philosophy of Being	4	4
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		19	19
<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Physics Electives	Physics Electives	4	4
Physics 104-105	Electricity and Magnetism	4	4
Mathematics 101-102	Differential Equations — Vector Analysis	4	3
		18	17
<b>Senior</b>			
History 1-2	History of the United States	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Physics 110-111	Modern Physics	3	3
Physics 114-115	Advanced Physics Laboratory	1	1
Mathematics 106-107	Advanced Analysis	3	3
		16	16

**BACHELOR  
OF SCIENCE**

Major in Physics

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Freshman</b>			
English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Chemistry 1-2	Inorganic Chemistry and Qualitative Analysis	4	4
Mathematics 13-14	Freshman Mathematics — Introduction to Analysis	4	4
Modern Language 21-22	Intermediate Modern Language	3	3
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
		18	18
<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Physics 11-12	Elements of Physics	4	4
Mathematics 21-22	Analysis	4	4
Philosophy 101-104	Logic — Philosophy of Being	4	4
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		19	19
<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Engineering 101	Elements of Electrical Engineering		4
Physics 116	Introduction of Electromagnetics	4	
Physics 106-107	Electronic Principles and Circuits	4	4
Mathematics 101-110	Differential Equations — Applied Mathematics	4	4
		18	18
<b>Senior</b>			
History 1-2	History of the United States	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Physics 108-109	High Frequency Electromagnetic Waves— Microwave Theory and Circuits	4	4
Physics 103-112	Light and Optics — Acoustics	4	3
		17	16

**BACHELOR  
OF SCIENCE**  
Major in Electronics

## PRE-ENGINEERING PROGRAM

The University provides a Pre-engineering Program which introduces the student to the highly technical training necessary for all phases of the engineering profession. This is a two year course which enables the student to transfer to an engineering school to complete his degree work.

Of special importance is the University of Scranton's association with the Cooperative Engineering Program at the University of Detroit. For the student who has completed the pre-engineering curriculum at the University of Scranton, the three year cooperative program offers alternate semesters of formal instruction and work experience in industry.

	<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
			<i>Fall</i>	<i>Spring</i>
		<b>Freshman</b>		
	English 5-6	College Composition and Rhetoric	3	3
	English 3-4	Public Speaking	1	1
	Engineering 13	Engineering Graphics I	3	
	Physics 18	Elementary Mechanics		4
	Chemistry 1-2	Inorganic Chemistry and Qualitative Analysis	4	4
	Mathematics 13-14	Freshman Mathematics — Introduction to Analysis	4	4
	Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
	Military Science 11-12	First Year Basic, General Military Science	1	1
			18	19
		<b>Sophomore<sup>1</sup></b>		
	English 21-22	Poetry and Dramatic Literature	3	3
	Physics 19-20	Elementary, Heat, Light, Sound-Electricity and Magnetism	4	4
	Mathematics 21-22	Analysis	4	4
	Theology 21-22	Man's Redemption — The Catholic Church	2	2
	Military Science 21-22	Second Year Basic, General Military Science	2	2
	Engineering 24	Engineering Graphics II		3
	Engineering 21	Engineering Mechanics — Statics	4	
			19	18

<sup>1</sup> Sophomores who have a quality point index of 1.5 or better may take Engineering 22, Engineering Dynamics, in second semester as an extra course for which they will be charged in accord with catalogue regulations.

## DEGREE PROGRAMS IN BUSINESS ADMINISTRATION

The Business Administration curriculum gives the student a firm foundation in the liberal disciplines as well as a thorough understanding of economic principles, accounting, finance, management and marketing. The student is trained in an analytical approach to business problems. Individuality of thought and expression needed for civic and industrial leadership and the broad knowledge of economics and business necessary for executive responsibility are stressed.

Concentration may be in accounting, statistics and management or the student may arrange, with the approval of the department chairman, to follow other specialized programs of concentration.

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Freshman</b>			
English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Modern Language 21-22	Intermediate Modern Language	3	3
Mathematics 7-8 or Mathematics 13-14	Fundamentals of Mathematics or Freshman Mathematics—Introduction to Analysis	3	3
Business 1-2	Elementary Accounting	4	4
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
		17-18	17-18
<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Philosophy 101-104	Logic — Philosophy of Being	4	4
Economics 23-24	Principles of Economics	3	3
History 1-2	History of the United States	3	3
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		17	17
<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Business 5-6	Business Law I-II	2	2
Business 108	Industrial Management	4	
Mathematics 31	Statistical Mathematics		4
Business 103-104	Money and Banking	3	3
Business 105-106	Business Statistics	3	3
		18	18

**BACHELOR  
OF SCIENCE**  
Concentration in  
Business Statistics

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
	<b>Senior</b>		
Biology 3-4	General Biological Science	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Business 126-175	Corporate Financial Management — Business Cycles	4	3
Business 173-174	Applied Statistical Analysis — Time Series and Correlation	3	3
Business 25-26	Business Law III-IV	2	2
		18	17

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**Freshman.**

English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Modern Language 21-22	Intermediate Modern Language	3	3
Mathematics 7-8 or	Fundamentals of Mathematics or	3	3
Mathematics 13-14	Freshman Mathematics — Introduction to Analysis	4	4
Business 1-2	Elementary Accounting	4	4
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
		17-18	17-18

**Sophomore**

English 21-22	Poetry and Dramatic Literature	3	3
Philosophy 101-104	Logic — Philosophy of Being	4	4
Economics 23-24	Principles of Economics	3	3
History 1-2	History of the United States	3	3
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		17	17

**BACHELOR  
OF SCIENCE**
**Concentration in  
Business Management**
**Junior**

Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Business 5-6	Business Law I-II	2	2
Business 108-107	Industrial Management — Marketing	4	4
Business 103-104	Money and Banking	3	3
Business 105-106	Business Statistics	3	3
		18	18

**Senior**

Biology 3-4	General Biological Science	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Business 126-171	Corporation Finance — Financial Management	4	3
Business 170-172	Marketing Management — Administrative Practices	3	3
Business 25-26	Business Law III-IV	2	2
		18	17



<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Freshman</b>			
English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Modern Language 21-22	Intermediate Modern Language	3	3
Mathematics 7-8 or Mathematics 13-14	Fundamentals of Mathematics or Freshman Mathematics — Introduction to Analysis	3	3
Business 1-2	Elementary Accounting	4	4
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
		17-18	17-18
<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Business 21-22	Intermediate Accounting I-II	2	2
Economics 23-24	Principles of Economics	3	3
Philosophy 101-104	Logic — Philosophy of Being	4	4
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		16	16
<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Business 5-6	Business Law I-II	2	2
Business 101-102	Advanced Accounting — Cost Accounting	4	4
Business 103-104	Money and Banking	3	3
Business 105-106	Business Statistics	3	3
		18	18
<b>Senior</b>			
History 1-2	History of the United States	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Business 120-124	Auditing Theory — Federal Taxation	4	6
Business 126	Corporation Finance	4	
Business 25-26	Business Law III-IV	2	2
		19	17

**BACHELOR  
OF SCIENCE**  
Concentration in  
Accounting

## PROGRAMS IN TEACHER TRAINING

Since teaching is a profession which requires intellectual competence, a sound personality and self-dedication, no student is admitted directly from high school to a program in education. A student who plans to train for teaching in an elementary or secondary school must register for his freshman year in the regular degree programs in the Arts and Social Sciences or in the Natural Sciences. He may apply for transfer to the Education Program at the end of his freshman or sophomore year if his academic record averages better than C, recommendations of his teachers are favorable, and evidence of a sound personality and competence in both written and oral English have been displayed.

Careful planning of a student's program and consultation with advisors from the subject field and the education department is necessary to properly fulfill the University's requirement of thirty (30) upper division subject matter credits, eighteen (18) of which must be in one field, and the Department of Public Instruction's certification requirements.

		<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<i>Department and No.</i>	<i>Descriptive Title of Course</i>		
<b>Freshman</b>			
English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Mathematics 7-8 or Mathematics 13-14	Fundamentals of Mathematics or Freshman Mathematics — Introduction to Analysis	3	3
Modern Language 21-22	Intermediate Modern Language	4	4
Theology 1-2	The Biblical World — The Quadriform Gospel	3	3
Military Science 11-12	First Year Basic, General Military Science	2	2
History 3-4	History of Modern Europe	1	1
		3	3
		<hr/>	<hr/>
		16-17	16-17
<b>Sophomore</b>			
English 21-22	Poetry and Dramatic Literature	3	3
Philosophy 101-104	Logic — Philosophy of Being	4	4
History 1-2	History of the United States	3	3
Education 21-22	Social Foundation of Education — Educational Psychology	3	3
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		<hr/>	<hr/>
		17	17

### BACHELOR OF SCIENCE

Program Preparatory  
to Teaching in  
Elementary Grades

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Junior</b>			
Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Education 120-121	General Methods of Teaching — Child Psychology	3	3
Education 123-124	Arts and Crafts for Teachers — Teaching of Reading	3	3
Education 125-129	Teaching of Arithmetic — Teaching Language Arts	3	3
		15	15
<b>Senior</b>			
Biology 3-4	General Biological Science	3	3
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Education 122-128	Elementary School Curriculum — Practice Teaching	3	6
Education 126	Teaching Science	3	
Education 127	Teaching of Health and Physical Education	3	
		18	15

**Freshman**

English 5-6	College Composition and Rhetoric	3	3
English 3-4	Public Speaking	1	1
Mathematics 7-8 or	Fundamentals of Mathematics or	3	3
Mathematics 13-14	Freshman Mathematics—Introduction to Analysis	4	4
Modern Language 21-22	Intermediate Modern Language	3	3
Theology 1-2	The Biblical World — The Quadriform Gospel	2	2
Military Science 11-12	First Year Basic, General Military Science	1	1
History 3-4	History of Modern Europe	3	3
		16-17	16-17

**Sophomore**

English 21-22	Poetry and Dramatic Literature	3	3
Philosophy 101-104	Logic — Philosophy of Being	4	4
History 1-2	History of the United States	3	3
Education 21-22	Social Foundation of Education — Educational Psychology	3	3
Theology 21-22	Man's Redemption — The Catholic Church	2	2
Military Science 21-22	Second Year Basic, General Military Science	2	2
		17	17

**Junior**

Philosophy 105-108	Philosophy of Man	4	4
Theology 101-102	Theology of the Individual — of the Layman	2	2
Electives	Subject Matter Electives	9	9
Biology 3-4	General Biological Science	3	3
		18	18

**BACHELOR  
OF SCIENCE**

**Program Preparatory  
to Teaching in  
Secondary Schools**

<i>Department and No.</i>	<i>Descriptive Title of Course</i>	<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
<b>Senior</b>			
Philosophy 110-111	Philosophy of Human Conduct	4	4
Theology 110-111	Catholic Philosophy of Religion — The Church and Social Order	2	2
Education 103-105	Principles and Practices of High School Teaching — Observation and Practice	3	6
Education 104	Special Methods of Teaching in High School	3	
Electives	Subject Matter Electives	6	6
		18	18





## COURSES OF INSTRUCTION

This section of the bulletin presents the courses of instruction offered by each department of the University.

