

1966

1966-67 Seattle University Bulletin of Information

Seattle University

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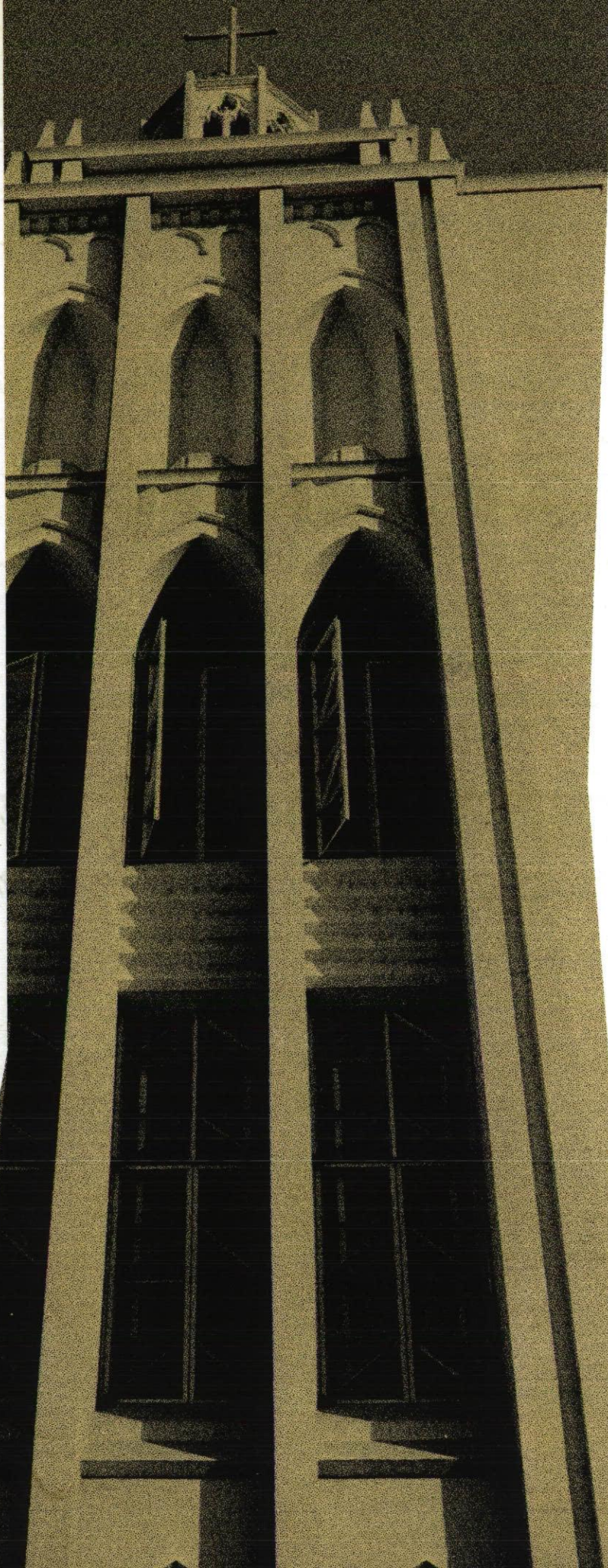
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SEATTLE UNIVERSITY

BULLETIN OF INFORMATION 1966-67

1891-1966

75
YEARS



SEATTLE UNIVERSITY

BULLETIN OF INFORMATION

1966-67



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Summer Quarter 1966

June 20 – Monday Registration
 June 21 – Tuesday Classes Begin
 July 4 – Monday Independence Day—No Classes
 July 18 – Monday Registration—Second Session
 Classes Begin—Second Session
 August 11-12 – Thursday-Friday Final Examinations

Fall Quarter 1966

Sept. 17 – Saturday Washington Pre-College Test
 Sept. 19 – Monday Orientation
 Sept. 20 – Tuesday Registration—Returning Students
 Sept. 21 – Wednesday Registration—New Students
 Sept. 22 – Thursday Classes Begin
 Sept. 23 – Friday Last Day to Register
 Sept. 28 – Wednesday Last Day to Change or Add Classes
 Oct. 5 – Wednesday Mass of the Holy Spirit
 Oct. 21 – Friday Last Day to Remove Spring and Summer Incompletes
 Nov. 1 – Tuesday All Saints' Day—No Classes
 Nov. 7 – Monday Last Day to Withdraw with 'W'
 Nov. 11 – Friday Admissions Day—No Classes
 Nov. 24-25 – Thursday-Friday Thanksgiving Day—No Classes
 Dec. 8 – Thursday Immaculate Conception—No Classes
 Dec. 12-15 – Monday-Thursday Final Examinations

Winter Quarter 1967

Jan. 3 – Tuesday Registration
 Jan. 4 – Wednesday Classes Begin
 Jan. 5 – Thursday Last Day to Register
 Jan. 10 – Tuesday Last Day to Add or Change Classes
 Feb. 2 – Thursday Last Day to Remove Fall Incompletes
 Feb. 3 – Friday President's Day—No Classes
 Feb. 10 – Friday Last Day to Withdraw with 'W'
 Feb. 22 – Wednesday Washington's Birthday—No Classes
 Mar. 14-17 – Tuesday-Friday Final Examinations

Spring Quarter 1967

Mar. 28 – Tuesday Registration
 Mar. 29 – Wednesday Classes Begin
 Mar. 31 – Friday Last Day to Register
 April 5 – Wednesday Last Day to Add or Change Classes
 April 28 – Friday Last Day to Remove Winter Incompletes
 May 5 – Friday Last Day to Withdraw with 'W'
 June 3 – Saturday Baccalaureate Mass
 June 4 – Sunday Commencement
 June 5-8 – Monday-Thursday Final Examinations

Purpose
and
Scope



The aim of Seattle University's system of education is shaped by the Christian, and specifically Catholic, concept of the complete nature and final destiny of man. That man, a morally responsible being, must know something about himself as a citizen, the goals of his existence, the purposes of organized society and other elements which encompass the broad sweep of political, economic and social life is self-evident; hence, the specific objectives of Seattle University are: to provide a complete and integrated education, moral, intellectual and aesthetic; to develop the whole human person in an orderly and balanced manner for complete living in time and eternity; to provide professional guidance and instruction for developing those qualities which prepare for competent leadership and service in all fields of human endeavor.

To educate an unchanging nature in the midst of a changing world, the University strives to present to its students knowledge of the complex problems of modern life and to assist in their solution through the discovery of eternal principles. Realizing that neither age nor modernity is the final touchstone of truth, the Jesuit fathers and lay faculty of Seattle University have as their goal the education of youth by the light of the tested wisdom of the past in the academic and practical concerns of the present in order to form for the future the true and finished person of character and culture.

1891 - 1966

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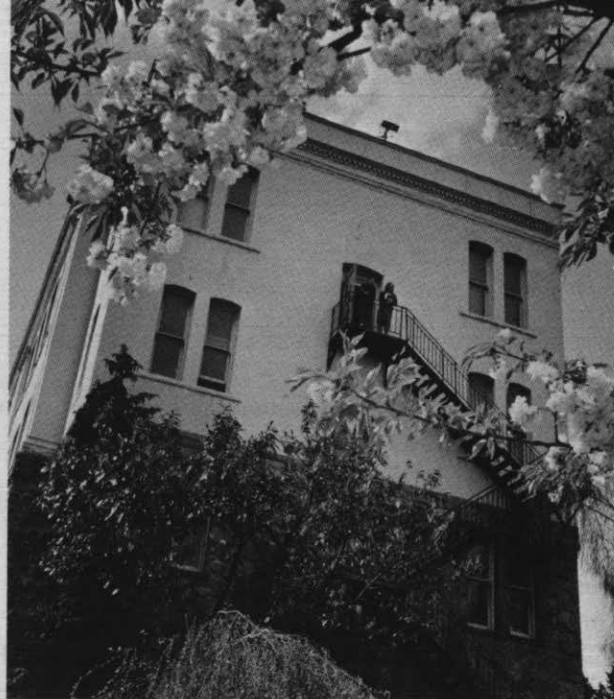
YEARS
History

Seattle University's development as one of the Pacific Northwest's leading universities is closely interwoven with the history of Seattle and the Pacific Northwest. It is the story of a continuing effort on the part of the University to help meet the educational demands of a burgeoning area.

In 1890, concerned with the problem of providing adequate educational opportunity for the young men of the area, the Rt. Rev. Aegidius Yunger, bishop of the then Nesqually diocese, asked the Jesuit fathers to establish a school in Seattle. Two pioneer priests, the Rev. Victor Garrand, S.J., and the Rev. Adrian Sweere, S.J., were sent by the Rev. Joseph Cataldo, S.J., superior of the Rocky Mountain Province, to answer the bishop's request.

They arrived in Seattle early in 1891 and immediately set about choosing a site for the new school. Upon the advice of some of the area's leading figures, they purchased several lots in the Broadway addition on the eastern edge of the young city. Pending construction of their new building, the fathers were asked to begin classes in St. Francis Hall, at what is now Sixth and Spring Streets in downtown Seattle. They assumed administration of the church and school on September 27, 1891, changing the name of the latter to the School of the Immaculate Conception.

In 1893, the cornerstone of the first building on the present campus at Broadway and Madison Streets was laid. The building, now Science Hall, served both as a school and as the first Immaculate Conception Church in Seattle. The following year, under the direction of the Rev. Conrad Brusten, S.J., and the Rev. Patrick Mahony, S.J., students were first enrolled in an "Academic" course of studies at the high school level. Four years later, the school received its Articles of Incorporation as an institution of higher learning under the corporate title, Seattle College.



The years that followed were years of struggle for the young institution. The frontier atmosphere of the time was not especially conducive to its growth and it was not until 1900 that the collegiate program was begun with a program in "The Humanities," the forerunner of today's College of Arts and Sciences. The following year graduate studies were introduced and in 1907, at the request of former students, evening courses were first offered. The University granted its first bachelors' degrees in the spring of 1909.

Conditions during the First World War led to the suspension of classes from 1918 until 1922. The latter year they were resumed on a seven-acre campus on Interlaken Boulevard which, with two buildings, had been presented to the college by Mr. and Mrs. Thomas C. McHugh. Both college and high school classes were held on the new campus until 1931 when the college returned to its former Broadway and Madison site.

Seattle University's second academic unit, the School of Education, was added in 1935. The same year the University admitted its first women students. In 1937, full accreditation was granted by the Northwest Association of Secondary and Higher Schools. The School of Nursing was established in 1940 and the School of Engineering added in 1941. A fifth major academic unit, the School of Commerce and Finance was initiated in 1945.

On May 28, 1948, full university status was granted by the State of Washington and Seattle College assumed its present title, Seattle University. In 1957, the first College of Sister Formation in the country incorporated in a regular university was established at Seattle University.

Organization

Seattle University is a private, coeducational university conducted by the fathers of the Society of Jesus, popularly known as the Jesuits. It is open to students of all races and denominations and is incorporated under the laws of the State of Washington. One of 28 Jesuit colleges and universities in the United States, it derives its tradition and objectives from the four centuries of academic experience and educational ideals of the Society of Jesus, implemented by nearly two thousand years of Christian tradition and knowledge.