### *Department*

Biology

Chemistry

Economics and Business  
Administration

Education and Psychology

Engineering

English

History and Politics

Languages and Fine Arts

Mathematics

Military Science

Philosophy

Physics

Social Science

Theology

## DEPARTMENT OF BIOLOGY

Dr. Wolf, *Chairman*

Courses in the Department of Biology are designed to achieve the following objectives: 1. To present the fundamental scientific facts and concepts which are needed for an understanding of the living world and man's relation to it; 2. To develop habits of precision, accuracy, curiosity, critical evaluation, neatness and patience together with skill in laboratory techniques; 3. To prepare students for professional schools such as those of medicine, dentistry and allied fields or for advanced study or work in other biological fields.

To major in biological sciences the following courses are required:

Chemistry 1-2; 22; 101-102

Mathematics 13-14

Physics 1-2

Biology 1-2; 21-22; 103 and 105 with at least eight elective credits taken from Biology 23; 104; 120; 121; 124; 125. Students preparing for research in the basic pre-

clinical sciences are advised to add Mathematics 21-22 and Chemistry 123-124.

**BIOL. 1 & 2 General Biology**

A comprehensive study of the nature of living organisms, both plant and animal; their structure, function, development and relationships, including the problems of development, heredity and evolution. 2 hours lecture and four hours laboratory each semester. *8 credits*

**BIOL. 3 & 4 General Biological Science**

The nature of living organisms and general biological principles, as they affect man and in relation to his problems, are stressed in general terms. 2 hours lecture and 2 hours laboratory each semester. *6 credits*

**BIOL. 21 & 22 Comparative Vertebrate Anatomy**

(Prerequisite: Biology 1-2) Structure and phylogeny of vertebrate organ-systems, emphasizing mammalian structure and correlation with function. Shark, necturus, turtle, pigeon, cat subjected to detailed laboratory study. 2 hours lecture and 4 hours laboratory each semester. *8 credits*

**BIOL. 23 Genetics**

(Prerequisite: Biology 1-2 or 3-4) Principles and theories of heredity as developed by experimental breeding, biometrical and cytological methods with their applications to plant, animal and human heredity. 2 hours lecture and 4 hours laboratory. *4 credits*

**BIOL. 101 Cellular Biology**

(Prerequisite: Biology 1-2 or 3-4) Morphology, physiology and biochemistry of the cell as the basic unit in all living organisms and a unifying theme of life. 2 hours lecture and 4 hours laboratory. *4 credits*

**BIOL. 103 Histology**

(Prerequisite: Biology 21-22) The microscopic structure and the functioning relationships of vertebrate tissues and organs with most attention devoted to the mammal. 2 hours lecture and 4 hours laboratory. *4 credits*

**BIOL. 104 Microtechnique**

(Corequisite: Biology 103) General and special methods in the preparation of animal and plant cells and tissues for microscopic study. 1 hour lecture and 6 hours laboratory. *4 credits*

**BIOL. 105 Embryology**

(Prerequisite: Biology 21-22) Comparative study of reproduction, gametogenesis, fertilization, cleavage, morphogenesis, development of organ-systems in frog, chick and pig. 2 hours lecture and 4 hours laboratory. *4 credits*

**BIOL. 106 Principles of Heredity**

(Prerequisite: Biology 3-4) A less technical presentation of the principles and concepts of heredity, stressing their practical applications to the problems of plant, animal and human inheritance. 2 hours lecture and 2 hours laboratory. *3 credits*

**BIOL. 107 Anatomy & Physiology**

(Prerequisites: Biology 3-4) Fundamentals of structure and function of the human body to develop an understanding of its physical nature and operation. *4 credits*

**BIOL. 108 Field Biology**

(Prerequisite: Biology 3-4) Study of living organisms in relation to each other and to all aspects of environment, together with techniques for collecting and maintaining living organisms. 2 hours lecture and 2 hours laboratory. *3 credits*

**BIOL. 120 General Physiology**

(Prerequisites: Biology 21-22, Chem. 101-102, Phys. 1-2) Physiological processes underlying the functioning of the animal organism. Biochemistry of protoplasm, enzymes, irritability, excitation, conduction, contractility, cellular physiology, and functions of mammalian organ-systems. 2 hours lecture and 4 hours laboratory. *4 credits*

**BIOL. 121 Bacteriology**

(Prerequisites: Biology 21-22, Chem. 101-102, Phys. 1-2) Structure, function, growth, reproduction, heredity and relationships of bacteria, yeasts, molds, virus, including a brief survey of pathogens, and an introduction to disease and immunology. *4 credits*

**BIOL. 124 Undergraduate Research**

(Prerequisites: 12 credits in Biology, Chemistry 101-102, Physics 1-2) Individual problems for advanced students with sufficient background in biological and physical sciences. Subject time and credits arranged individually. *Variable credit*

**BIOL. 125 Introduction to Parasitology**

(Prerequisites: Biology 21-22, Chem. 101-102) Classification, structure, life cycles and host relationships of parasites from major animal phyla, including diseases, methods of control and treatment of infestations in vertebrates. 2 hours lecture and 4 hours laboratory. *4 credits*

**DEPARTMENT OF CHEMISTRY**

Mr. Burti, *Chairman*

The aims of the department are: 1. To train the student in analytical skills and scientific methodology and develop the character-traits of patience, pertinacity, honesty and neatness, which are indispensable to the scientist; 2. To train the student for a position of responsibility, either as an advanced student in a graduate or professional school or as a member of the staff of an educational, industrial or research institution.

To major in chemistry the following courses are required: Mathematics 13-14; 21-22; Physics 11-12; Chemistry 1-2; 22-23, plus twenty-four (24) additional credits in upper division courses including Chemistry 101-102 and Chemistry 123-124.

**CHEM. 1 & 2 General Chemistry and Qualitative Analysis**

A study of the laws, theories and principles of general chemistry and qualitative analysis. Laboratory work includes semi-micro techniques for qualitative identification and separation of cations and anions. 3 hours lecture and 3 hours laboratory each semester. *8 credits*

**CHEM. 22 Quantitative Analysis**

(Prerequisites: Chemistry 1-2) A survey of the general principles of gravimetric, volumetric and electrolytic analyses. Laboratory work stresses technique. 2 hours lecture and 6 hours laboratory. *4 credits*

**CHEM. 23 Advanced Quantitative Analysis**

(Prerequisite: Chemistry 22) A survey of advanced methods of analysis using specialized apparatus. The analysis of alloys, ores and mixed salts. 1 hour lecture and 6 hours laboratory. *3 credits*

**CHEM. 101 & 102 Organic Chemistry**

(Prerequisites: Chemistry 1-2) An introduction to the chemistry of the principal aliphatic and aromatic compounds of carbon and their derivatives. Laboratory work includes investigation of the chemical properties and synthesis of the compounds studied. 3 hours lecture and 3 hours laboratory each semester. *8 credits*

**CHEM. 103 Advanced Organic Chemistry**

(Prerequisites: Chemistry 101-102) A continuation of Chemistry 101-102, including a study of the alicyclics and heterocyclics, the organic dyes and the naturally occurring compounds of carbon. 2 hours lecture and 3 hours laboratory. *3 credits*

**CHEM. 121 Biochemistry**

(Prerequisites: Chemistry 22, 101-102) A study of the chemical nature and more important reactions of the biologically active compounds such as carbohydrates, lipids, amino acids, proteins, minerals, vitamins and hormones. 2 hours lecture and 3 hours laboratory. *3 credits*



**CHEM. 122 Physiological Chemistry**

(Prerequisites: Chemistry 22, 101-102) A study of the metabolism, digestion and absorption of carbohydrates, lipids, amino acids and proteins together with the role of enzyme and enzyme systems in the above processes. 2 hours lecture and 3 hours laboratory. *3 credits*

**CHEM. 123 & 124 Physical Chemistry**

(Prerequisites: Chemistry 22; Mathematics 21-22) A study of the physico-chemical properties of matter and the dynamics of chemical reactions. Laboratory experiments illustrate the principles studied. 3 hours lecture and 3 hours laboratory each semester. *8 credits*

**CHEM. 126 Organic Analysis**

(Prerequisites: Chemistry 101-102) A study of systematic classification and identification of organic compounds from their solubilities and group reactions, including the separation and identification of the components of organic mixtures. 1 hour lecture and 6 hours laboratory. *3 credits*

**CHEM. 127 Chemical Literature**

A study of the published source material of chem-

ical science and chemical industry. The course includes practical instruction in library technique. One hour lecture. *1 credit*

**CHEM. 128 Seminar**

(Prerequisites: Chemistry 101-102, 123-124) A discussion of advanced topics in chemistry for students majoring in chemistry. Assignments will be made from various areas of chemistry, and full discussion by the participants is expected. 1 hour each week. *1 credit*

**CHEM. 129 & 130 Advanced Physical Chemistry**

(Prerequisites: Chemistry 123-124) Special topics, including classical and quantum statistics and thermodynamics, molecular and solid state structure and quantum chemistry. 2 hours lecture each semester. *4 credits*

**CHEM. 132 Undergraduate Research**

(Prerequisites: Chemistry 103, 124 & 127) Individual study and research in connection with a specific chemical problem. The course taken with the permission of the Chemistry Department Staff. *2 credits*

**DEPARTMENT OF ECONOMICS AND BUSINESS ADMINISTRATION**

Dr. Senker, *Chairman*

**BUSINESS ADMINISTRATION**

Courses in Business Administration are designed to: 1. Encourage individuality of thought and expression by the student; to develop in him an analytical approach to the solution of current business problems and thereby develop future civic and industrial leaders. 2. Train for executive positions in the business world through the study of accounting, law and theoretical as well as applied economics; to serve as preliminary training for those wishing to enter the field of law or graduate study in business; to train intensively those wishing to enter the field of public or private accounting.

The following courses are required of all business majors: Mathematics 7-8 or 13-14; Economics 23-24; Business 1-2; 5-6; 25-26; 103-104; 105-106; 126. In addition accounting majors must take Business 21-22; 101-102; 120; 124.

Majors in business statistics will take Business 173; 174 or 165; 175; 108 and Mathematics 31, Biology 3-4.

Majors in business management will take Business 107-108; 170, 171, 172, Biology 3-4.

**BUS. 1 Elementary Accounting I**

Detailed study of the balance sheet and profit and loss statement. Account and ledger technique, including complete bookkeeping procedures. Ad-

justments. The journal and special journals, ledger subdivision and control accounts. Business papers. Negotiable instruments. The worksheet and summary statements. 4 hours lecture and 5 hours laboratory. *4 credits*



**BUS. 2 Elementary Accounting II**

(Prerequisite: Business 1) Partnership formation and operation. Division of profits. Financial statements. Methods of admitting a new partner. Dissolution and liquidation. Organization and operation of the corporation. Capital stock, bonds, mortgages, sinking funds and reserves. Corporate financial statements and their preparation. Changing from a partnership to a corporation. The voucher system. Accounting for the manufacturing concern. 4 hours lecture and 5 hours laboratory. *4 credits*

**BUS. 5 Business Law—Contracts**

Introduction to the study of law, its nature, administration and the various tribunals. Statutory and case law principles of contracts. Formation of a contract by offer and acceptance. Consideration. Capacity of parties. Unenforceable contracts. Statute of frauds. Performance of contracts. Assignments. *2 credits*

**BUS. 6 Business Law—Negotiable Instruments**

(Prerequisite: Business 5) Statutory and case law principles of negotiable instruments. Types of negotiable instruments. Issuance and negotiation. Holders in due course. Rights and liabilities of parties. Sales of personal property. Passage of title, risk of loss and seller's warranties. *2 credits*

**BUS. 21 Intermediate Accounting I**

(Prerequisite: Business 2) A continuation of first year accounting and its application in more complex business situations. Comprehensive study of the fundamental accounting processes. Detailed analysis of content and preparation of corporate balance sheets. 2 hours lecture and 3 hours laboratory. *2 credits*

**BUS. 22 Intermediate Accounting II**

(Prerequisite: Business 21) A comprehensive study of liabilities, capital stock and surplus. Errors and their correction. Statement analysis, special ratios and their measurement. Statement of application of funds. 2 hours lecture and 3 hours laboratory. *2 credits*

**BUS. 25 Business Law—Agency and Partnership**

(Prerequisite: Business 5) Statutory and case law principles of agency and partnerships. The creation of the agency relationship. Rights, duties, powers and liabilities of principal, agent and third parties. Partnership characteristics. Rights, duties, powers and liabilities of partners. Partnership dissolution. *2 credits*

**BUS. 26 Business Law—Corporations**

(Prerequisite: Business 25) Statutory and case law principles of corporations. Organization.

Rights, duties, powers and liabilities of directors, officers and shareholders. The legal aspect of corporation finance. Statutory and case law principles of real property. *2 credits*

**BUS. 101 Advanced Accounting**

(Prerequisite: Business 22) Special sales procedures. Installment sales, consignments, agency and branch accounting. Consolidated balance sheets and profit and loss statements. Fiduciary and budgetary accounting. Statement of affairs. Receivership. Estates and trusts. 4 hours lecture and 5 hours laboratory. *4 credits*

**BUS. 102 Cost Accounting**

(Prerequisite: Business 22) Basic principles of cost accounting and their practical application to cost accounting procedures. Process costs, specific order costs, and standard cost systems. Principles of estimated cost systems and the development of budgets. Specialized cost treatments. 3 hours lecture and 2 hours credit laboratory. *4 credits*

**BUS. 103 Money and Banking I**

(Prerequisite: Economics 24) A general survey of the field of money, credit and prices, and an introduction to the study of commercial banking. Functions of money, monetary standards and the present monetary system of the United States. History of banking in the United States. Banking transactions. *3 credits*

**BUS. 104 Money and Banking II**

(Prerequisite: Business 103) A detailed study of commercial bank operations. Bank deposits and reserves. Loans and discounts. Bank investments. Inter-bank relations. The clearing house and the par collection system. The Federal Reserve System. The banking system of the United States. Banking problems today. *3 credits*

**BUS. 105 Business Statistics I**

Statistical methods, their importance and use in the modern business enterprise. Statistical investigations. Use of mechanical equipment. Sampling and the concept of error. Tabular and graphic representation of statistical data. The frequency distribution. Averages. Dispersion and skewness. 2 hours lecture and 2 hours laboratory. *3 credits*

**BUS. 106 Business Statistics II**

Introduction to the theory of probability; index number construction. Current indices. Time series analysis. Related time series. Correlation and forecasting. Use of mechanical equipment to facilitate the computation of data. 2 hours lecture and 2 hours laboratory. *3 credits*



**BUS. 107 Marketing**

The distribution of a product from its very inception to its use by the ultimate consumer. Co-operative marketing, market research and analysis and the choice of marketing channels. Chains, wholesalers, jobbers and direct distribution to retailers and consumers. *4 credits*

**BUS. 108 Industrial Management**

The principles and problems of the business enterprise from the executive point of view. The economic background of management. The organization of the industrial plant and principles of management. Various processes and method of manufacture; visual aids and factory trips. *4 credits*

**BUS. 120 Auditing Theory**

(Prerequisite: Business 22) A review of "generally accepted accounting principles" and applicable auditing standards. Types of audits, audit programs, the preparation of reports and the ethics of the profession. Review of internal controls. Working papers. Types of reports. Summarization by a complete audit of a specific case. 3 hours lecture and 2 hours credit laboratory. *4 credits*

**BUS. 124 Federal Taxation**

(Prerequisite: Business 101) A. The federal system of taxation insofar as it concerns the individual taxpayer. A study of the Internal Revenue Code, regulations and selected materials relating to individual tax accounting. Pay-as-you-go Federal Tax System and required returns. Specialized tax accounting requirements for the individual businessman. B. A study of the Internal Revenue Code, relating to partnerships, estates and trusts, and corporations. Miscellaneous federal taxes and the Social Security System. 6 hours lecture. *6 credits*

**BUS. 126 Corporation Finance**

(Prerequisite: Economics 24) The financial structure and problems of the modern business corporation. Promotion. The security markets. Circulating capital. Determination, management and distribution of income. Financial problems of expansion. Failure, reorganizations, readjustments, and receiverships. Bankruptcy and liquidation. *4 credits*

**BUS. 165 Quality Control**

(Prerequisite: Business 106) An introduction to statistical methods of quality control. The theory of probability. The use of quality control charts

for variables and attributes. A study of distribution, the theory of sampling, and regression analysis. Planning, organizing and installing quality controls in typical manufacturing plants. Laboratory. *3 credits*

**BUS. 170 Marketing Management**

(Prerequisite: Business 107) Policy making and administration in the field of marketing. Functions of marketing management in determining and controlling policies. Areas of advertising, retailing, sales and sales management are integrated in the over-all marketing problem. *3 credits*

**BUS. 171 Financial Management**

(Prerequisite: Business 126) The policies and practices of the various financial institutions in our economy. Investment banking, mortgage and real estate banking, foreign exchange institutions, the securities and the money markets, insurance companies, mercantile credit institutions, and savings and loan associations. *3 credits*

**BUS. 172 Administrative Practices**

(Prerequisite: Business 108) Principles and techniques of administration. Practical operating problems in the fields of personnel, office, factory, credit, sales and traffic management. Practices and policies of administration of a modern business are integrated into the field of business management. *3 credits*

**BUS. 173 Statistical Analysis**

(Prerequisite: Business 106) Measures of central tendency and dispersion to business problems. Introduction to normal distribution, binomial distribution, Poisson distribution, and Chi Square distribution. Sampling. Problems of estimation; tests of hypotheses. Analysis of variance. Laboratory. *3 credits*

**BUS. 174 Time Series and Correlation**

(Prerequisite: Business 106) The methods of fitting trends, straight-line and curves, to time series. Cyclical movements and the reliability of seasonal indices. Correlation analysis, including simple, partial, and multiple methods. Laboratory. *3 credits*

**BUS. 175 Business Cycles**

(Prerequisite: Business 106) A critical inquiry into the nature, causes and control of the business cycle, with special reference to the analysis of business fluctuations, interpretation of current business conditions, and forecasting. Laboratory. *3 credits*



## ECONOMICS

Courses in economics are designed to provide the terminal student and the prospective graduate student with a basic understanding of the economic forces which are part of the structure of our society; to provide a solid foundation in economic theory for business administration students.

A major in Economics shall consist of Economics 23 and 24, 25 and 26, plus twenty-four (24) elective credits in economics, including Business 103, 104, 105, 106.

### ECON. 23 Principles I

An introduction to the principles of economic theory: production, consumption, exchange, and distribution of income. The economic organization of the United States. *3 credits*

### ECON. 24 Principles II

(Prerequisite: Economics 23) Analysis of national income and spending; monetary and fiscal policies; foreign exchange and trade; and modern capitalism and comparative systems. *3 credits*

### ECON. 25 Statement Analysis I

(Prerequisite: Economics 24) Meaning and purpose of accounting; detailed study of balance sheet, profit and loss statements, business papers, work sheet and summary statements. Open only to economics majors. *2 credits*

### ECON. 26 Statement Analysis II

(Prerequisite: Economics 25) Detailed study of classification and accounting procedure for partnerships and corporations. Analysis and interpretation of proprietorship, partnership and corporate financial statements. *2 credits*

### ECON. 102 History of Economic Thought

(Prerequisite: Economics 24) A survey of the origins of economic thought. Particular stress is placed on the economic and socio-political factors of the time. *3 credits*

### ECON. 103 Economic Geography

(Prerequisite: Economics 24) The relation of physical factors and economic conditions to the production and exchange of the world's leading commercial products. The major continents are studied with emphasis on their relationship to the United States. *3 credits*

### ECON. 104 United States' Economic History

The economic forces that conditioned the development of the United States prior to 1860. The emergence of large-scale enterprise. Development of the United States as a major world power. World War II and post-war problems. *3 credits*

### ECON. 105 & 106 Labor Legislation

(Prerequisite: Economics 24) The study of the economic forces which have engendered labor legislation, and a case analysis of the effect of resulting conditions on employer-employee relations. A survey of the Acts of Congress of the United States and of the legislature of the Commonwealth of Pennsylvania in the field of industrial relations. *6 credits*

### ECON. 150 Labor Problems

Study of labor as a social and economic group; methods of dealing with insecurity and inadequate income; labor-management relations. *3 credits*



## EDUCATION

The aims of the Department of Education are: 1. to develop in the individual teacher those professional qualities required for successful teaching; 2. to offer professional training for certification as an elementary or secondary school teacher; 3. to meet requests for specific courses by teachers in service; 4. to aid in the professional development of teachers by presenting a well integrated program of graduate studies leading to the Masters Degree.