The University is composed of seven major academic units:

The College of Arts and Sciences comprises 19 departments. These are: art, biology, chemistry, economics, English, history, home economics, journalism, languages, mathematics, military science, music, philosophy, physics, political science, psychology, sociology, speech and theology. Program divisions are honors, first humanities, pre-major, pre-dental, premedical and prelaw.

The School of Commerce and Finance offers programs in: accounting, general commerce, finance and banking, industrial relations and personnel management, marketing, and office management.

The School of Education offers programs which qualify its students for teaching certificates and principals' credentials issued by the State Department of Public Instruction.

The School of Engineering is comprised of three departments: civil, electrical, and mechanical engineering.

The School of Nursing offers a baccalaureate program in professional nursing which qualifies students for registration through state licensure.

The College of Sister Formation offers a program for the intellectual, professional and spiritual development of religious.

The Graduate School has programs leading to master's degrees in biology, English, history, education, and engineering fields.

Accreditation

Seattle University enjoys the highest accreditation and its students are accepted for graduate and advanced study by leading colleges and universities in all parts of the country. The University is accredited by:

Northwest Association of Secondary and Higher Schools

National League For Nursing

American Chemical Society

Engineering Council for Professional Development

American Association of Collegiate Schools of Business

is approved by:

Washington State Board of Education

American Medical Association

American Society of Clinical Pathologists

American Association of Medical Records Librarians

Washington State Board of Nursing

is a member of:

Jesuit Educational Association

National Catholic Educational Association

Association of American Colleges

American Association of Colleges for Teacher Education

American Council on Education

Northwest Association of Colleges

National Commission on Accrediting

American Association of University Women

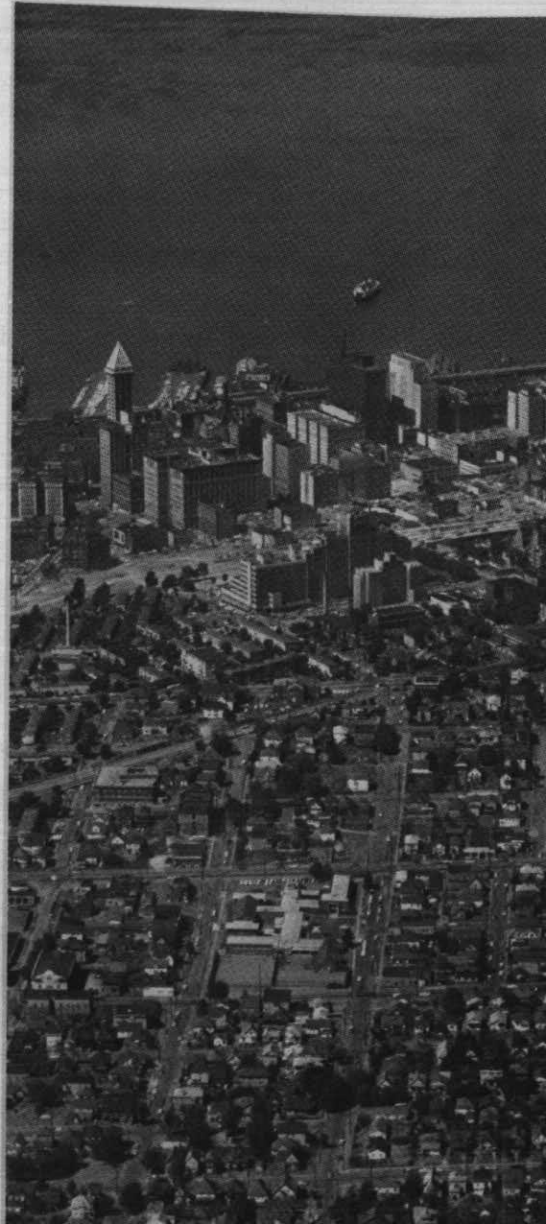


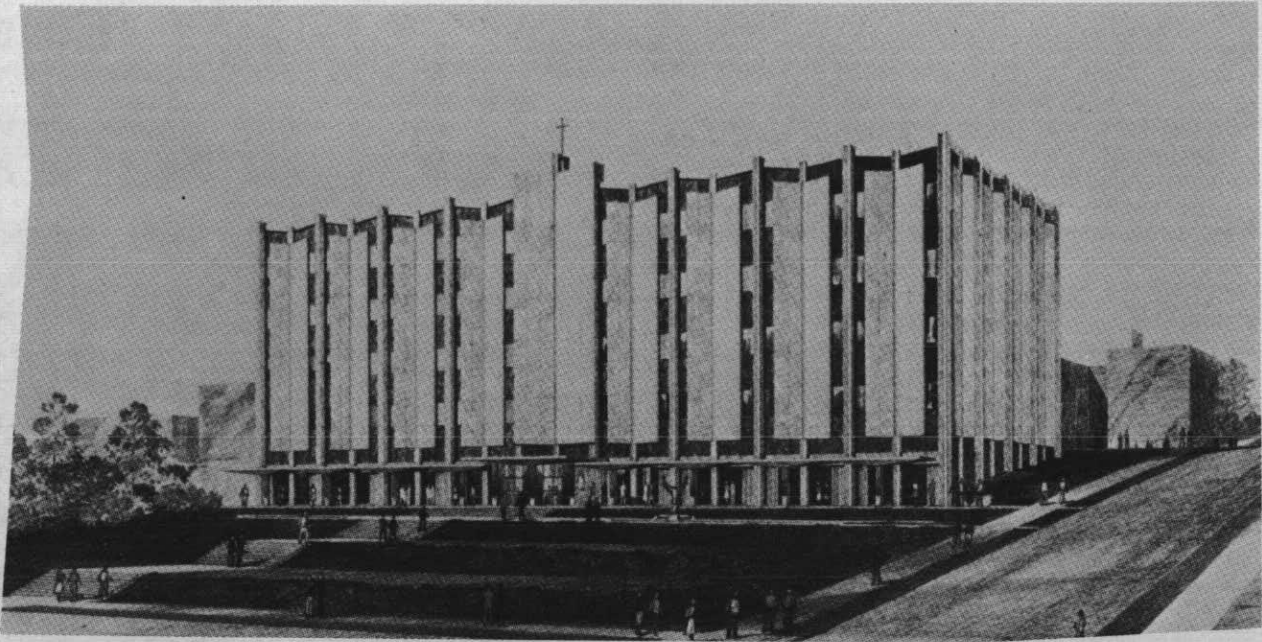
Campus

The University is situated on a 41-acre site on Seattle's historic First Hill. It is convenient to the city's major educational, cultural and recreational facilities. These include libraries, museums, art galleries, parks and theatres, as well as agencies of municipal, state and federal government, banks, commercial and shopping centers. All are within easy reach of the student seeking the advantages of urban living. The Seattle area is served by major air, rail, highway and steamship facilities.

To meet present and anticipated enrollments, the University has greatly increased its physical plant in the past decade. At the present time, the campus includes 23 classroom and service buildings. Among these are modern classrooms, student and faculty residences and service units.

Newer campus structures include the Student Union (1953); Marycrest Hall, women's residence (1954); Xavier Hall (1955); William Pigott Building, commerce and education (1957); Thomas J. Bannan Building, physical sciences and engineering (1961); Bellarmine Hall, women's residence (1962); Champion Tower, men's residence (1965). A new bookstore was opened in a completely renovated building late in 1964 and construction of the University's new library is now underway.





Tuition and Fees

Student tuition and fees expenses at Seattle University are due on the day of registration each quarter. Students unable to meet these obligations may apply for financial assistance. Details of the several plans available are listed on page 17 of this bulletin.

Charges for room and board are payable on the schedule listed under residence charges. The University reserves the right to make adjustments in its charges without prior notice. After a quarter has begun, no changes in financial charges will be made which will be effective during that quarter.

Family Plan—The second member of the same family attending the University concurrently as an undergraduate may apply for a 25 per cent reduction in tuition; the third and additional members of the same family may apply for a 50 per cent reduction in tuition.

Discounts for religious may be had on application.

Tuition

Tuition per quarter (10 to 16 hours).....	\$320.00
Over hours (per credit hour).....	\$ 10.00
Under 10 hours (per credit hour).....	\$ 32.00
Auditor's tuition (per credit hour).....	\$ 21.50

Regular Fees

General fee (per quarter) Full-time students (10 or more credit hours).....	\$ 27.00
Part-time students (less than 10 credit hours).....	\$ 15.00
<small>Covers registration, library and health center fees; yearbook; student newspaper and student organization allotments; admission to athletic events and specified student productions.</small>	
Building fee (per quarter)	
Full-time students	\$ 6.00
Part-time student	\$ 4.00

Occasional Fees (non-refundable)

Application fee—undergraduate and graduate (each paid only once).....	\$ 10.00
Matriculation fee (paid once, at first registration).....	\$ 10.00
Registration deposit	\$ 25.00
<small>applied to first quarter's tuition if student completes registration</small>	
Change of registration (per change).....	\$ 10.00
Late registration (added to tuition and fees) \$10 per day—two-day maximum.....	\$ 20.00
Special examination (per subject) testing.....	\$ 2.50
Make-up examination (per hour).....	\$ 1.00
Credit by examination (per credit hour).....	\$ 3.00
Removal of incomplete.....	\$ 5.00
Withdrawal fee (per course).....	\$ 1.00
Washington Pre-College tests (if not taken in high school).....	\$ 5.00
Graduation fee (bachelor's degree).....	\$ 20.00
Graduation fee (master's degree).....	\$ 45.00
<small>Graduation fees are due at the time of application for graduation and graduation forms will be released only upon presentation of a receipt for these fees.</small>	
Graduate Record Examination.....	\$ 7.00
Duplicate official transcript (per copy).....	\$ 1.00
Duplicate unofficial transcript (per copy).....	\$.50

Laboratory Fees

Art:	
All courses	\$ 3.00
Biology:	
All courses	\$ 10.00
Chemistry:	
All laboratory courses.....	\$ 10.00
Commerce and Finance:	
Students registered in the School of Commerce and Finance.....	\$ 3.00
Any student taking CF 220, 221, 222, 316..	\$ 5.00
Education:	
ED 370, 451, 452, 453.....	\$ 5.00
Engineering:	
All laboratory courses.....	\$ 10.00
Home Economics:	
HE 160, 161, 260, 360.....	\$ 3.00
HE 270, 370.....	\$ 5.00
HE 110, 111, 310, 315, 376.....	\$ 10.00
Mathematics: MT 114, 214.....	\$ 30.00
Music:	
Voice or instrumental music, one-half hour lesson, per week, per quarter.....	\$ 30.00
Voice or instrumental music, one hour lesson, per week, per quarter.....	\$ 50.00
Music Theory, if taken privately, one-half hour lesson, per week, per quarter.....	\$ 30.00
Music Theory, if taken privately, one hour lesson, per week, per quarter.....	\$ 50.00
Organ practice, one hour daily, per quarter	\$ 15.00
Piano practice room, one hour daily, per quarter	\$ 10.00
Instrument rental for Instrument Methods Class.....	\$ 7.50
Nursing:	
Achievement tests beginning 6th quarter, per test.....	\$ 1.00
Laboratory fee N 205, 206 (each).....	\$ 5.00
Uniforms (4th quarter) approximate cost..	\$ 60.00
Psychology:	
Psy 203, 381, 401, 402.....	\$ 5.00
Physics:	
All laboratory courses.....	\$ 10.00

Refunds

Refunds are based on period from first class day to date of official withdrawal:	
Up to and including 10 class days.....	80%
Up to and including 15 class days.....	60%
Up to and including 20 class days.....	40%
Thereafter	00%
At least 10 class days must elapse between payment and refund of fees.	