Practice teaching will be arranged for students who meet course requirements and have other necessary qualifications.

bined with actual student teaching under expert supervision. Group conferences and personal interviews with the supervisors. *6 credits*

### EDUC. 21 Social Foundation of Education

The characteristics of the public school system in the United States; the role of education in our current society and the relationship of schools to other social institutions. *3 credits*

### EDUC. 22 Educational Psychology

Stresses growth and development, individual differences, intelligence, motivation, learning principles, transfer of training. *3 credits*

### EDUC. 102 History of Education

Traces educational development from primitive society. Greek and Roman education, the Renaissance and the changes induced by realism, philanthropic education, and the psychological and scientific movements. Contributions to modern educational practice are noted. *3 credits*

## SECONDARY EDUCATION

### EDUC. 103 Principles and Practices of High School Teaching

(Corequisite: Education 104. Prerequisites: 21-22) Curriculum, principles and methods of teaching such as socialized recitation, project and problem methods, visual instruction, differentiated instruction and assignment. *3 credits*

### EDUC. 104 Special Methods of Teaching in High School

(Corequisite: Education 103. Prerequisites: Education 21-22) The selection and organization of materials of high school courses which are taught in laboratory practice; special methods of instruction for various subject matter fields. *3 credits*

**EDUC. 105 Observation and Practice Teaching**  
(Prerequisites: Education 21-22, 103-104) Observation and study of classroom teaching are com-

## ELEMENTARY EDUCATION

### EDUC. 120 General Methods of Teaching

Lesson planning, motivation, assignment, testing, evaluation and records, question, unit, problem, project, activities, audio-visual aids, systematic teaching, practice and drill at the elementary level. *3 credits*

### EDUC. 121 Child Psychology

The growth and development of the child including the physical, social, emotional, intellectual, moral and religious, and language changes from age to age. *3 credits*

### EDUC. 122 Elementary School Curriculum

The development of the elementary school curriculum, its relation to society and the individual child. Content and methods in art, music, science, language, etc., with reference to the State Bulletins. *3 credits*

### EDUC. 123 Arts and Crafts for Teachers

Methods and techniques of art instruction for different age levels and classroom situations—elementary, secondary, and special classes are stressed. Sources of art materials and their procurement and selection. Work units integrating art with subject matter. *3 credits*

### EDUC. 124 Teaching of Reading

Modern reading materials and techniques in the elementary grades. Word-recognition skills, development of vocabulary, wide understanding, recreational reading as well as reading disabilities and their correction. *3 credits*



**EDUC. 125 Teaching of Arithmetic**

Principles, materials and methods of instruction in elementary arithmetic; techniques for developing units of work and for presentation of quantitative data at the elementary level. *3 credits*

**EDUC. 126 Teaching Science**

Science in elementary education, desirable experiences for science teaching and learning, classroom procedures, instruments, learning activities, and teaching materials. *3 credits*

**EDUC. 127 Teaching of Health and Physical Education**

First aid, healthful habits and attitudes, safety precautions involving the child, games and physical education activities. *3 credits*

**EDUC. 128 Practice Teaching and Observation**

Observation and classroom teaching under the guidance of expert cooperating teachers. Personal interviews and group conferences with the supervisor of practice teaching. *6 credits*

**EDUC. 129 Teaching Language Arts**

Developing language arts in elementary school pupils emphasizes speaking, listening, reading, written expression, spelling and handwriting. *3 credits*

**EDUC. 130 Teaching Social Studies**

Aims and objectives, materials, methods of teaching and learning, evaluation, and desired outcome of the social studies. Problems, units, cooperative activities, projects and practices. *3 credits*

**PSYCHOLOGY**

The faculty in Psychology seeks to: 1. prepare the student contemplating graduate study in psychology with a basic, systematic knowledge of method and content from experimental psychology; 2. complement the offerings of other departments with courses of value to general education or of worth to the specific majors of these departments.

The major in psychology will complete twenty-four (24) upper division credits that include the following courses: Psychology 121, 122, 124, 125, 126, 129, 130 and Education 121. He may also elect courses in addition to the required concentration, but not in lieu of it from the psychology electives: 120, 123, 127, 128 and Education 121, or from such cognate electives as Biology 21, 22 and 120; Sociology 104; Physics 1 and 2; Mathematics 13, 14, 21 and 22.

**PSYCH. 120 History of Psychology**

(Prerequisites: Psychology 121-122) The more important theoretical systems, experiments and personalities in the development of modern psychology as a science. *3 credits*

**PSYCH. 121 General Experimental Psychology**

The basic concepts of experimental psychology, emphasizing facts, principles and methods. *3 credits*

**PSYCH. 122 Experimental Psychology: Laboratory**

(Prerequisites: Psychology 121, 129) Sensation, perception, memory, reasoning. Laboratory experiments dealing with these topics. Lecture 2 hours and laboratory 2 hours. *3 credits*

**PSYCH. 123 Mental Hygiene**

Psychological principles applied to adjustment and developing a well-integrated personality. Factors

influencing behavior, dynamics and motivation of behavior; varieties of adjustment. *3 credits*

**PSYCH. 124 Psychological Testing**

(Prerequisites: Psychology 121, 129) Provides a thorough grounding in principles of testing and measurement; introduces the student to tests of general scholastic ability, special abilities, tests of proficiency, interests and personality. *3 credits*

**PSYCH. 125 Abnormal Psychology**

Predisposing and precipitating factors in the development of neuroses and psychoses; classifications of mental disorders; biological, social and cultural influences; methods of therapy. *3 credits*

**PSYCH. 126 Social Psychology**

(Prerequisite: Psychology 121) Social aspects of personality; the development and manifestations of social awareness; suggestion, imitation, group behavior, and the individual mechanisms of social adjustment. *3 credits*

**PSYCH. 127 Industrial Psychology**

The principles and techniques in selection and management; job analysis; occupational descriptions; employment procedures; interviews, tests, inventories, counseling; industrial training, promotions, transfers, prevention of accidents; management employee relations. *3 credits*

**PSYCH. 128 Introduction to Clinical Psychology**

(Prerequisites: Psychology 121, 125, 126) The principal diagnostic and treatment procedures and

resources used in clinical settings; the professional duties, skills and ethics of the clinical psychologist. *3 credits*

**PSYCH. 129 Elementary Statistics**

Frequency distributions; measures of central tendency and variability; normal probability curve; elementary sampling; correlation. *3 credits*

**PSYCH. 130 Senior Seminar in Psychology**

Extensive out-of-class reading assignments, class reports and discussions of pertinent issues in contemporary psychology which cut across course boundaries. (For senior psychology majors). *3 credits*

**ENGR. 13 Engineering Graphics I**

The drawing of objects in orthographic, isometric, oblique, sectional and auxiliary views. Dimensioning, fasteners, welding and assembly drawings. Orthographic projection, isometric and oblique views. Charts, graphs and nomographs. Fundamental applications of the slide rule. 6 hours drafting room practice and 1 hour lecture. *3 credits*

**ENGR. 21 Engineering Mechanics-Statics**

(Prerequisite: Physics 18; Corequisite: Mathematics 21) Various types of force systems; resultants and conditions of equilibrium; stress analysis of the parts of different types of structures by graphical, algebraic and vector methods; frictional forces; centroids, and second moments of areas and solids. *4 credits*

**DEPARTMENT OF ENGINEERING**

Mr. Plonsky, *Chairman*

The objective of the Engineering Department is to introduce the student into the highly technical training necessary for all phases of the engineering profession. Care is taken to provide liberal arts training as well as the technical.

**ENGR. 22 Engineering Mechanics-Dynamics**

(Prerequisite: Engineering 21; Corequisite: Mathematics 22) Kinematics of particles and rigid bodies which includes linear, curvilinear, angular and relative motions; inertia, forces, impulse, momentum, work, energy and power; mechanical vibrations. *4 credits*

**ENGR. 23 Plane Surveying**

(Prerequisite: Mathematics 13) The Dumpy and Wye levels, transits, their use, care and adjustment. Running of closed and open traverses, determination of the azimuth of a course by solar observation, stadia shots for "topo" and location data, bench mark and profile leveling, staking out of simple curves. Calculation of areas by co-ordinates, DMD, and planimeter; calculation of a vertical curve; plotting of a map from a deed; earth-work calculations. 1½ hours lecture and recitation, 4½ hours field work. *3 credits*



**ENGR. 24 Engineering Graphics II**

(Prerequisite: Engineering 13) The geometric method of projection of points, lines and planes and the application of these methods to graphical solution of engineering problems involving lines, planes and solids; truncations and intersections of solids leading to the development of surfaces and traces of perspective views; graphical differentiation and integration. One hour lecture, six hours drafting room practice. *3 credits*

**ENGR. 25 Engineering Materials**

(Prerequisite: Chemistry 2) The materials that are used in engineering construction and fabrication, their source, manufacture, properties, methods of testing, uses and limitations. Metals, cementing materials, wood, rubber, glass, plastics, corrosion and protective coverings. *3 credits*

**ENGR. 43 Strength of Materials**

(Prerequisites: Engineering 21, Mathematics 22) Stresses and strains in compression, tension and shear. Torsion in shafts. Joints. Shear and bending moment equations and diagrams. Stresses and deflection in beams. Beams of two materials. Resilience. Columns. *3 credits*

**ENGR. 101 Elements of Electrical Engineering**

(Prerequisite: Physics 12 or 20) The application of the principles of electric and magnetic circuits to the theory and performance of electrical machinery. Experimental work in the electrical machinery laboratory. 3 hours lecture and 3 hours laboratory. *4 credits*

**DEPARTMENT OF ENGLISH**

Fr. Grady, S.J., Dr. Lodge, *Co-Chairmen*

The aim of the Department of English is to furnish the student with a balanced program in English which will realize the objectives of a liberal arts college. This program has a threefold overall objective: the practical development of the communication skills of the individual; the practical development of his critical and analytical ability; and his cultural development.

All students are required to take English 3-4, 5-6, and 21-22. To major in English the following additional courses are required: English 103, 105, 106, 111, 112, 113, plus six additional upper-division credits.

**Fundamentals in English**

Mastery of the fundamentals of English. For students failing to achieve the required score in English entrance examination. Three periods weekly—No credit—Fee \$69.00.

**Developmental Reading**

Required of students who show deficiency in reading. One hour weekly—No credit—Fee \$23.00.