Residence Charges

Room and Board.....	per academic year
Plan 1 (16 meals per week).....	\$788.00
Plan 2 (21 meals per week).....	\$863.00
Payment Schedule	Plan 1 Plan 2
Reservation Fee	\$ 70.00 \$ 70.00
Fall Quarter*	\$288.00 \$313.00
Winter Quarter	\$250.00 \$275.00
Spring Quarter	\$180.00 \$205.00

*Includes \$3 annual residence hall activity fee.
Telephone service \$8 per quarter.



STUDENT SERVICES

The principal function of any university is to provide for its students an atmosphere conducive to intellectual progress—laboratories, library, classrooms and stimulating teachers. However, it is recognized that the total development of the individual is equally important. Consequently certain services have grown and developed at Seattle University which exist for the purpose of serving the spiritual, social, personal and physical needs of the student body. These services of the university personnel described below are aids in making the educational pursuits of the students more profitable and satisfying.

Orientation

To assist new students in becoming better acquainted with the University and familiar with their academic program, the Academic Vice President, assisted by the Dean of Students, the staff of the Counseling and Testing Center and members of the Student Government, sponsors a Freshman Orientation Program for all fall quarter freshmen. Freshmen students must attend all of the orientation sessions. Transfer students are responsible for arranging with the Counseling and Testing Center for their participation in any testing program required of all new students.

Advisory System

The deans of the several schools supervise the academic guidance and counseling program of both freshmen students and upper classmen in their school. Through the department heads, they assign an adviser for each student according to his major or area of concentration. A student is under the academic guidance of the head of the department in which the student is taking the most hours.

Personal and Social Guidance

The chaplains and Jesuit faculty members, the Dean of Students and the Dean of Women are also available for counseling on personal matters and to provide formal and informal guidance. Students are free to seek advice from any member of the faculty, lay or Jesuit. Prefects and housemothers in the residence halls are always available to answer questions and to advise. The advising system is not to supplant personal initiative and responsibility. The student is held responsible for making out programs and schedules and choosing courses and degrees.

Counseling and Testing Center

In addition to the academic and personal advising described above, specialized counseling is available at the Counseling and Testing Center by persons trained in clinical psychology. Here tests of scholastic and vocational aptitude, interest and personality are available to students. This service is administered on a reduced fee basis for students enrolled in the University. The Counseling and Testing Center also administers University-wide testing programs for the academic guidance of new students and supervises the National League for Nursing achievement tests for students in the School of Nursing. At the discretion of the individual instructor, students may make up class examinations at the center.

Spiritual Guidance

Seattle University has over 65 Jesuit priests who have dedicated their lives to working with college students. Each of these is a student counselor, and students may feel free to come to them with any problem. The regular training of the Jesuit averages 15 years beyond high school and includes training in mental health. In addition, they are trained in pastoral counseling and guidance. These faculty members are available by appointment or through the informal contact of campus life, since all live on campus.

These guidance facilities constitute a large and rather unique contribution to mental health and adjustment, though usually not designated as such.

Religious Program

Retreats—All full-time Catholic students should make an annual retreat. A series of closed retreats is offered each year. For those who cannot make a closed retreat there are many week-end on-campus retreats offered. Mass—Daily Mass is celebrated in the Chieftain lounge at noon. Earlier Masses are also celebrated in the student chapel, with Mass schedules posted on the chapel door. The academic year begins with the Mass of the Holy Spirit. There is a Baccalaureate Mass in honor of the seniors at graduation.

Christian Activities Program

Our Lady's Sodality is the University's official Catholic Action Association with its mandate from the Holy See. Members of Sodality commit themselves to the full living of their Christian student vocation as a preparation for their apostolic vocation as educated Catholic leaders in the world. Sodality's first year program is designed to develop in its members, through their own guided self-activity, a clear vision of, enthusiasm for, and commitment to the supernatural and apostolic aims of the University. Members of Sodality actively participate in and promote all sections of the students' Christian activity program.

The Confraternity of Christian Doctrine, with its mandate from the Archbishop of Seattle, is composed of all students interested in working with the handicapped in the Seattle area: the blind, deaf, mentally and physically retarded children and mental patients.

The Apostleship of Prayer is the official spiritual association of the entire University family, both students and faculty.

The Lay Missions Association fosters student interest in the lay missions by providing mission programs for the entire student body.

The Ecumenical Institute aims at fostering a true Christian spirit by means of dialogue between students and members of different faiths.

Social Action Section effects community involvement by a personal encounter between the student and members of the community—such as the tutoring program at St. Peter Claver Center, Lee House for senior citizens, Ruth Home for girls, the Good Shepherd Home and the Neighborhood House.

Amigos Anonymous is an association of students who prepare during the academic year for aiding the underprivileged in Mexico during the summer.

Student Health Center

All students enrolled at the University for 10 or more credit hours are required to participate in the Student Health Center program. The program entitles students to the use of the Student Health Center located on the campus and staffed by a doctor and a registered nurse. The program also provides a \$5 daily allowance toward the room service charge should the student require hospitalization. The \$3 per quarter cost of this service is paid each quarter in the general fee.

Blue Cross Program

Day school students enrolled for 10 or more hours are eligible to participate in a special program of student coverage offered by Blue Cross. This program provides for hospital benefits, physicians' and surgeons' fees and accident expenses. Cost of the Blue Cross program is \$9.20 per quarter and is paid separately by the student at registration.

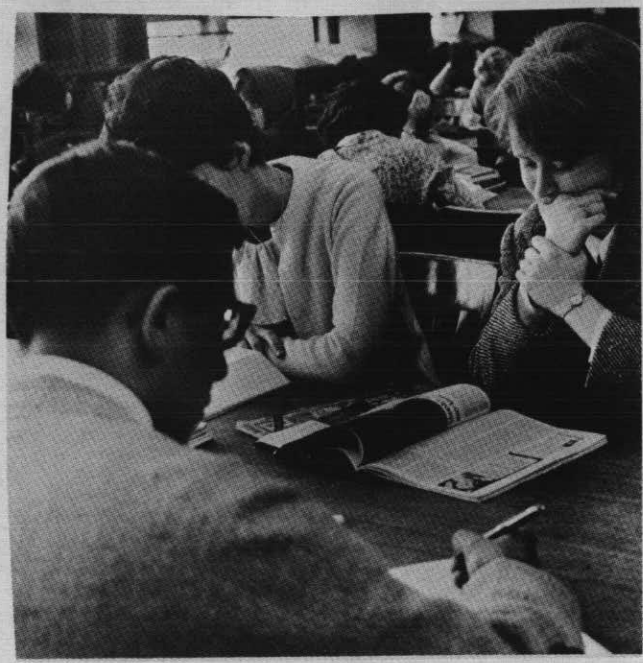
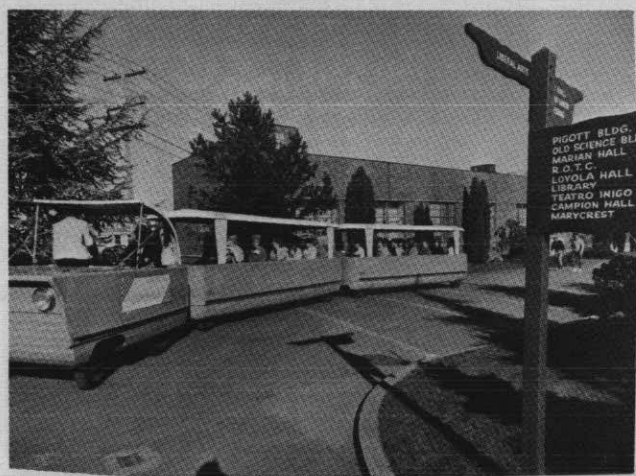
Blood Bank

The Seattle University Blood Bank may be drawn upon by registered students for themselves and for their families. All requests for blood must be submitted to the Office of Student Services. Blood contributions to the bank are solicited from students during the year.

Athletic Program

Seattle University is a member of the National Collegiate Athletic Association and its athletic policy is governed by the constitution and by-laws of that association. The athletic program is administered by the Director of Athletics and his staff. Major sports at the University are basketball, baseball, tennis and golf.

An intramural athletic program is conducted for both men and women students. The program is administered by the Physical Education department and includes participation in basketball, field hockey, golf, softball, tennis and volleyball.



General Organizations

Associated Students of Seattle University—Has general supervision of all campus organizations and extracurricular activities. Direction is exercised through the student senate, activities board, financial committee, and the Office of the Dean of Students.

Associated Women Students—An organization whose purpose is to provide for the welfare of women students, to promote educational, religious, cultural and social interests, to foster cooperation and understanding, and to instill ideals of leadership.

Student Publications

The Aegis—Student yearbook.

The Spectator—Semi-weekly student newspaper.

Service Honoraries

Alpha Phi Omega—A national service fraternity open to male students.

Intercollegiate Knights—A national service fraternity open to men.

Spurs—A women's service organization open to sophomore women who have shown qualities of scholarship, interest in school events and attributes of leadership and personality.

Gamma Sigma Phi—Seattle University women's service honorary.

Mu Sigma—Music service honorary.

Academic Organizations

Many campus organizations provide the student with an opportunity to develop his talents and to broaden his social and professional background. Included are professional societies, service clubs, student government groups, musical organizations, student publications, scholastic honoraries, religious committees and civic and charitable organizations. A list of authorized organizations may be obtained from the Office of the Dean of Students.

Academic Honoraries

Alpha Sigma Nu—National Jesuit honorary for men recognizing outstanding scholastic attainment, loyalty and service.

Gamma Pi Epsilon—National Jesuit honorary for women. Primary requisite for selection is scholastic excellence.

Silver Scroll—Women's national scholastic honorary for upperclass students.

Alpha Epsilon Delta—National pre-medical honorary.

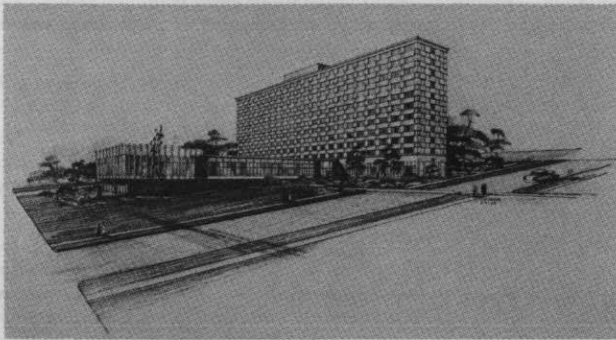
Alpha Kappa Psi—National professional business honorary.

Alpha Tau Delta—National honorary for nursing students.

Gamma Beta Pi—National engineering scholastic honorary.

Pi Mu Epsilon—National mathematics honorary.





Housing

15

housing

All freshmen, sophomores and juniors under 21 years of age are required to live in University housing unless they are married or living with their parents, or unless they have been granted an advance waiver by the Dean of Students or the Dean of Women.

Residence Halls for Women

Marycrest Hall, residence for freshmen women, accommodates 312 students. Five directors and two managers are in residence. Jesuit spiritual counselors schedule informal conferences each month and are readily available for personal help and guidance. Marycrest has its own dining hall and snack bar where meals are served Monday through Friday. Weekend meals are enjoyed at Bellarmine dining hall.

Bellarmino Hall, opened in 1962, has accommodations for 468 sophomore and junior women. It provides study and recreational facilities, a snack bar and a dining hall. Marian Hall, apartment-type residence for upperclasswomen students, accommodates 119. It has nine studio, 19 one-bedroom and 11 two-bedroom apartments. Residents of Marian Hall use the dining facilities of Bellarmine Hall and the Chieftain.

Residence Hall for Men

Campion Tower, opened for the 1965 fall term, is the residence for men. This 12-story unit provides accommodations for 712 students. It is supervised by Jesuit prefects and is equipped with study, recreational and dining facilities.

Application for Housing

Requests for student housing are made through the Dean of Students (men) or through the Dean of Women (women). A seventy-dollar (\$70.00) deposit is required to make reservations. See page 10 for schedule of housing costs.

Cancellation of a reservation must be received at the office of the Dean of Students or Dean of Women *no later than August 1*.

Applicants who do not cancel contracts by the above date forfeit the deposit fee. Residents who terminate their stay in University residence halls before the end of the academic year forfeit the \$70 deposit fee.



Over 200 scholarships are awarded annually on the basis of scholastic achievement and financial need to high school seniors and students presently attending the University. To be eligible a student must have at least a 3.0 (B) academic grade point average. All scholarships are tuition awards and vary from one-year to four-year terms. Fees, room and board, textbooks and other incidentals are not included.

Scholarship application forms and information are mailed to all high schools in the state and to most of the major Catholic high schools on the West Coast in October. Individuals or institutions not on the regular mailing list may obtain this literature by writing to the COMMITTEE ON SCHOLARSHIPS, SEATTLE UNIVERSITY, SEATTLE 98122.

The Scholastic Aptitude Test of the College Entrance Examination Board must be taken no later than January, and the student's application for admission should be submitted as soon as possible after the seventh semester. All credentials must be received by the Committee on Scholarships by March 1st. Students attending the University also have the opportunity to apply each spring for a scholarship for the coming year, based on their academic record at the end of the winter quarter.

The Boeing Company

A total annual grant of \$3,255 to be disbursed by the Scholarship Committee to those scholarship students majoring in engineering, physics, mathematics or commerce and finance. The usual award is for \$675 per year and is renewable for three additional years if the students maintain a high scholastic standing. An additional grant of \$2,000 annually is given the school.

Crown Zellerbach Foundation

An annual \$600 scholarship granted to a third or fourth year student majoring in physical or social science at the University. An additional fund of \$400 is also awarded the University.

Farmers New World Life Insurance Company

Scholarship funds will be granted to the University each year on the basis of \$250 a year per each graduate of Seattle University who has been employed by the company for at least four years.

Friedman, Lobe and Block Scholarship

An award of \$100 to a student majoring in accounting. Awarded on the basis of financial need.

Olympic National Life Insurance Company

A grant of \$500 awarded to a junior in the School of Commerce and Finance or the College of Arts and Sciences.

Palmer Supply Company

An annual \$500 scholarship awarded to an outstanding high school student in the Pacific Northwest in honor of Ethel L. Dupar. This scholarship is non-renewable. A matching fund of \$500 is also awarded the school.

Western Gear Foundation

A total of \$2,000 for engineering scholarships is given annually in honor of the late Philip L. Bannan, Sr. A matching fund of \$2,000 is given the school for operational expenses. These scholarships are renewable for three additional years if the student maintains a high scholastic standing.

American Society of Women Accountants

An annual award of \$100 to a junior or senior woman student majoring in accounting. Selection is based upon academic achievement and financial need.

Italian Club of Seattle

A \$500 scholarship sponsored by the Italian Club of Seattle for a boy or girl whose parents are a member of the Italian Club. To be awarded on the basis of academic ability, character and need.

King County Optometric Society

A \$250 scholarship awarded to a high school graduate who will take preparatory courses at Seattle University leading to the study of optometry. Applicants must be residents of the State of Washington. Renewable for one year.

Seattle League of Insured Savings Associations

Two \$300 scholarships awarded annually to a junior and a senior student enrolled in the University's School of Commerce and Finance.

Wyman Trust Foundation

An award of \$650 to an entering freshman or upperclassman. Awarded on the basis of academic achievement and financial need. A grant of \$350 is also made to the University.

Albert Antone Schafer

A permanent fund of \$25,000 established by Mrs. Albert Antone Schafer, the first woman regent of the University, in memory of her husband who was a pioneer Northwest lumberman. To be awarded worthy and deserving high school seniors, or students presently attending the University, on the basis of academic achievement and financial need.

Gretchen Keck Amundson Memorial

An annual award of \$200 to a graduate of either Bainbridge Island High School or North Kitsap High School. Established by the Amundson family and friends in honor of Mrs. Amundson. Selection is based upon academic achievement and financial need.

Blume Family

A \$1,000 fund for scholarships to be awarded to students on the basis of need and academic ability.

Handley Memorial

Five one-year tuition scholarships established by the late Miss Agnes Handley, former president of the Seattle University Guild, in memory of her brothers.

Agnes Handley Memorial

A tuition scholarship established in memory of the late Miss Agnes Handley. Awarded on the basis of academic achievement and financial need.

George Hardgrove Scholarship

A tuition scholarship to be awarded to a high school senior on the basis of academic achievement and financial need.

Tom Lee Memorial

An annual award of \$250 to a graduate of O'Dea High School chosen by the principal. Sponsored by members of the Lee family in memory of their brother.

Paul Pigott Memorial

A one-year, full tuition scholarship to be awarded to a high school senior on the basis of academic ability and financial need.

Rosemary McCone Memorial

A full tuition scholarship established in memory of the late Rosemary McCone by a friend. To be awarded to a high school senior on the basis of academic achievement and financial need.

Thomas C. McHugh

A one-year tuition scholarship awarded annually to the valedictorian or salutatorian of the graduating class of Seattle Preparatory School in grateful tribute to a generous benefactor.

Founders

Three one-year tuition scholarships are awarded annually in memory of Rev. Victor Garrand, S.J., and Rev. Adrian Sweere, S.J.

Father Beezer Memorial

Alumni and friends of the late Father Gerald Beezer, S.J., have been contributing to a fund to maintain a scholarship in memory of his many years of devoted service.

President's and Principals' Scholarships

The University annually offers a one-year full tuition scholarship to the top ranking graduating senior in a number of Seattle and Northwest high schools.

Professor Emeritus Scholarships

One-year tuition scholarships honoring these retired faculty members: Rev. Vincent M. Conway, S.J., Richard P. Hickey, Gladys M. Hunter, Rev. Francis J. McGarrigle, S.J., Carl A. Pitzer, Rev. Daniel J. Reidy, S.J.

National Merit Scholarships

Two four-year scholarships awarded to high school seniors on the basis of the criteria established by National Merit Corporation.

Honors Program

Twenty full tuition scholarships for students selected for the University's Honors Program. Renewable for a second year subject to successful completion of the first year.

Lieut. John L. Diehl Scholarship

An annual award of \$100 presented by the Association of the United States Army and Scabbard and Blade to a senior ROTC student on the basis of performance at summer camp.

Music

Several partial and full tuition scholarships are awarded annually by the music department to outstanding vocalists and instrumentalists. Students interested in auditioning for a music scholarship should write to the Head of the Music Department.

Several loan plans are available to qualified students who require financial assistance to help meet educational costs. Requests for information and applications for student loans should be made to: DIRECTOR OF STUDENT LOANS, SEATTLE UNIVERSITY, SEATTLE, WASHINGTON 98122.

Student borrowers must be enrolled as full time students during the regular academic year and must have an academic grade point of at least 2.3. They must also show need for the loan by submitting a report of estimated costs and resources. Students admitted on probation are not eligible for loans.

United Student Aid Funds

USA Funds is a private, non-profit service corporation which endorses low-cost, long-term loans made by local banks to needy college students. The University underwrites loans for its students by contributing a reserve to USA Funds.

Miscellaneous

A number of partial and full tuition scholarships are awarded annually as a result of the generosity of friends of the University, including those for special talents.

Federal Programs**Army Student Nurse Program****Navy Nurse Corps Candidate Program**

Both programs provide for two years of education on an enlisted reserve status during the junior and senior years. Upon completion of the baccalaureate degree and licensure as registered nurses, participants are required to accept commissions as second lieutenants/ensigns in the Army Nurse Corps/Nurse Corps of the Naval Reserve. Active duty time will be determined on the basis of time spent in the student program.

Federal Traineeship Programs

The Public Health Service Act (Section 306) provides traineeship grants offering tuition, fees and a monthly stipend for full time qualified registered nurse students who are completing their final year of undergraduate study and plan to accept full time public health nursing positions upon graduation.

The Public Health Service Act (Section 307) provides traineeship grants offering tuition, fees and a monthly stipend for full time qualified registered nurse students who are completing their final year of undergraduate study and plan to accept full time supervisory, teaching or head nurse positions upon graduation.

Mental Health Training Program

Traineeship grants are available to selected full time undergraduate students who have an interest in enrolling in a graduate program in psychiatric nursing upon completion of the baccalaureate program. These grants are for the final two years of undergraduate study.

Information on these programs may be obtained from the Dean of the School of Nursing.

Army ROTC Scholarship Program

Four-year scholarship providing tuition, fees, textbooks and a stipend of \$50 per month to students who enlist in the U.S. Army Reserve for a minimum period of six years. Information on these scholarships may be obtained from the ROTC Department, Seattle University.

Student Loans

Students may borrow up to \$1,000 per year or a combined total of \$3,000. The loans are repayable over a 36-month period beginning within four months of graduation. A student must have completed the freshman year to qualify for these loans. The interest rate is six per cent simple and starts at the time the money is received.

National Defense Education Act

Qualified students are eligible for funds granted the University under the Student Loan Program of the National Defense Education Act. Under this program a student may borrow up to \$200 per quarter. Three per cent simple interest starts 12 months after the individual has ceased to be a full-time student. The first payment is due 12 months after interest starts, or 24 months after the individual ceases to be a full-time student. The borrower may spread his payments over a 10-year period, or 11 years from the time he ceased

to be a full-time student. A borrower who becomes a school teacher may have 10 per cent of his base loan cancelled for each year he teaches up to a maximum of 50 per cent of his original loan.

***Tuition Plan, Inc.,
Educational Funds, Inc.***

Monthly payment plans by Tuition Plan, Inc. and Educational Funds, Inc., two national firms, offer contracts for educational costs covering one to four years. Repayment is made in equal monthly installments. There are various plans offered for repayment. Life insurance for the duration of the contract, on the parent signing, is an important feature. Reasonable service charges vary according to the plan chosen.