**ENGL. 3 & 4 Public Speaking**

Principles of oral expression, elements of argumentation, preparation and presentation of formal and informal speeches. *2 credits*

**ENGL. 5 & 6 Composition and Rhetoric**

Mastery of the techniques of communication, the principles of literary structure, the qualities of style. Exposition, narration and description. Stressing the inter-relationship of logic and language, rhetoric discovers the rules that underlie effective

expression of ideas; develops the student's skill in applying these rules, particularly to argumentation and persuasion. *6 credits*

**ENGL. 21 & 22 Poetic and Dramatic Literature**

Beowulf to Dryden; Pope to Eliot, Nature, elements and development of poetic types; principles of versification; the structure and chronological development of dramatic literature. *6 credits*

**ENGL. 101 British Literature—XVIIth Century**

Critical and appreciative study of the outstanding writers of the Jacobean and Restoration periods. *3 credits*

**ENGL. 102 British Literature—XVIIIth Century**

Critical and appreciative study of the outstanding writers of the Augustan and Johnsonian Ages. *3 credits*

**ENGL. 103 The Romantic Period**

Critical and appreciative study of the outstanding writers of the Age of Romanticism. *3 credits*

**ENGL. 104 The Victorian Era**

Critical and appreciative study of the outstanding writers of the Victorian period. *3 credits*

**ENGL. 105 American Literature to 1900**

Survey of the development of the body of distinctively American Letters through the XVIIIth and XIXth centuries. *3 credits*

**ENGL. 106 American Literature After 1900**

Survey of the more mature and nationally conscious American Literature which emerged after World War I. *3 credits*

**ENGL. 107 The Novel: Chaucer to Scott**

Development of the novel form in the English language, British and American, from Chaucer to Scott. *3 credits*

**ENGL. 108 The Novel: Dickens to the Present**

Study of the major novelists, British and American, from Dickens to the present. *3 credits*

**ENGL. 109 Forms of Drama: Aeschylus to Johnson**

Study of the development of dramatic forms from the Greek classic through the Medieval plays to the fluid plays of the Elizabethan era. *3 credits*

**ENGL. 110 Forms of Drama: Sheridan to Shaw**

Study of the development of dramatic forms from post-Elizabethan period to the "problem play" after Ibsen and the growing attempts to "break through the proscenium" to wider stage horizons. *3 credits*

**ENGL. 111 Shakespeare: Tragedies**

Critical and appreciative study of five major tragedies and five of the principal chronicle plays. *3 credits*

**ENGL. 112 Shakespeare: Comedies**

Critical and appreciative study of the major comedies and of the comic sequences in the chronicle plays. *3 credits*

**ENGL. 113 Chaucer**

Study of the historical, social and literary background of Geoffrey Chaucer with emphasis on his *Canterbury Tales*. *3 credits*

**ENGL. 115 Journalism**

Survey of the history and development of modern journalism: journalistic terminology; newspaper writing; and other fundamentals. *3 credits*

**ENGL. 116 Journalism**

(Prerequisite: Engl. 115) The preparation of news-copy; editing copy for publication; preparation of feature and special articles; and other practical techniques. *3 credits*

**ENGL. 117 & 118 Advanced Composition and Creative Writing**

The inter-relationship of grammar, logic, rhetoric, semantics and criticism in the communication of ideas. The techniques of writing literary types for publication. *6 credits*

**ENGL. 121 Contemporary Poetry**

Survey and study of major contemporary poets of England and America. *3 credits*

**ENGL. 122 English Seminar**

For students majoring in English Literature. Discussion of assigned topics and areas of reading. *Variable Credit*

**ENGL. 131-132 Masterworks of Western Civilization**

Study of masterpieces of literature, from the Hebrew Old Testament and classic Greek to the Modern European, to illustrate the development of western civilization and the effect on social and political structures, economics, art forms, as well as literature. *6 credits*

## DEPARTMENT OF HISTORY AND POLITICS

Dr. McGuigan, *Chairman*

## HISTORY

The department aims: 1. to train the student in solid historical methodology; 2. to present history as the study of interdependent human activities and concrete events which have social significance; 3. to engender an intelligent and critically sympathetic understanding of various civilizations and cultures.

For the History major, History 1-2, 3-4, plus twenty-four (24) credit hours from upper-division courses are required. The department strongly recommends History 110, 111, 118, 119, 126, 127, and 120 or 132 as the courses best designed to give the student that comprehensiveness of understanding which constitutes one of the major aims of the department.

**HIST. 1 & 2 History of the United States**

The United States from the time of its European beginnings to the present, with special emphasis on the history of Pennsylvania; colonial origins to the end of the Civil War; reconstruction to the present. (History 1 is prerequisite to History 2.)

6 credits

**HIST. 3 & 4 Europe, 1500 to the Present**

European history with concentration upon the political aspects of European development. The rise of national monarchies; political developments; industrialism; the new nationalism and liberalism. (History 3 is prerequisite to History 4.)

6 credits

**HIST. 110 & 111 Medieval History**

A survey of medieval political and religious institutions. The origins and diffusion of Christianity; the contribution of imperial Rome; the emergence of political authority; the spread of learning under monastic influence; the role of the Papacy; the achievements of the Crusades. Decline of the Eastern Empire; the Holy Roman Empire; the Church in the period of Innocent III, the Renaissance of the twelfth and thirteenth centuries; the decline of medieval Europe before the secularization of thought in the field of politics, economics and religion.

6 credits

**HIST. 112 Renaissance and Reformation**

An intensive study of Europe from the fourteenth to the middle of the seventeenth century. Humanism, the new wealth and the bourgeoisie; breakdown of medieval unity. The causes of the Protestant Revolution. The Catholic Reformation, religious wars, Peace of Westphalia.

3 credits

**HIST. 114 French Revolution and Napoleon**

Historical antecedents of the Revolution; the philosophies; republicanism and the fall of the

monarchy; Reign of Terror; France and Europe; the Directory; rise of Napoleon; the Consulate; internal achievements; intervention in Europe; significance of the Spanish and Russian campaigns; War of Liberation; an assessment of its influence on modern trends.

3 credits

**HIST. 116-117 Nineteenth Century Europe**

The Congress of Vienna and the European restoration; the rise of national sentiment and its expression in revolutions; the Industrial Revolution and its social, political and colonial consequences. The unification of Italy and Germany; Russia; Mediterranean politics and the Eastern Question; international alliances and rivalries.

6 credits

**HIST. 118 & 119 Contemporary Civilization in Western Europe**

An analysis of the major economic, social and cultural aspects of European life since 1500. The Protestant Revolution; decline of medieval religious and economic unity; commercialism and the bourgeoisie; the intellectual revolution; antecedents of the French Revolution. Liberalism and reactions; fruits of the industrial revolution; march of the new sciences; socialism and communism; nationalism and imperialism; the twentieth century inheritance.

6 credits

**HIST. 120 & 121 American Diplomatic History**

The State Department and its relation to other policy-forming agencies of the federal government. Diplomatic activities prior to 1789; the Louisiana Purchase; War of 1812; the Monroe Doctrine; Manifest Destiny. Pan-Americanism, Cuba and the Caribbean, World War I; problems in the inter-bellum period; today's challenges and attempted solutions. United Nations Organization.

6 credits



**HIST. 122 & 123 American Constitutional and Legal History**

The juridical concepts of the colonial and revolutionary periods; backgrounds of the Federal Convention; the nature of the Constitution, its interpretation by Marshall and Taney. The constitutional problems occasioned by the Civil War; the new amendments; the role of the States in a Federalist system. Key cases will be analyzed in detail and set in their proper historical perspective.

*6 credits*

**HIST. 124 & 125 American Political and Social Thought**

An inquiry into the major philosophies which helped shape our institutions. Puritan concepts; views of the Independents; pre-Revolutionary society and thought and the notion of independence; the Constitution as it represents a compromise between the conservative and liberal traditions; Jeffersonian and Jacksonian democracy; social, economic, and political ramifications of the slavery question. Triumph of the nationalist view; recent tendencies; liberty in American society.

*6 credits*

**HIST. 126 & 127 American Civilization**

An analysis of leading economic, social and cultural aspects of American life. The economic, religious and intellectual bases of colonial American life; impact of the Revolution; sectional differences; growth of democracy and the reform move-

ments. The growth of industry, agriculture and the agrarian discontent; the disappearance of the frontier; labor and immigration; literature and the arts; religious tendencies, diffusion of knowledge.

*6 credits*

**HIST. 128 & 129 Special Topics in American History**

An analysis of selected topics in American political internal history from the Colonial Period to the end of the Nineteenth Century. Extensive readings are required. Restricted to History Majors.

*6 credits*

**HIST. 130-131 Twentieth Century United States**

An intensive study of American development from 1900 to the present. Stress will be placed on the Roosevelt Era and its Progressivism, Wilson's New Freedom, diplomacy of the First World War, the return to "normalcy," the Great Depression and the New Deal, Roosevelt and world politics, and origins and consequences of World War II.

*6 credits*

**HIST. 132 Co-ordinating Seminar**

Intensive readings and reports on selected problems in American history. In all discussions an attempt will be made to integrate information in such terms as will give a unified picture of American life and institutions. Open only to senior History majors or by special permission of the Chairman of the Department.

*3 credits*

**POLITICAL SCIENCE**

For the Political Science major the Department aims to accomplish the following objectives: 1. to give the student a thorough understanding of the nature and purposes of civil society; 2. to impart a sound knowledge of the philosophical basis of democracy; 3. to enable him to appreciate the problems of his own government at work and; 4. to relate the American system to the governments of other states in the international community.

For the Political Science major History 1-2; 3-4; Political Science 101-102 plus eighteen (18) credit hours from upper division courses are required.

**POL. SCI. 101 & 102 American National Government**

An analysis of society, state, authority and common good. Forms of government. The constitution, federalism, structure, operations and functions of the three branches.

*6 credits*

**POL. SCI. 105 State Government**

The natural constitutional position of the states and the changing federal-state relationships. State governments in actual operation. Emphasis on Pennsylvania and actual problems of procedure and policy.

*3 credits*



**POL. SCI. 106 Local Government**

Types of local government, evolution of the American township, county, borough and city; participation in local government and politics; constitutional and statutory limitations on local governments; functions of local officials, budget, personnel, local taxation and assessment, purchasing, indebtedness; improvement in structure and operation of local governments. *3 credits*

**POL. SCI. 107 Public Administration**

Nature of public administration; structures and limitations imposed through legislative statutes and appropriations; staff organization and flow of command; employment policies, personnel training and management; employee organization; public relations. *3 credits*

**POL. SCI. 120-121 American Foreign Relations**

This course is identical with History 120-121. *6 credits*

**POL. SCI. 122-123 American Constitutional and Legal History**

This course is identical with History 122-123. *6 credits*

**POL. SCI. 124-125 American Political and Social Thought**

This course is identical with History 124-125. *6 credits*

**POL. SCI. 126 The Political Parties of the United States**

An analysis of the origins, nature and functions of parties under our American system of government; differences between the English and American concepts. Jeffersonianism versus Hamiltonianism; sectionalism and pressure groups; splits in party organization prior to the Civil War; impact of the new industrial order on political alignments; the role of third parties in the United States; current stresses and strains on party organizations. *3 credits*

**DEPARTMENT OF LANGUAGES AND FINE ARTS**Mr. Cimini, *Chairman***CLASSICAL LANGUAGES**

Courses in Classical Languages give the student a solid foundation in Latin and Greek to engender an appreciation of the liberal aspects of Classical studies.

Classics majors must present a minimum of twenty (20) semester hours in upper division courses including Latin 101-102.

Students majoring in other fields satisfy the Latin requirement of the Bachelor of Arts Course by following one of the sequences: Latin 3-4; 21-22 or Latin 21-22; 101-102. Students commencing their study of Latin at the University, however, may complete the Latin requirement by taking Latin 3-4; 21-22 in sophomore and junior year.

**GREEK****GREEK 1 & 2 Elementary Greek**

An intensive course in the fundamentals of Classical Greek grammar. *8 credits*

**GREEK 21 Plato**

Reading of the Apology. A philosophical, historical and literary analysis of Plato and Socrates. Supplementary reading in the Crito and Phaedo. *3 credits*

**GREEK 22 Euripides**

Reading and analysis of the Medea with an evaluation of the art and thought of Euripides. *3 credits*

**GREEK 31 Sophocles**

Evaluation of Sophocles as a poet, dramatist and thinker through a study of the Oedipus Tyrannus. *3 credits*

**GREEK 32 Demosthenes**

An analysis of the De Corona as a model of rhetoric. Consideration of the rhetorical norms established by Aristotle. *3 credits*

**GREEK 101 Homer**

Selected readings from the Iliad and the Odyssey. An appreciation of the diction, thought and beauty of Homer. *3 credits*



**GREEK 102** Thucydides

Evaluation of fifth century Athens and of Thucydides as philosopher and historian through a reading of the History of the Peloponnesian War.

*3 credits*

**GREEK 103** Greek Philosophy

Greek philosophical thought from Thales to the Neoplatonism of Plotinus.

*3 credits*

**GREEK 104** Christian Greek Literature

Selections from St. Ignatius of Antioch, St. Polycarp and St. Basil. Lectures on the development of Christian Greek literature.

*3 credits*

**GREEK 109 (110)** Readings in Greek Literature

Selections from Greek writers to suit the student's special interest.

*3-6 credits*

**LATIN****LATIN 1 & 2** Elementary Latin

An intensive course in the fundamentals of Classical Latin grammar. Four meetings per week. No college credit is offered for this course.

**LATIN 3 & 4** Intermediate Latin

Review of fundamentals. Composition. Reading of selections from Cicero and Virgil.

*8 credits*

**LATIN 21** Livy and Virgil

Selections from Livy I and XXI, and from Books VII-XII of Virgil's Aeneid. Exercises in composition.

*4 credits*

**LATIN 22** Horace and Catullus

Lyric poetry illustrated by the Odes of Horace

and selected poems of Catullus. Exercises in composition.

*4 credits*

**LATIN 101** Horace and Juvenal

A study of Roman satire revealing the life, manners and thought of the times. Exercises in composition.

*4 credits*

**LATIN 102** Cicero: Rhetoric

The Pro Lege Manilia and Pro Milone are studied from the standpoint of rhetorical analysis. Exercises in composition.

*4 credits*

**LATIN 103** Cicero and Lucretius

Selections from the Tusculan Disputations and the De Rerum Natura illustrate contrasting developments in Roman thinking. The course includes a brief survey of ancient philosophy.

*3 credits*

**LATIN 104** Christian Latin Literature

Selections from Christian Latin writers with concentration on the Confessions of St. Augustine. Lectures on the development of Christian Latin literature.

*3 credits*

**LATIN 105** Plautus and Terence

Reading of the Duo Captivi and Phormio. Lectures on the development of Roman comedy.

*3 credits*

**LATIN 106** Tacitus

The Agricola and Germania are read. A study of style and content in Tacitus. Reference to the Annals and Histories.

*3 credits*

**LATIN 109 (110)** Readings in Latin Literature

Selections from Latin writers to suit the student's special interest.

*3-6 credits*

**MODERN LANGUAGES**

Courses in Modern Languages undertake: 1. To give the student the requisite skills in reading, writing, and speaking foreign languages; 2. To train the student in logic and precision of thought and expression through a comparative study of his own and a foreign language; 3. To develop the student's aesthetic appreciation and critical ability through reading of the best foreign authors; 4. To give an insight into the evolution of European thought, history and culture as reflected in literature.

The College Entrance Examination Board Achievement Tests are used as a placement instrument for students who have had two years or more of a modern foreign language in high school. Placement in the intermediate course or the elementary course will depend on these test scores. Students who must take the elementary course in freshman year will receive no college credit and must attend Summer school before sophomore year to make up their deficiency.

A major in a modern foreign language requires the completion of the intermediate course plus twenty-four (24) credits in upper division courses.

## FRENCH

### FRENCH 1 & 2 Elementary French

A course designed to impart a solid foundation in grammatical principles and the mastery of a basic vocabulary; reading and composition, especially written. *6 credits*

### FRENCH 21 & 22 Intermediate French

(Prerequisite: French 1-2 or equivalent) A course which includes a review of French grammar and an introduction to French literature and civilization by reading and discussion of appropriate works. *6 credits*

### FRENCH 101 & 102 Short Story

Reading and discussion of representative works of short fiction from the 18th Century to the present day. *6 credits*

### FRENCH 103 & 104 XVII Century Literature

A study of the classical movement in French thought and culture, with emphasis given to such authors as Corneille, Racine, Molière and Boileau. *6 credits*

### FRENCH 105 & 106 XVIII Century Literature

The course of the French Enlightenment from the libertins to the Revolution. *6 credits*

### FRENCH 107 & 108 XIX Century Literature

The main currents of French literature and thought from the romantic reaction to the emergence of symbolism. *6 credits*

### FRENCH 110 & 111 History of French Literature

A survey of French literature from the twelfth century to the contemporary period, studied with relation to the aesthetic, philosophical, political, social and economic development of French civilization. *6 credits*

### FRENCH 115 & 116 History of French Civilization

A course given jointly by the Department of Modern Languages and of History; the study of the role of France in the intellectual development of the West. *6 credits*

### FRENCH 123 & 124 Advanced Composition and Conversation

An intensive course in French composition which includes numerous translations from the English, dictation exercises, review of French grammar, and conversation. *6 credits*

### FRENCH 125 Scientific French

A course designed to prepare the student for library research in French in the fields of the biological and physical sciences. Readings. *3 credits*

### FRENCH 130 Thesis Research

Open to students of proven ability in French. Assignment of the problem to be arranged in each case. *Variable Credit*

### FRENCH 127 & 128 Advanced Conversation and Composition

A course designed to develop conversational ability in the student. The method followed includes extensive use of recordings and texts, public speaking, idiom study, and composition. *6 credits*

## GERMAN

### GERM. 1 & 2 Elementary German

A complete course in the fundamentals of the German language. Emphasis on reading of graded texts, with written, oral and aural exercises. *6 credits*

### GERM. 21 & 22 Intermediate German

(Prerequisite: German 1-2 or equivalent) Reading from modern authors of moderate difficulty. Oral and written exercises. Systematic review of German grammar. *6 credits*

### GERM. 103 & 104 Medieval Literature

Lectures in German, with collateral readings in modern German of important authors and works. Discussion, written and oral reports. *6 credits*

### GERM. 105 & 106 XVIII Century Literature

A study of the lives and works of Lessing, Goethe, and Schiller, including a survey of the intellectual background of the period. *6 credits*

### GERM. 107 & 108 XIX Century Literature

German Dramas and Novellen by selected authors. *6 credits*

### GERM. 123 & 124 Advanced German

Selected texts in prose and poetry. Advanced practice in conversation and composition. *6 credits*

### GERM. 125 & 126 Scientific German

Designed to prepare the preprofessional and science student for further work in German in his specialized scientific field. *6 credits*

## SPANISH

### SPAN. 1 & 2 Elementary Spanish

Fundamentals of grammar, drill in pronunciation, conversation, easy readings and written exercises. *6 credits*

### SPAN. 21 & 22 Intermediate Spanish

(Prerequisite: Span. 1-2 or equivalent) Grammatical review, written and oral composition. Selected cultural readings of intermediate difficulty. *6 credits*

### SPAN. 101 & 102 The Modern Novel

The short story and novel of Spain and Spanish-America in the late 19th and early 20th centuries. Readings of most important authors and works. Lectures and discussions in Spanish. *6 credits*

### SPAN. 104 & 105 Commercial Spanish

An introduction to commercial terms. Writing of letters and other business forms in Spanish. Commercial readings on Latin-American countries. *6 credits*

### SPAN. 106 & 107 The Golden Age

The development of the novel, with the culmination of all forms in Cervantes; and of the drama, reaching its perfection in De Vega and Calderón. *6 credits*

### SPAN. 108 Conversational Spanish

A course designed to enable the student to express himself in Spanish with clarity and fluency. Stress is placed on pronunciation, idiomatic use of the language, and practice in oral composition. *3 credits*

### SPAN. 109 & 110 History of Spanish Civilization

A survey of the political, artistic, literary and scientific progress of Spain, with readings of each period. *6 credits*

### SPAN. 123 & 124 Advanced Composition and Conversation

A thorough study of Spanish grammar; composition, oral and written, with aim of developing ability to write clear and fluent Spanish. Practice in oral composition. *6 credits*

## ITALIAN

### ITALIAN 1 & 2 Elementary Italian

A course in Italian for beginners. Principles of Italian grammar, drill in pronunciation; conversation and easy readings. *6 credits*

### ITALIAN 21 & 22 Intermediate Italian

(Prerequisite: Italian 1 & 2, or equivalent) Selected modern readings of intermediate difficulty. Written and oral composition. *6 credits*

## POLISH

### POLISH 1 & 2 Elementary Polish

Fundamentals of Polish grammar, reading and composition in modern Polish. *6 credits*

### POLISH 21 & 22 Intermediate Polish

(Prerequisite: Polish 1 & 2, or equivalent) The course includes grammatical review, written and oral composition; selected modern readings of intermediate difficulty. *6 credits*

## RUSSIAN

### RUSSIAN 1 & 2 Elementary Russian

Principles of the grammar of Great Russian. Aim: a speaking and written knowledge of standard Russian by reading, conversation, and written and oral exercises. *6 credits*

### RUSSIAN 21 & 22 Intermediate Russian

(Prerequisite: Russian 1-2 or equivalent) Further vocabulary building, review grammar, oral and written exercises and composition, enlarged reading ability based on graded texts and selected modern prose of intermediate difficulty. *6 credits*

## Fine Arts

The courses in Fine Arts provide a cultural background in art and music, both appreciative and historical, affording a knowledge of canons for criticism and enjoyment.

### ART 5 Art Appreciation

The interpretation and appreciation of architecture, sculpture and painting. Aegean civilization. Greece and Rome. Early Christian and Byzantine art. Romanesque and Gothic art. *2 credits*

### ART 6 Art Appreciation

Renaissance architecture and sculpture. Italian schools of painting. Baroque art. Painting in the Low Countries and England. French painting from classicism to post-impressionism. Modern trends. *2 credits*

### ART 7 Music Appreciation

Introduction to elements and forms. Analysis and interpretation of selected works. Survey of music before Bach. *2 credits*

### ART 8 Music Appreciation

Historical survey from Bach to the present day. Additional unit on music in America. *2 credits*

(For other art courses, confer the Evening Sessions' Catalog.)



## DEPARTMENT OF MATHEMATICS

Mr. Bartley, *Chairman*

For the Arts and Social Science students the objectives of the department are: 1. to train the students in the basic and necessary skills of mathematics which will be required in non-technical pursuits; 2. to bring out the cultural and applied values of mathematics; and 3. to show the dependence of other branches of knowledge on mathematics. In addition, in the instruction of engineering and science students for whom mathematics is a tool subject, the objectives of the department are: 1. to develop skill and accuracy in mathematical operations; and 2. to familiarize the students with the methods of mathematical analysis. Finally, for those students who show special aptitude for mathematics it is the objective of the department to prepare them to pursue advanced work in this field.