Ravetti Educational Fund

Through the generosity of Armand J. and Bessie M. Ravetti of Seattle, a fund has been established at Seattle University to provide low interest loans to help students meet the costs of tuition, board and room. Among qualified applicants preference for loans will be given to (1) descendants of the donors; (2) graduates of Boys' Town; (3) students of Italian descent; (4) other qualified students.

These loans will bear interest at the rate of two per cent per year for the period of five years following graduation or the cessation of the student's attendance at the University.

General

Lists of part-time employment opportunities are maintained in the campus Placement Office. Jobs with business firms in the Seattle area are listed as well as those on-campus. Such jobs usually include typing, stenography, bookkeeping, sales and clerical work, child care, housework, gardening, driving, food service, and the more specialized types of work such as laboratory assistant, reader or research assistant. Most are on an hourly wage basis. There is no charge to the student for placement.

Work-Study Program

Seattle University has been selected to participate in the Work-Study Program of the Economic Opportunity Act of 1964. Students are selected on the basis of proved financial need and are given jobs on-campus for periods not to exceed 15 hours per week while

Seattle University Student Loan Plan

Students are also eligible to participate in the University's Student Loan Plan. The plan is a convenient way to meet tuition and other academic expenses out of regular income. Funds may be borrowed to cover the costs of tuition, fees, board and room. These loan funds will be available at the beginning of each quarter of the school year. A service charge based upon the rate of \$3 per \$100, with a minimum of \$3, will be made for loans in this program. These loans are to be repaid by the end of the quarter for which they were given.

Nurse Training Act

Qualified students are eligible for funds granted the University under the Student Loan Program of the Nurse Training Act of 1964. Preference will be given students entering nursing programs as first-year students and subsequent loans may be made to enable students to complete their course of study as long as they remain eligible.

Students can receive no more than \$1,000 for any academic year and cannot receive simultaneous support through National Defense Education Act funds. Recipients may cancel up to 50 per cent of their loan for full-time employment as a professional nurse in any public or non-profit institution or agency at the rate of 10 per cent of the amount of the loan and its interest for each complete year of service.

Student Employment

school is in session. Special application forms may be obtained by applying to Director of Placement.

Senior Placement Program

Employer representatives visit the campus each year to discuss career opportunities with graduating seniors. Arrangements are made to alert seniors of such visitations and to provide for individual interviews with management representatives.

Alumni Assistance Program

Employers contact qualified and experienced alumni by listing open positions with the Placement Office. Capable alumni in all disciplines who are unemployed or seeking job betterment can utilize the services of the Placement Office to investigate position referrals, discuss job search techniques or possible career redirection in the light of changing employment opportunities.



ADMISSION

Seattle University selects for admission those students who have demonstrated in their high school work an ability to achieve a level of academic performance necessary to earn a degree.

The University requires that all candidates for admission take the Scholastic Aptitude Test of the College Entrance Examination Board. However, the quality of work done in academic subjects in high school, as evidenced by the grades received, will be the controlling factor in the selection of the Freshman Class. The Board of Admissions will also consider the high school's recommendations, the applicant's interests and goals and other evidence of ability and intelligence.

To be considered for regular admission the candidate must have graduated from an accredited high school and have completed 16 units of college preparatory courses.

Inquiries concerning admission should be addressed to the DIRECTOR OF ADMISSIONS, SEATTLE UNIVERSITY, SEATTLE, WASHINGTON 98122.

Application

In the state of Washington application blanks for those wishing to enter as freshmen may be obtained from high school offices. Out of state applicants may obtain forms by writing to the Director of Admissions. To be considered official, records must be forwarded to the University directly by the high school or registrar of a previous school. High school students seeking admission for the fall quarter may have credentials forwarded by the high school after the appropriate semester.

In making application for admission the candidate must complete the following procedures between February 1 and September 1.

1. Complete page one of the Washington uniform application for admission and leave the entire form with high school counselor to have pages two and three completed and forwarded directly to the Office of Admissions.
2. Submit an application fee of \$10 to the Office of Admissions. Make remittances payable to Seattle University.
3. Take the Washington Pre-College Test when it is given in candidate's vicinity.
4. Take the CEEB Scholastic Aptitude Test, preferably in December or January. Acceptable test dates are March, May or July.
5. If University housing is desired, immediately upon notice of acceptance submit an advance room deposit of \$70. This deposit is not refundable after August 1.
Requests for residence housing from men should be addressed to the Dean of Students, and those from women to the Dean of Women.
6. Submit the medical form provided by Seattle University after acceptance, completed in accordance with instructions contained in the form, to the Student Health Center.
7. Follow carefully any other instructions which are received.

Applicants may expect to receive notification of acceptance or refusal about two weeks after all records and fees are received by the University. However, records of students that do not give clear evidence of

ability to pursue college level work will be held until eighth semester grades are received. Decision by the Board of Admissions on records that are delayed will be made in the month of July.

High school students who do not apply before May 1 should delay submitting applications until after graduation. All applications for admission must be received no later than one month before the beginning of each quarter.

Seattle University includes the Early Decision Plan in its admissions procedures. Students who select Seattle University as their first-choice college and who have clearly demonstrated a high level of scholastic ability are eligible to apply for admission under this plan. Complete admission credentials should be submitted as soon as possible after the close of the sixth semester, but no later than November 1 of the senior year.

Required Records

Students who have completed satisfactory work at another college or university and wish to continue undergraduate work at Seattle University should, in addition to filing an application for admission, request the registrar of each institution attended beyond high school to send two copies of their transcript record to the Director of Admissions. Failure to furnish previous college records when applying for freshman standing or to supply complete college credentials when applying for advanced standing places students under penalty of immediate dismissal.

Although the fall quarter is the usual and most satisfactory time to begin University studies, admission may be granted to qualified applicants for any of the four quarters of the academic year. All applicants must remit the \$10 application fee to the University.

University admission policy is established by the Academic Council and the Board of Admissions. It is administered by the Academic Vice President through the Director of Admissions and Registrar. This policy and consequent requirements and procedures apply to all applicants.

In addition to the requirements for admission set forth in this section of the bulletin, reference must be made for additional or distinctive requisites in the individual colleges or schools of the University. This information will be found in the section of the bulletin dealing with the specific college or school.

From Secondary Schools

Each entering freshman must present evidence of that ability, motivation and sound secondary school education on which success in university work is founded. This evidence is sought

in the quality of his academic record, which must include all credits and grades and a statement that the high school course will be or has been completed with a diploma of graduation;

in the recommendations of his principal or advisers and in test scores and results of the Scholastic Aptitude Test.

Unit Requirements

Admission is granted subject to graduation from an accredited high school and the applicant must present as part of his high school record successful completion of a minimum of 16 units. To count as a unit, a subject must be taught five times a week in periods of not less than 45 minutes for a high school year of 36 weeks. These 16 units must be distributed as follows:

English	3
Mathematics (Algebra, Geometry)	2
History	1
Laboratory Science	1
Electives (approved)	9

A year of algebra or foreign language taken in the seventh or eighth grade is considered equal to one semester of high school work. If the student lacks one of the above required units, he may be permitted in some cases, by way of exception, to enter with provisional standing, but the deficiency must be removed during the freshman year.

A deficiency is considered removed and regular standing is obtained when the student presents evidence of having successfully completed the courses, either at Seattle University, or in approved courses elsewhere. Two courses of three or more quarter hours each will be considered equal to one high school unit.

No college credit is granted for courses taken to remove deficiencies, except the laboratory science unit. No application for a degree will be accepted until all entrance deficiencies have been removed.

Entrance Examination

In addition to the high school record, candidates for admission to the Freshman class must take the Scholastic Aptitude Test of the College Entrance Examination Board and have the scores submitted to the Admissions Office of the University. Any student who has earned less than 44 quarter credits or 30 semester credits in another college or university and wishes to be considered for transfer admission to the University will also be required to submit scores from the Scholastic Aptitude Test of the College Entrance Examination Board.

Test application forms and information concerning testing centers and test dates is contained in the CEEB's Bulletin of Information which may be obtained from high school counselors and principals, or by writing to the Educational Testing Service, P.O. Box 1025, Berkeley, California 94701, or P.O. Box 592, Princeton, New Jersey 08540. Students living in the eastern half of the United States should write to the latter address. The fee for the Scholastic Aptitude Test is to be paid to the Educational Testing Service. Scores will be regarded as official only if received from the Educational Testing Service.

Guidance Tests

All entering freshmen students will be required to take the tests of the Washington Pre-College Testing Program. These test results will be used for placement and counseling but not for admission. The tests may be taken when offered during high school by residents

of the state of Washington. During fall quarter and at the beginning of winter and spring quarters, there will be a special administration of these tests at Seattle University for students who are residents of other states and for Washington students who did not take them in their senior year of high school. The dates of these tests will be announced by the Counseling and Testing Center.

Medical Examination

When notified of their acceptance for entrance to Seattle University, all candidates will receive a medical examination form which must be completed and signed by a physician and returned to the University Student Health Center before the student will be permitted to register.

Placement Examinations

Placement tests in chemistry and foreign languages are administered by these departments during Freshman Orientation and offer entering freshmen the opportunity to show the extent of their preparation in these areas and enable their department head or adviser to determine the level at which they are ready to begin college work.

Mathematics placement is determined on the basis of results of the Washington Pre-College Tests taken either during the senior year in high school or during Freshman Orientation. For additional mathematics placement information, consult the departmental section of this bulletin.

Advanced Placement

Entering students interested in receiving advanced placement in subject matters other than as set forth above should plan to take the Advanced Placement Tests of the College Entrance Examination Board. Information concerning these tests may be obtained from high school guidance personnel or by writing to Educational Testing Service. The Educational Testing Service will forward test results directly to Seattle University. At the discretion of the dean of the school and the head of the department, a student who has been given advanced placement on the basis of the CEEB Advanced Placement Tests may also be granted college credit.

Pre-major Program

The Pre-Major Program is designed for students allowed to enter the University on probation. Guidance is furnished by the Pre-Major Director. Admission to this group, which is of limited enrollment, is determined on the basis of reasonable proof of ability other than the academic record, such as time spent in military service, maturity, change in motivation and test scores.

Admission by Examination

Mature students who give exceptional promise may be admitted without rigid adherence to minimum unit requirements even if they have not graduated from high school or have graduated from a non-accredited high school. Decision as to admission in these cases is reserved to the Academic Vice President and the Board of Admissions. In all cases the student must be directed to the Counseling and Testing Center at Seattle University for guidance and testing.

From Other Universities

A student who has established a satisfactory academic record in another college or university may apply for transfer to Seattle University. Each applicant for transfer must:

1. Submit to the Director of Admissions at Seattle University the application form, application fee and two official copies of transcripts from each college previously attended. One copy of these records will go to the dean of the school or to the department under which the student begins his work.
2. Present a minimum 2.00 academic grade point average for college work attempted prior to transfer. Courses completed at the lowest passing grade in another institution are not acceptable for transfer to Seattle University. However, for purposes of evaluating student records for admission, such courses are included.
3. Arrange with the Counseling and Testing Center at Seattle University for such examinations or advising as may be required by the Academic Vice President and the Board of Admissions. Transfer applicants who have completed less than one full year (44 quarter credits or 30 semester credits) at another university must fulfill secondary school unit requirements for admission to the Freshman class and must submit results of the Scholastic Aptitude Test of the College Entrance Examination Board.

Students who wish to transfer to Seattle University after one or two years in attendance at a junior college are encouraged to apply for admission at the close of a complete academic year. No transfer student with a grade point average below 2.00 will be considered for admission. Students of other colleges or universities who have been placed on probation, suspended, or dismissed will not be considered for admission to Seattle University until at least one year has elapsed. At the end of this period, admission can be made only by the Academic Vice President and the Board of Admissions. In such cases letters of recommendation will be helpful.

In assessing the student's record for admission, grades in non-credit courses will not be counted. For work done in institutions whose academic standing is unknown or for work with private teachers, admission and advanced credit will be granted only upon examination. Examination to establish credit for such work may be taken after completion of 16 quarter hours in residence. This credit is granted according to conditions set down under Credit by Examination (see page 29).

Advanced Standing

For the purpose of guidance and registration the dean or his delegate of the particular school into which the student seeks admission will make a tentative evaluation of transfer credits. All evaluations are subject to the approval of the Academic Vice President and the Academic Council.

The following conditions apply to transfer students in granting credits acceptable to Seattle University:

1. Transfer of junior college credit may be applied to

University freshmen and sophomore years only. Effective January 1966, transfer of junior college credit may not exceed 90 credit hours.

2. For admission with advanced standing no more than three years of academic credit (135 quarter hours) will be accepted toward a bachelor's degree requiring four years of college study. All transfer students must take at least two courses in their major field of study at Seattle University and meet specific philosophy and theology requirements. Consult the departmental sections on philosophy and theology for listing of required courses.
3. Credit earned through extension courses may be accepted if the institution offering such work is a member of the National University Extension Association. Not more than 44 quarter hours of extension credit will be accepted. Credit earned through correspondence shall not exceed 12 quarter hours and must be included in the extension credit total of 44 hours.
4. Credits over 10 years old are not acceptable for transfer.

Foreign Students

Seattle University admits a limited number of students from foreign countries. Specific admission requirements and procedures for all foreign students, except Canadians, are listed on the official foreign student application form. Canadian applicants must meet the admission requirements outlined above for American students and be eligible for admission to the university of their province. The Immigration Form (I-20) necessary to enter the United States is issued to the student upon receipt of the required deposit after he is admitted.

Special Students

Mature individuals may apply to the Board of Admissions for special standing. A special student may take such regular courses as the dean of his school may determine. A special student may not represent the University, nor is he eligible for a degree. By fulfilling the requirements for admission to the college in which he is enrolled, he may become a regular student.

Provisional Students

Admission as a provisional student is granted to:

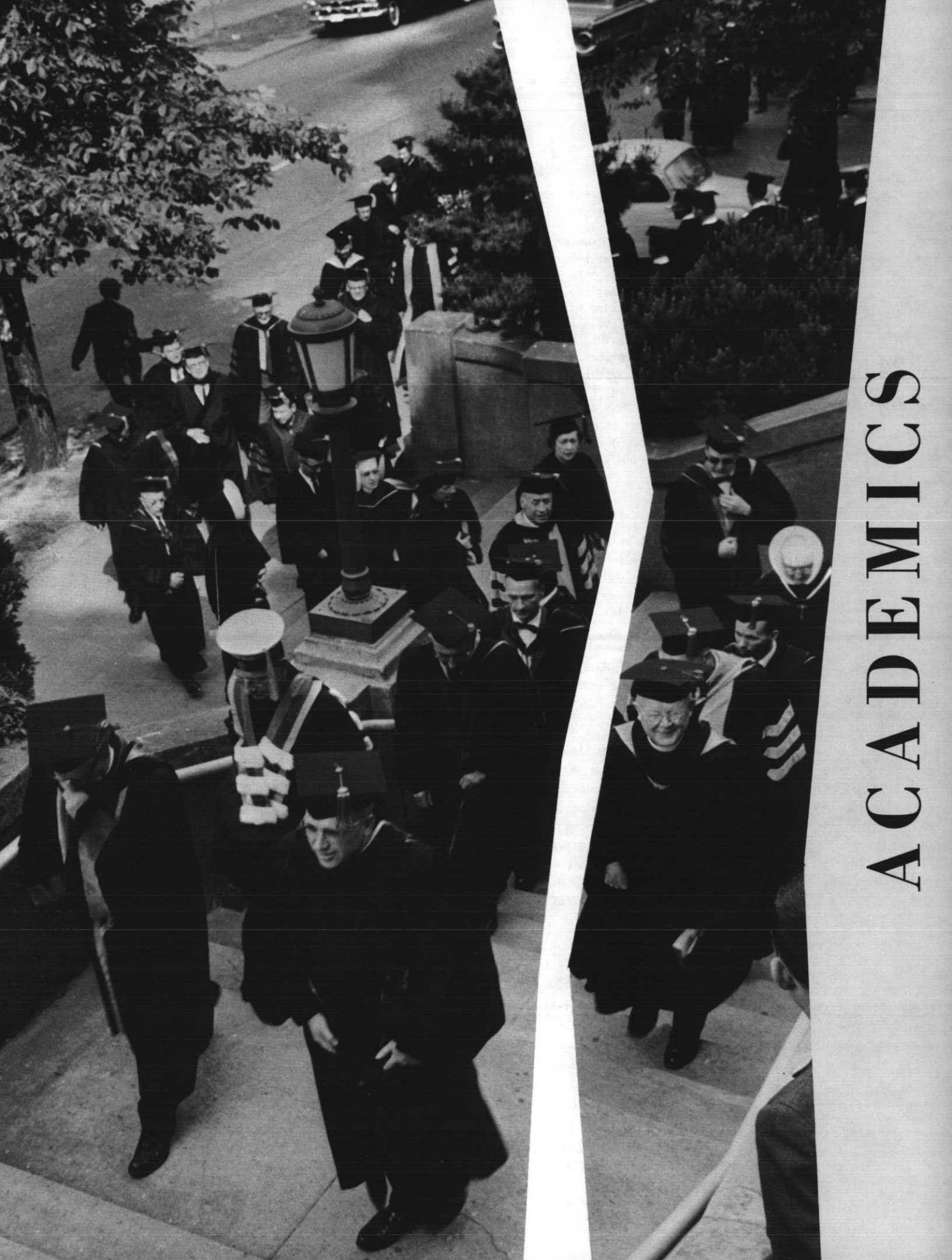
1. Applicants who have not been able to complete all arrangements for formal admission by registration time.
2. Those students admitted with deficiencies.
3. All students with work in progress.

Transient Students

Admission as a transient student is granted to a student in good standing in any recognized college who is taking work to be transferred to his college.

Auditor

Admission as an auditor must be approved by the dean of the school and the instructor of the course. An auditor will not be required to participate in class discussion or laboratory work. Assignments may be made at the discretion of the instructor. A course that has been audited may not be taken for credit.



ACADEMICS

The CORE CURRICULUM

Optional Sequences

Of the following three sequences (Science, Mathematics, Social Science), two are required. Generally, those to be followed are determined by the department of the student's major. For these requirements consult the departmental programs in this bulletin.

SCIENCE SEQUENCE12 hours

Non-science majors who take a science sequence as part of the core curriculum must select the sequence which best complements their high school science courses so that they will receive some formal academic acquaintance (either in high school or college) with both physical science (physics or chemistry) and life science (biology).

Ch 100 Principles of the Physical Sciences 4 hours

BI 101 Life Science I..... 4 hours

and either of the following:

BI 102 Life Science II..... 4 hours

Ch 103 Topics in Chemistry..... 4 hours

or:

Ph 100 Modern Physical Science I... 4 hours

Ph 101 Modern Physical Science II... 4 hours

Ph 102 Modern Physical Science III.. 4 hours

For science majors one of the following is required:

BI 150 Introduction to Biology..... 4 hours

BI 200 Anatomy 4 hours

BI 210 Physiology 4 hours

or:

BI 150 Introduction to Biology..... 4 hours

BI 230 Vertebrate Zoology 4 hours

BI 240 Invertebrate Zoology 4 hours

or:

Ch 111 or 114 General Inorganic Chemistry I..... 4 hours

Ch 112 or 115 General Inorganic Chemistry II..... 4 hours

Ch 113 or 116 General Inorganic Chemistry III..... 4 hours

or:

Ph 105 Mechanics and Sound I..... 4 hours

Ph 106 Electricity and Magnetism I.. 4 hours

and either of the following:

Ph 107 Heat and Light..... 4 hours

Ph 108 Atomic and Nuclear Physics.. 4 hours

or:

Ph 200 Mechanics and Sound II..... 5 hours

Ph 201 Electricity and Magnetism II 5 hours

Ph 202 Light and Modern Physics... 5 hours

Beginning with the 1965 fall quarter all students at Seattle University will be required to complete a basic program of courses called the core curriculum. This new program, which emphasizes integration of knowledge, quality teaching and greater student participation in the learning process, was developed after more than a year's study by a special faculty committee directed to examine existing programs and make recommendations for broadening and strengthening the liberal arts foundation underlying all the University's academic programs.

The core curriculum consists of 80 to 84 credit hours, which include six sequences of courses: four required (60 hours) and two optional out of three (20 to 24 hours).

Required Sequences

PHILOSOPHY SEQUENCE20 hours

PI 125 Introduction to Ancient Greek Philosophy 4 hours

PI 150 The Metaphysics of St. Thomas Aquinas..... 4 hours

PI 175 Introduction to Modern Philosophy 4 hours

PI 225 Philosophy of Man and His Knowledge..... 4 hours

PI 250 Ethics 4 hours

THEOLOGY SEQUENCE16 hours

Th 120 Judaeo-Christian Origins 4 hours

Th 220 Ancient Christian Writers..... 4 hours

Th 320 Christian Wisdom 4 hours

Th 420 Sacramental Life 4 hours

For students who are not Catholic the following course is required and the remaining 12 hours are made up of humanities and social science electives.

Th 110 Sources of Judaeo-Christian Tradition and Culture..... 4 hours

ENGLISH SEQUENCE12 hours

En 110 English Literary Forms..... 4 hours

En 160 Great English Authors I..... 4 hours

and one of the following:

En 140 World's Great Masters I..... 4 hours

En 150 World's Great Masters II..... 4 hours

En 170 Great English Authors II..... 4 hours

En 180 Great American Authors I..... 4 hours

En 190 Great American Authors II..... 4 hours

HISTORY SEQUENCE12 hours

Hs 101 World Civilizations I..... 4 hours

Hs 102 World Civilizations II..... 4 hours

Hs 103 World Civilizations III..... 4 hours

MATHEMATICS SEQUENCE 3 hours

Normally for non-science majors in Arts and Sciences.