A student may major in mathematics either in the A.B. sequence or the B.S. sequence. The requirements for a major within the A.B. sequence include the following courses: Mathematics 13-14; 21-22; 101 plus fifteen additional upper division credits in mathematics.

The requirements for a major in mathematics within the B.S. sequence include Chemistry 1-2; Physics 11-12; 106-107; Mathematics 13-14; 21-22; 101-102; 103-104; 106-107; 108-109.

Students who have taken advanced work in high school covering the matter presented in Mathematics 13-14 may be advanced either one semester or a whole year on the basis of a qualifying examination given by the University. For advancement beyond this, the student must take the Advanced Placement Examination in Mathematics administered by the College Entrance Examination Board.

**MATH. 0 Basic Mathematics**

An intensive review of college preparatory mathematics covering algebra and trigonometry. Required of all students who need additional preparation as determined by entrance tests in mathematics. Three periods weekly—No Credit—Fee \$69.00.

**MATH. 7-8 Fundamentals of Mathematics**

A terminal course covering algebra, trigonometry and analytic geometry. *6 credits*

**MATH. 13 Freshman Mathematics**

An intensified course covering the topics of algebra and trigonometry. *4 credits*

**MATH. 14 Introduction to Analysis**

Covers the traditional course of analytic geometry using set and vector notation. *4 credits*

**MATH. 21-22 Analysis**

(Prerequisite: Mathematics 14, or equivalent)  
An integrated course covering the topics of calculus using modern methods. *8 credits*

**MATH. 31 Statistical Mathematics**

A course designed to present fundamental concepts necessary in business statistics. (Open to students in business administration only.)

*4 credits***MATH. 101 Differential Equations**

(Prerequisite: Mathematics 22) A treatment of ordinary differential equations with applications.

*4 credits***MATH. 102 Vector Analysis**

(Prerequisite: Math. 22) The theory of vectors and their applications to the solution of mathematical and physical problems. *3 credits*

**MATH. 103 Advanced Differential Equations**

(Prerequisite: Mathematics 101) The treatment of special differential equations and partial differential equations and their applications. *3 credits*

**MATH. 104 Statistical Analysis**

(Prerequisite: Mathematics 22) Curve plotting, frequency curves, averages, measures of dispersion, theory of correlation. Applications to the natural and social sciences. *3 credits*

**MATH. 105 History of Mathematics**

(Prerequisite: Mathematics 22) Treats of the development of mathematics from earliest times through the calculus. *3 credits*

**MATH. 106-107 Advanced Analysis**

A continuation of the calculus beyond infinite series. It will include implicit function theory, Fourier series, gamma functions, Bessel functions, Laplace transformations, complex variables, and calculus of variations. *6 credits*

**MATH. 108 Modern Algebra**

(Prerequisite: Mathematics 22 or permission of department head) Fundamental ideas and properties of groups, rings, fields, polynomials over a field. *3 credits*

**MATH. 110 Applied Mathematics**

(Prerequisite: Mathematics 101) This course covers advanced differential equations. Fourier

series, Laplace transformations, vector analysis, and boundary value problems. *4 credits*

**MATH. 111 Linear Algebra**

(Prerequisite: Mathematics 108) Vectors, n-dimensional vector space. Determinants, matrices. Transformations, quadratic forms and applications in 3-space. *3 credits*

**MATH. 113-114 Mathematics Seminar**

(Permission of the department head required) Designed to allow the student of demonstrated ability to cover modern developments of algebra and analysis without benefit of formal lectures. *Variable Credit*

**MATH. 115 Thesis**

(Prerequisite: 24 credits in mathematics) A student's results of the investigation of a specific mathematical topic. *Variable Credit*

**DEPARTMENT OF MILITARY SCIENCE**

Lt. Col. Brady, *Chairman*



The primary objective of the ROTC program is to produce junior officers, who, by their education, training and inherent qualities, are suitable for continued development as Regular or Reserve Officers in the United States Army.

All physically qualified students regularly enrolled in the University, except those excused from the requirement by the President of the University and those excused by reason of prior military service, are required to complete the first two years, the Basic Course, of the ROTC program.

Enrollment in the Advanced Course is limited to those students who have successfully completed the Basic Course or are veterans of the Armed Forces. These students volunteer for further ROTC training and are selected by the President of the University and the Professor of Military Science. With successful completion of the Advanced Course, which includes a six week ROTC summer camp at the end of the Junior year, and upon graduation from the University, the graduate is offered a Regular Army or a Reserve Commission. In the case of those receiving a Reserve Commission as a Second Lieutenant in the United States Army, the period of active duty is either six months or two years, depending upon selection by the individual and the needs of the service.

Uniforms and textbooks are supplied without cost to Military Science students. In addition, each Advanced Course student is paid approximately \$27 per month while in school and \$78 per month, plus travel expenses, while at Summer camp.

The commissions offered to successful graduates of the Advanced Course may be in any branch of the Army, based on the student's choice, his educational background, and the needs of the service.

**M. S. 11 & 12 First Year Basic, General Military Science**

Organization of the Army and ROTC; individual weapons and marksmanship; United States Army and National Security; school of the soldier and exercise of command. *2 credits*

**M. S. 21 & 22 Second Year Basic, General Military Science**

Map and aerial photograph reading; American military history; introduction to operations and basic tactics; school of the soldier and exercise of command, leadership laboratory. *4 credits*



**M. S. 101 & 102 First Year Advanced,  
General Military Science**

(Prerequisite: Military Science 11-12, 21-22, or the equivalent) Leadership; military teaching principles; branches of the army; small unit tactics and communications; ROTC summer camp orientation; school of the soldier and exercise of command. *5 credits*

**M. S. 110 & 111 Second Year Advanced,  
General Military Science**

(Prerequisite: Military Science 101-102) Operations; logistics; army administration; military law; the role of the United States in world affairs; service orientation; school of the soldier and exercise of command. *5 credits*

**DEPARTMENT OF PHILOSOPHY**

Father Devlin, S.J., *Chairman*



The aim of education is to equip the student with a mature, reflective and receptive outlook on life. Philosophy's role in pursuing this goal lies in providing, as far as man's reason can, a comprehensive view of the basic structure and meaning of reality. Philosophy is at once distinct from the positive sciences in its methodology and at the same time it provides the integrating principles whereby man can properly interpret the universe in which he lives. Consequently, the philosopher must be able to think clearly and express himself accurately. But he must also possess an intelligent appreciation of all the major attempts by man to answer his perennial questions. The broad principles of the Scholastic tradition will be proposed as the point of departure and rational framework for that ideal total wisdom which is docile to every manifestation and revelation of the true and the good.

Students wishing to major in philosophy must take the philosophy courses required of all students, and in addition Philosophy 113-114, History of Philosophy, for a total of 32 semester hours. Since required courses constitute 26 hours of this major, students majoring in philosophy must carry a second major, fulfilling departmental requirements as listed.

**PHIL. 101 Logic and Philosophy of Being**

A. An introduction to the logic of Aristotle as developed by the Stoics and Scholastics. The term, proposition, chief types of inference and fallacies. B. The meaning of being, the analogy of being, the intrinsic causes of limited being and becoming, existence and essence, form and matter, substance and accident, the theorem of act and potency. *4 credits*

**PHIL. 103 Philosophy of Being II**

(Prerequisite: Philosophy 101) A. Power and activity, relations, principles of efficient and final causality. B. The proof of the existence of God, the ways of knowing God, God's attributes, His action in His creatures, the transcendentals, and the problem of evil. *4 credits*

**PHIL. 105 Philosophy of Man I**

(Prerequisite: Philosophy 101-103) The unity of man, vegetative life, knowledge, differences in activity and powers, external sensation, internal sensation, the object of intellect, origin of ideas, and the nature of human knowing. *4 credits*

**PHIL. 108 Philosophy of Man II**

(Prerequisite: Philosophy 105) A. Appetency and appetite, the will, the sensory appetites, habits, the human soul and its attributes. B. The epistemological problem: historical origins, truth and certitude, fonts of human knowing, an introduction to the philosophy of science. *4 credits*

**PHIL. 110 Philosophy of Human Conduct I**

(Prerequisite: Philosophy 105-108) The purpose of human existence and the nature of responsible human action, the standard of moral goodness and evil and moral obligation. The nature and properties of the natural moral law. *4 credits*

**PHIL. 111 Philosophy of Human Conduct II**

(Prerequisite: Philosophy 110) The moral implications of man's relation to God as the object of religion and to himself as a being equipped with a variety of powers. Man as a social being, the societal character of marriage and civil society. The principles of morality for the various professional and industrial fields. *4 credits*

**PHIL. 113 Ancient and Medieval Philosophy**

A survey of the History of Philosophy from its beginnings in the West to its Scholastic flowering in the Middle Ages. Included will be a continuous discussion of the inter-relations of philosophy with the arts, the sciences and practical life. *3 credits*

**PHIL. 114 Modern Philosophy**

The development of modern thought, from Bacon and Descartes, through Spinoza, Leibnitz, Hobbes, Locke, Berkeley and Hume to Kant and Hegel. Neo-Scholasticism and its relation to contemporary philosophical movements. *3 credits*

**DEPARTMENT OF PHYSICS**

Dr. Harper, *Chairman*



The science of physics is concerned principally with matter and energy, the nature of each, and with their interactions. It is the fundamental science for most branches of engineering and has innumerable applications in medicine, industry and everyday life. The objectives of the Department of Physics are: 1. to impart knowledge of the general principles of physical science and to show applications to human problems; 2. to train the student in logical and accurate methods of observation, measurement and analysis; 3. to provide adequate training in the fundamentals of physics as a basis for medical, engineering and other courses of study; 4. to encourage those students with exceptional aptitude to pursue graduate work in physics.