Mt 170 Fundamental Concepts of Mathematics I..... 4 hours

Mt 171 Fundamental Concepts of Mathematics II..... 4 hours

Normally for mathematics and science majors:

Mt 111 College Algebra 4 hours

Mt 131 Calculus and Analytic Geometry I..... 5 hours

or:

Mt 131 Calculus and Analytic Geometry I..... 5 hours

Mt 132 Calculus and Analytic Geometry II..... 5 hours

SOCIAL SCIENCE SEQUENCE.....12 hours

Any three of the following four courses:

CF 201 Principles of Economics I... 4 hours

Pls 160 American National Government 4 hours

Psy 100 Introductory Psychology 4 hours

Sc 101 Fundamentals of Sociology I 4 hours

or:

CF 201 Principles of Economics I... 4 hours

CF 202 Principles of Economics II.. 4 hours

CF 335 American Economic History.. 4 hours

or:

Pls 160 American National Government 4 hours

Pls 200 Comparative Parliamentary Democracies 4 hours

Pls 214 Government and the Public Welfare 4 hours

or:

Psy 100 Introductory Psychology 4 hours

Psy 310 Personality Adjustment 4 hours

Psy 340 Social Psychology 4 hours

or:

Sc 101 Fundamentals of Sociology I 4 hours

Sc 102 Fundamentals of Sociology II 4 hours

Psy 340 Social Psychology 4 hours

Recommended Sequences

In addition to the 80 to 84 hours above, either 12 hours of modern language or 12 hours of fine arts are recommended to all students of the University.

LANGUAGE SEQUENCE12 hours

French, German, Spanish, Greek or Latin 101 Language I 4 hours

French, German, Spanish, Greek or Latin 102 Language II 4 hours

French, German, Spanish, Greek or Latin 103 Language III 4 hours

FINE ARTS SEQUENCE12 hours

Art 100 Fine Arts 4 hours

Mu 100 Music History and Literature 4 hours

Sph 150 Introduction to the Theater.. 4 hours

Academic Regulations

Each student is responsible for informing himself of the academic regulations and requirements set forth in this Bulletin of Information and for revisions of same as posted on campus bulletin boards or in other official publications of the University. Failure to meet the requirements or comply with regulations because of lack of knowledge thereof does not excuse the student from being subject to them.

A student's program of study must be approved by a member of the faculty, usually the adviser, at registration. However, such approval does not give official sanction to any failure to meet University requirements nor does it free the student of that responsibility necessary to intelligent personal choice.

The Academic Council has discretionary powers for all cases not covered by the rules and regulations listed in this section. The enrollment and graduation of each student, the awarding of academic credits, and the granting of any award or degree are strictly subject to the disciplinary power of the University. The University reserves the right to change any requirement and to ask a student to withdraw at any time.

Academic Terms

ACADEMIC AVERAGE—Computed by the University for each applicant to determine the quality of high school work in academic subjects such as English, alge-

bra, history, and laboratory sciences. Non-academic high school subjects such as music, physical education, and typewriting are excluded when this average is computed.

ACCREDITED—Certified as fulfilling standards set up by regional accrediting agencies. Indicates that course work is acceptable to other colleges or universities.

ADVANCED PLACEMENT—Admission of freshmen to courses beyond the beginning level. Granted to students who pass designated advanced placement tests.

ADVANCED STANDING—Granted to transfer students who have previous college work which is acceptable to Seattle University.

ADVISER—A member of the faculty designated to assist the student in planning his program of study.

AUDITOR—A student who is permitted to register for courses without obtaining college credit.

BACCALAUREATE MASS—Official academic function of Commencement Week required of all graduating seniors and students.

BASIC RECORD—See transcript.

CERTIFICATION—Granted through the School of Education to graduates who have met State of Washington requirements for teaching in elementary or secondary schools.

CHANGE OF MAJOR—Procedure whereby student declares his intention to change from one subject field into another within the same division (school or college) of the University.

CHANGE OF SCHOOL—Procedure whereby student obtains permission to change from one school of the University into another and officially notifies deans and the Registrar of the change.

CLASS CARDS—Issued during registration. Presented to each instructor as official notification that student is enrolled in his class.

COLLEGE—One of the seven academic administrative divisions of Seattle University, i.e., College of Arts and Sciences, consisting of the dean, his advisory board, the faculty of the college and the students registered in this division.

CORE CURRICULUM—That body of subject matter common to all programs of study and the foundation of Seattle University's liberal education.

CLASSICAL—One of two types of degree programs offered by the College of Arts and Sciences. The classical degree differs from the non-classical in that it requires 12 hours in Latin or Greek courses numbered 300 to 499.

COMPREHENSIVE EXAMINATION—An examination covering the entire scope of the student's major area of study.

COURSE OF INSTRUCTION—A complete set of lectures, quizzes, recitations, student exercises, laboratory periods, and examinations on a given subject.

COURSE OF STUDY—See program of study.

CREDIT BY EXAMINATION—Procedure to obtain credit for work done in private study or for work not otherwise acceptable to the University.

CREDIT HOUR—Unit of instruction. See quarter hour.

CUMULATIVE GRADE POINT AVERAGE—The quality measurement of each student's university work computed by dividing total quality points by total credits attempted.

CURRICULUM—An established program of study leading toward a degree in a particular subject field.

DEFICIENCY—Lack of credit in a course required for graduation, or lack of credit in subject matter required for entrance.

DEGREE—Awarded by the University upon successful completion of a specific program of study.

DEGREE PROGRAM—See Program of Study.

DEPARTMENT—A division of a school or college of the University consisting of those faculty members who are actively engaged in instruction, administrative or research work in a specific subject field under the direction of a head.

ELECTIVE—A subject chosen by the student not demanded by his program of study.

FIELD OF CONCENTRATION—Student's major field. See major.

FIRST HUMANITIES—Program of study within the College of Arts and Sciences consisting of core curriculum courses. This program is usually selected by entering students who have not yet chosen a major field.

GRADE POINT AVERAGE—An average computed on the basis of numerical values assigned to the letter grades received by students. To determine this average the quality points assigned to the letter grades are totaled and divided by the total number of credit hours attempted.

GRADUATE STUDENT—One who has received his bachelor's degree and is taking additional college work or is pursuing a more advanced degree.

HUMANITIES—Cultural subjects as distinguished from social sciences (history, psychology, or sociology) and pure science.

I-20 FORM—United States Immigration Form No. 20 issued by the University to students from foreign countries who have been accepted for admission.

INTERNSHIP—A period of at least one year when a student actually works in a hospital before the degree in medical technology or medical records is awarded.

LOW LIST—A warning list published quarterly of students whose poor academic work in one quarter if not immediately improved will result in probation or dismissal.

MAJOR—The specific field of study selected by a student, generally requiring a minimum of 48 quarter hours.

MATRICULATE—Enrollment at the University for the first time as a regular student to pursue a degree.

MAKE-UP EXAMINATIONS—Special examinations prepared by an instructor for students who for serious reason miss a scheduled examination.

MINOR—The secondary field of concentration selected by a student.

ORIENTATION WEEK—A week preceding fall quarter in which entering freshmen students are introduced to the University.

PLACEMENT TESTS—Tests in a specific field administered to entering students to determine the level of achievement before assigning his college courses.

PRE-MAJOR—The classification of students who enter the University on probation.

PREREQUISITE—A required course which must be completed before a student is permitted to register for a more advanced course.

PROBATION—Status resulting from academic performance below the minimum university level.

PROVISIONAL STUDENT—One who is admitted with an entrance requirement unsatisfied.

PROGRAM OF STUDY—The curriculum in a given subject matter field. A series of courses assigned by schools and departments of the University which must be completed by the student before a degree is awarded.

QUALITY POINTS—The numerical values assigned to letter grades. See the section of this bulletin on the grading system.

QUARTER HOUR—The unit of instruction used in computing University graduation requirements. A quarter hour of credit is given for each hour of class per week for a minimum of eleven weeks. A two-hour laboratory period is considered the equivalent of one hour of lecture and/or recitation work, except in the Schools

of Engineering and Nursing. To earn four quarter hours of credit a student attends the class four hours each week for eleven weeks.

RATIO STUDIORUM—Traditional plan of studies of the Society of Jesus.

READMISSION—Procedure whereby a student who has not been in attendance for one or more quarters is permitted to register for continued course work.

REGISTRATION—Official enrollment in the University. Process in which student appears in person and selects his courses each quarter.

REGULAR STUDENT—A fully matriculated student pursuing a degree program.

SPECIAL STUDENT—A non-matriculated student taking course work which is not applicable toward a degree until regular standing is achieved.

SCHOOL—An academic and administrative division of the University consisting of a dean, his advisory board, the faculty of the school, and the students registered in the school.

SPECIFIC CURRICULUM—In addition to the core curriculum required of all students, each individual student selects a specific curriculum or field of concentration. These curricula are offered by the component schools of the University according to degree requirements.

TRANSCRIPT—The University record of all the courses for which a student registers. An official transcript is one bearing the University's seal. An unofficial transcript bears no seal and is not acceptable as a genuine copy of a student's record by other universities.

TRANSFER CREDIT—Credit awarded to a student for work completed at another college or university.

TRANSFER STUDENT—One who is admitted to Seattle University having previously completed work at another college or university.

UNIT OF INSTRUCTION—See Quarter Hour.

WITHDRAWAL—Procedure whereby student notifies the University that he will not complete a course for which he is registered.

Attendance

Any student absent from 15 percent or more of classes or laboratory sessions will be dropped from the class with a failing grade. Absences are recorded from the first scheduled class meeting regardless of the first day of attendance. Attendance requirements extend to such functions on the University calendar as the Mass of the Holy Spirit, annual retreat and Baccalaureate Mass.

Student Classification

Regular undergraduate students of the University are classified as follows:

Freshmen—less than 44 quarter hours of credit completed

Sophomore—at least 44 but less than 90 quarter hours of credit completed

Junior—at least 90 but less than 135 quarter hours of credit completed

Senior—more than 135 quarter hours of credit completed.

Course Numbering System

The course numbering system at Seattle University is as follows:

100 to 199 are freshman courses

200 to 299 are sophomore courses

300 to 399 are junior courses

400 to 499 are senior courses

500 and above are graduate courses—graduate standing required to register for courses numbered 500 or above.

Credit by Examination

Examinations for advanced credit in courses offered by the University may be taken by a student for work done in private study or on subject matter taken at a non-accredited college or university, with the following restrictions:

1. Student must be currently registered at Seattle University.
2. No student may take an advanced credit examination in a course in which he has already been registered.
3. The maximum number of credits obtainable by advanced credit examination is 28, not more than 12 of which may be obtained in one subject matter field. All credits obtained by examination will be counted as extension credit and included in the maximum 44 extension credits allowed.
4. No credit will be granted unless the applicant has earned a minimum of 12 resident credits with a minimum grade-point average of 2.50.
5. No student within a given field of study may receive advanced credit in subject matter more elementary than that for which he has previously received credit.
6. No student will be permitted to repeat an examination for advanced credit.
7. No student may take examinations for more than 12 advanced credits in any one quarter.
8. No student may receive advanced credit by examination for lower division foreign language courses in his native language.
9. A student who wishes to qualify for credit by examination must apply to the Registrar and Treasurer for approval.

Credit Hour Load

The normal credit hour load is 16 hours per quarter. No student may carry excess credit hours without permission from the dean of his school, which may be obtained before or during registration.