**PHYS. 1 & 2 General Physics**

(Prerequisite: Mathematics 13-14) General college course for pre-medical, pre-dental and other students. Mechanics and heat, electricity and magnetism, sound and light. Three hours lecture and recitation and two hours laboratory. *8 credits*

nating currents and circuits, introductory electronics and atomic physics. For engineering students. Three hours lecture and recitation and two hours laboratory. *4 credits*

**PHYS. 11 & 12 Elements of Physics**

(Corequisite: Mathematics 21-22) Basic college course, employing methods of the calculus, for physics, electronics and chemistry majors. Mechanics and heat, sound light, electricity and magnetism. Three hours lecture and recitation and two hours laboratory. *8 credits*

**PHYS. 25 Radiation Science**

(Prerequisites: Mathematics 13-14, Chemistry 1-2, Physics 1-2, or equivalent) Fundamental course for science majors, engineering students and others covering the nature of matter, radioactivity, radiation detection, energy measurement and radiological safety procedures. Two lecture periods and one three-hour laboratory per week. *3 credits*

**PHYS. 18 Elementary Mechanics**

(Prerequisite: Mathematics 13) Elementary treatment of statics and dynamics of particles, rigid and elastic bodies, and fluids. For engineering students. Three hours lecture and recitation and two hours laboratory. *4 credits*

**PHYS. 101 Heat and Thermodynamics**

(Prerequisites: Physics 12 or 19; Mathematics 22) Intermediate course treating conduction, convection and radiation; thermodynamic laws, entropy, thermodynamic cycles, practical applications; kinetic and statistical theory of gases. Recommended for physics majors. Three hours lecture. *3 credits*

**PHYS. 19 Elementary Heat, Light and Sound**

(Prerequisite: Physics 18) Basic treatment of heat phenomena and thermodynamics; periodic motions, vibrations and sound waves; geometrical and physical optics. For engineering students. Three hours lecture and recitation and two hours laboratory. *4 credits*

**PHYS. 102 Mechanics**

(Prerequisites: Physics 11, or 18; Mathematics 101) Introduction to theoretical mechanics treating statics and dynamics of particles and extended bodies; motion of bodies by conservative and dissipative forces; energy relations; generalized coordinates and Lagrange's equations. Recommended for physics majors. Three hours lecture. *3 credits*

**PHYS. 20 Elementary Electricity and Magnetism**

(Prerequisite: Physics 18; Mathematics 14) Basic treatment of electrostatics, direct and alter-

**PHYS. 103 Light and Optics**

(Prerequisites: Physics 12, or 19; Mathematics 22) Brief review of geometric optics; extended treatment of topics in physical optics including diffraction, interference, polarization and spectra. Three hours lecture and three hours laboratory. Recommended for physics and electronics majors. *4 credits*

**PHYS. 104 Electricity and Magnetism**

(Prerequisites: Physics 12, or 20; Mathematics 101 may be taken concurrently) Analytical treatment of electrical and magnetic theory; electrostatic fields; direct currents and circuits; measurements; magnetism. Required of physics majors. Three hours lecture and two hours laboratory. *4 credits*

**PHYS. 105 Electricity and Magnetism**

(Prerequisites: Physics 104; Mathematics 101) Electromagnetic induction, circuit transients, alternating current circuits; measurements; electromagnetic fields and waves. Required of physics majors. Three hours lecture and two hours laboratory. *4 credits*

**PHYS. 106 Electronic Principles and Circuits**

(Prerequisites: Physics 12, or 20; Mathematics 22) General principles of electronic vacuum tubes and semiconductor devices; diodes and rectifiers; tube and transistor operation, characteristics; equivalent circuits; basic amplifier circuits. Required of electronics majors and recommended for physics majors. Three hours lecture and two hours laboratory. *4 credits*

**PHYS. 107 Electronic Principles and Circuits**

(Prerequisite: Physics 106) General analysis of electronic amplifiers for broad and narrow band operation; oscillators; modulators and detectors; computer and other special purpose circuits. Required of electronics majors. *4 credits*

**PHYS. 108 High Frequency Electromagnetic Waves**

(Prerequisites: Physics 107; Physics 116; Mathematics 101) Transmission of UHF signals; characteristics of transmission lines; theory of UHF measurements; electromagnetic wave theory. For electronics majors. Three hours lecture and two hours laboratory. *4 credits*

**PHYS. 109 Microwave Theory and Circuits**

(Prerequisites: Physics 108; Mathematics 101) Theory of microwave transmission through waveguides; microwave tubes and signal generators; microwave measurements; receivers and transmitters; radar systems. For electronics majors. Three hours lecture and two hours laboratory. *4 credits*

**PHYS. 110 Modern Physics**

(Prerequisites: Physics 105; Mathematics 101) Introduction to atomic structure and related phenomena including treatment of classical and quantum theories of emission and absorption of radiations. Required of physics majors. Three hours lecture. *3 credits*

**PHYS. 111 Modern Physics**

(Prerequisite: Physics 110) The study of nuclear and related phenomena dealing with nuclear structure, radioactivity, cosmic rays, nuclear particles, fission and fusion. Required of physics majors. Three hours lecture. *3 credits*

**PHYS. 112 Acoustics**

(Prerequisites: Physics 12, or 20; Mathematics 101) Treatment of acoustics problems by use of mechanical and electrical models; diffraction and interference of acoustic waves; analysis of electroacoustic devices. Required of electronics majors and recommended for physics majors. Three hours lecture. *3 credits*

**PHYS. 114 Advanced Physics Laboratory**

(Prerequisites: Physics 105) Study and use of devices and techniques for the quantitative measurements of heat, light, electron characteristics and other physical phenomena. Required of physics majors. One three-hour laboratory. *1 credit*

**PHYS. 115 Advanced Physics Laboratory**

(Prerequisites: Physics 110 and 114) Measurement and analysis of nuclear radiations; detection and identification of rays and particles; energy measurements; neutron induced radioactivity; radiation protection. For physics majors. One three-hour laboratory. *1 credit*

**PHYS. 116 Introduction to Electromagnetics**

(Prerequisites: Physics 12, or 20; Mathematics 22) Intermediate electricity and magnetism course for electronics majors covering electrostatic and magnetic fields; direct and alternating currents; Maxwell's equations and electromagnetic waves. Required of electronics majors. Three hours lecture and two hours laboratory. *4 credits*

**PHYS. 120 Undergraduate Physics Thesis**

(Prerequisites: 24 credits in physics; 20 credits in mathematics) Recommended for senior physics majors; for the purpose of evaluating the student's capacity for individual study and research on a specific physical problem. Assignment of problem to be arranged with the department Chairman. *1 credit*





Courses in Sociology seek to provide the terminal student and the prospective graduate student with a basic understanding of the forces which are part of the structure of our society; to provide a pre-professional orientation to the field of Social Work.

A major in sociology shall consist of Sociology 21 and 22, plus twenty-four (24) elective credits in Sociology. Certain psychology courses may be substituted for some of these elective credits with the authorization of the Chairman of the Department.

### SOC. 21 Basic Sociology

Basic sociological principles covering the basis, structure, and functions of society. Man's biological and cultural heritage and his social nature, demography, ecology, types of communities; the social processes and their relationship to social control, the family, economic, governmental and religious institutions. *3 credits*

### SOC. 22 Social Problems

An analysis of the major social problems affecting modern society. Social legislation bearing on the above, resources for treatment and prevention, and deficiencies in existing programs. *3 credits*

### SOC. 103 Criminology and Penology

Contributions of the various schools to the development of criminology. Physical, psychological and environmental factors in crime. The role of the home, family and social relationships. The methods and instrumentalities of criminal justice, crime prevention. *3 credits*

### SOC. 104 Cultural Anthropology

Study and comparison of the learned, shared and transmitted behavior patterns and ideals by which man has worked out his social relations, dealt with his environment and defined his place in the world. *3 credits*

### SOC. 105 Sociological Theories

A survey of the development of sociological principles and theories, including a comparison of the modern major schools of thought such as the mechanistic, geographical, demographic, biological, economic, sociologicistic and integrative. *3 credits*

### SOC. 106 Community Organization

A general introduction to the field and process of community organization, both as a field of social work, and as a field of human endeavor. The co-ordination and financing of welfare activities, methods of appraising community needs and

resources, planning and the initiation of welfare services. Services of a voluntary and governmental nature will also be discussed. *3 credits*

### SOC. 107 Child Welfare

Development of child welfare in the United States. Educational, health, recreational and child labor regulations. Study and treatment of children in their own homes, foster homes and institutions. Child care and protective programs on Federal, State and local level. *3 credits*

### SOC. 109 The Field of Social Work

Growth of social work as a professional endeavor. The scope of social work; case work in the medical, psychiatric, family and child welfare and guidance field; community organization as exemplified in the community chest and council, social research, social planning, social group work. Current trends in social work. *3 credits*

### SOC. 110 Marriage and Family Life

The major focus of attention will be given to the preparation for marriage, selection of a partner, financing the marriage, harmonies and discords in the marriage, problems of parenthood and family administration, successful and happy marriage and family union. Restricted to seniors. *3 credits*

### SOC. 111 Urban Sociology

A sociological analysis of the development and effects of modern urbanization on human institutions, population trends and social relationships. The interrelationships, form, structure and organized life in cities, patterns of urban structure and cities of the future. The role of politics, social agencies and elements making for organization and disorganization. Urban planning and redevelopment. *3 credits*

### SOC. 112 Methods and Techniques of Social Research

Methods of obtaining, recording, interpreting, and publishing research materials; the use and interpretation of statistical procedures. *3 credits*



**SOC. 113 Juvenile Delinquency**

Juvenile delinquency as a social problem. Methods of treatment and prevention, including juvenile courts, clinics, probation, parole, correctional institutions, child placement and recreational programs. *3 credits*

**SOC. 114 American Minority Groups**

A study of the cultural background distribution, assimilation and other adjustments of minority

groups; problems arising from the contacts of these people who differ as to race and culture. Prejudice and discrimination as opposed to the democratic ideology will be considered. *3 credits*

**SOC. 120 Special Problems**

Done on an individual basis. Assigned readings, individual research, informal conferences and written reports. Individual has choice in field of sociological study. Restricted to seniors. *1 credit*

**DEPARTMENT OF THEOLOGY**

Fr. E. Gallagher, *Chairman*



The program in theology has been organized upon the fundamental principle that theology is something vital, which must be lived as well as understood. It is not intended to train theologians but rather to form thoroughly enlightened and strongly motivated Catholic gentlemen, bent upon attaining their full stature in the Mystical Body of Christ.

**THEO. 1 The Biblical World**

History of development of literary, archaeological sources; biblical world: 1850—100 B.C. Inter-testamentary period; political, social, religious background of Christian era. *2 credits*

**THEO. 101 The Theology of the Individual**

The life of the Triune God; the individual's participation in God's life through grace on earth and through the beatific vision in heaven. *2 credits*

**THEO. 2 The Quadriform Gospel**

The genesis of written gospels from primitive apostolic preaching. Structure, content, characteristics of each gospel. The "Gospel Message"—Jesus, Savior, Son of God, Model of perfect manhood. *2 credits*

**THEO. 102 The Theology of the Lay Apostolate**

The nature of the layman in the Church; his collaboration with the hierarchy in the Church's Apostolate in the modern world; his apostolic formation. *2 credits*

**THEO. 21 Man's Redemption**

The creation, elevation, and fall of man; the Incarnation; the Sacrifice of the Cross and of the Mass; the Sacrament of Baptism. *2 credits*

**THEO. 110 The Catholic Philosophy of Religion**

The Gospels as reliable history. The claims of Christ and proofs for these. Christ founded a visible Church, which is the Roman Catholic Church. *2 credits*

**THEO. 22 The Catholic Church**

Origin and development of Church, Christ's Mystical Body, the role of Holy Spirit; Church's constitution and three-fold function. *2 credits*

**THEO. 111 The Church and the Social Order**

The purpose and meaning of Christian marriage. Legal, moral, economic, educational and psychological aspects of marriage and the family. Papal teaching regarding the social order. *2 credits*



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