Students on academic probation may be required by the Academic Vice President and/or the dean of his school to carry less than the normal credit hour load. Each student is responsible to his dean for judging the correct ratio between credit hour load, cocurricular activities and outside employment so that he has adequate time for academic preparation.

Dismissal

Any student who fails eight quarter hours or more in any one quarter is subject to dismissal from the University. The Academic Council shall decide when a student on probation, because of continued low scholar-

ship, shall be dropped. In order to be reinstated the student must petition the Academic Council through the Academic Vice President. A student withdrawing voluntarily from the University is entitled to a statement of honorable dismissal if he is not liable to dismissal on account of scholarship, absence, breach of discipline, or financial indebtedness to the University.

Examinations

Examinations in all courses are regularly held at the middle and end of each quarter, and at such other times as the instructor may determine. Absence from an announced written examination is excusable at the discretion of the instructor and subject to review by the Academic Vice President. Students absenting themselves from a scheduled examination without justifiable cause will receive a failing grade for the examination.

Make-up examinations assigned by an instructor for students excused from a scheduled one are administered by the Counseling and Testing Center. Arrangements for a make-up examination and payment of the required fee are the responsibility of the student.

Change in Grade

Once a grade is recorded it can be changed only by the Academic Vice President on the written faculty action sheet completed by the instructor and countersigned by the department head or dean of the school. In no case will the grade be changed after 30 days following the issue of the student's quarterly grade report.

Grade Reports

Student quarterly grade reports (unofficial transcripts) are issued at the end of every quarter. Additional student copies may be obtained for a fee of 50 cents. Fall and winter quarter grade reports are not available until registration for the new quarter. Spring and summer quarter grade reports are mailed to the student. The University does not hold itself responsible for grade report errors unless the Registrar is notified of the error within six months after the issue of the transcript.

Grading System

The University uses a letter grade to indicate the level of individual student achievement. Each letter grade has a quality point value assigned as the unit of measurement. The total number of quality points earned for any course is obtained by multiplying the credit hours for the course by the quality point value assigned for the grade achieved. The quality point value is assigned to each letter grade as follows:

- A.....4 quality points
- B.....3 quality points
- C.....2 quality points
- D.....1 quality point
- E.....0 quality points

The grades of I, W, S, or N have no quality point value.

Each student is required to maintain a C average, which is equivalent to a 2.00 grade point average. The grade point average is computed by dividing the total number of quality points achieved in one quarter by the total number of credit hours attempted.

The University follows the letter grading system shown below.

Grade	Percentage Value	Descriptive Value
A	93-100	A superior student; shows ability to use factual knowledge in reaching independent conclusions and can synthesize facts into a logical and coherent pattern; shows interest in relating collateral reading to the principles developed in course work; scholarship exceeds requirements.
B	85-92	An above average student; knowledge is very good, scholarship meets all requirements, information is complete but not detailed.
C	77-84	Average student; knowledge is good; scholarship meets assignments, but information is incomplete.
D	70-76	Below average student; knowledge is fair, scholarship does not meet assignments; essential information is lacking or false information given.
E	Below 70	A failing student.
W	Withdrawal	Official withdrawal during the first six weeks of the quarter.
EW	Failing Withdrawal	Unofficial withdrawal at any time during the quarter, or failing withdrawal after the first six weeks of the quarter. To be computed as an E in calculation of the grade point average.
I	Incomplete	At the discretion of the instructor the student is given this grade when as a result of serious illness or other justifiable cause the work cannot be completed. The student must complete the work within thirty days after the beginning of the next quarter or a grade of E will automatically be recorded for the course. To remove the incomplete the student must obtain the official removal card and pay the required fee within the 30-day period. Spring quarter incompletes must be removed within 30 days after the beginning of fall quarter.
N	No grade	A suspended grade for courses in which work is not scheduled for completion until after the quarter closes, i.e., thesis or research courses.
S	Satisfactory	A satisfactory grade given for thesis or in non-credit courses such as basic algebra and geometry.
	Audit	Course for which no credit is given. May not be repeated for credit.

Honor Roll

Students who achieve a 3.50 or higher grade point average for any quarter will be included on the honors list published by the Registrar. Honor roll students are entitled to unlimited absences in courses they are taking the quarter following that in which they obtain the required grade point. However, they are expected to be present for all announced examinations and for laboratory sessions. In the case of seminar classes, attend-

ance is required at every session. The privilege of auditing a single lecture or all sessions of classes for which they are not registered is granted to honor roll students with the permission of the teacher.

Probation

If during any quarter a student falls below the standard he must maintain in order to graduate, he may be placed on probation by the Academic Vice President and given the opportunity to improve the quality of his work before final dismissal. A student will be placed on probation if his cumulative grade point average falls below 2.00.

At the discretion of his dean a student on academic probation may be required to reduce the number of credits carried per quarter and his participation in extra-curricular activities may be curtailed. Probation may extend for two quarters after the initial warning before dismissal is mandatory.

Readmission

Students who have been absent from Seattle University for one or more quarters and students who have attended another school since withdrawing from Seattle University are required to fill out an application-for-readmission form. A re-entering student who has attended another school since his withdrawal from Seattle University must arrange for two copies of his transcript to be submitted to the Registrar before his application for admission can be considered by the Board of Admissions.

Registration

Newly admitted students and returning students must present themselves at the University for registration on the date specified in the calendar or elsewhere by the Registrar. All students, including auditors, transfer students and those readmitted after a lapse in attendance, must register in person.

No registrations are permitted after the second class day. Payment of the late registration fee of \$10 for the first day and the further fee of \$10 for the second day is required. Students registering late are held responsible for absences thus incurred.

Registration is completed only when fees are paid and approved registration cards are turned in to the Treasurer's office. No person may attend any University course for which he has not registered either as a student or as an auditor.

Change of Registration

Students are held accountable for completion of every course entered on registration cards. If it is necessary to drop or add a course or to otherwise change a program of study, the student must obtain a change of course card from the Registrar's office and present it to his adviser or dean for approval. This card and the required fee must be returned to the Treasurer within the specified time limit. No course may be added or changed after the fifth day of class. A student who drops or changes courses without following this procedure will receive an EW (unofficial withdrawal) which will be computed as a failing grade in the quarterly and cumulative grade point average.

Repeating a Course

Students who receive a grade of D, E, or EW may repeat the course. In such cases the grade received the second time shall be the one counted in computing the grade point average required for graduation. The grade earned the second time cannot be higher than a C. For the purpose of determining University graduation honors, however, only the grade received the first time will be counted.

Transcripts

Students may obtain official transcripts by completing the transcript request form at the Registrar's office. The first official transcript will be sent free of charge, but each additional copy costs \$1.

Seattle University will not issue a transcript to any third party unless the student or graduate files a written request with the Registrar and supplies the necessary name and address. Parents or guardians may receive a copy of the student's record on written request to the Registrar's office.

Letters of recommendation or copies of transcripts should be requested at least one week before they are required. Transcripts cannot be issued during the period of registration, examinations, or commencement, nor will they be issued if the student has a financial or property obligation to the University.

The University does not hold itself responsible for any error on a transcript which is not brought to the attention of the Registrar within six months of issue.

Transfer within the University

To transfer from one school of the University to another or from one department to another (change of major) the student must follow the procedure here outlined:

Obtain a change of school request from the Registrar and present it to the dean of the school from which withdrawal is sought. When the form is approved by this dean it is presented to the dean of the school in which the student wishes to enroll. If approved by the new dean the form is returned to the Registrar and the student's record is altered accordingly. Students may be admitted to the School of Engineering from other schools of the University with a grade point average of 2.00 provided they are not deficient in algebra, plane trigonometry or laboratory science.

Withdrawal

The Registrar's office must be officially notified when a student withdraws from one or more of his courses. Failure to comply with the withdrawal procedure will result in a failing grade (EW—unofficial withdrawal) being entered on the student's record. The withdrawal card is obtained from the Registrar and presented to the adviser, instructor, dean and treasurer in that order for approval and signature. In an emergency, notification of withdrawal may be made by telephoning the Dean of Students, dean of the school or Registrar.

The official withdrawal is completed only when the approved card and required fee are presented to the treasurer within the specified time limit. A grade of W will be allowed during the first six weeks of the quarter. After this period no withdrawals are permitted and a grade of E or EW will be assigned.

Degrees and Honors

30

degrees

Official Commencement Exercises are held once a year in May or June. Students completing course requirements at the close of summer, fall or winter quarter will receive diplomas at the succeeding Commencement. All responsibility for fulfilling the requirements for graduation rests with the individual student.

Application for a Degree

Application for a degree must be made at the Office of the Registrar within the period indicated in the University calendar or other official publications. Candidates for a degree normally file applications during the quarter preceding their final registration. A receipt for the graduation fee must be presented before the Registrar may issue the application forms.

Graduation with Honors

Graduation with honors requires the earning of at least 90 quarter hours of credit in residence as a junior and senior at Seattle University.

A candidate for an undergraduate degree with a cumulative grade point average of 3.25 graduates *CUM LAUDE*; one with a cumulative grade point average of 3.50 graduates *MAGNA CUM LAUDE*; one with a cumulative grade point average of 3.75 graduates *SUMMA CUM LAUDE*.

Degree Requirements

Candidates for an undergraduate degree must meet the requirements listed below. Requirements for advanced degrees are given in the section on the Graduate School.

1. Core curriculum requirements of the University as described on page 24 of this bulletin and specific requirements of the college or school from which the student expects to graduate must be fulfilled.
2. A minimum number of quarter hours of credit as follows:
 - 196 credits for those completing course work in June or August 1965
 - 192 credits for those completing course work in December 1965
 - 188 credits for those completing course work in March 1966
 - 184 credits for those completing course work in June or August 1966
 - 180 credits for those completing course work after September 1966.

However, only students matriculating as freshmen beginning September 1963 or later, and transfer students matriculating January 1966 or later are eligible to graduate with 180 credits. Students who matriculated before these dates will be required to meet minimum degree requirements in effect at the time they were last enrolled full-time.

3. A minimum of 20 hours in philosophy and 16 hours in theology are required in all degree programs effective September 1965. See sections on philosophy and theology for specific requirements.
4. The senior year must be spent in residence at the University, which shall be understood to mean the final 45 quarter hours of degree requirements, and the class work is to be taken in the University classrooms under the direction of members of the faculty.
5. Completion of all degree requirements within 10 years of the date on which the college work was begun. Students who were in attendance prior to October 1951 are not affected by this regulation.
6. Those working for a second bachelor's degree must satisfy a minimum of 48 additional hours toward the degree under the direction of the dean and department head concerned. There is also a 45 hour residence requirement and the required courses in philosophy and theology must have been completed at Seattle University or elsewhere before the degree is awarded. With the exception of the Bachelor of Arts degree students may work toward more than one degree simultaneously and may be awarded both degrees simultaneously, provided at least 48 additional hours are earned for the second degree.
7. Satisfaction of all financial obligations toward the University.
8. All candidates for degrees must be present at the Baccalaureate and Commencement exercises to receive degrees. Formal petition must be made to the Academic Vice President requesting graduation "in absentia."

Special Awards

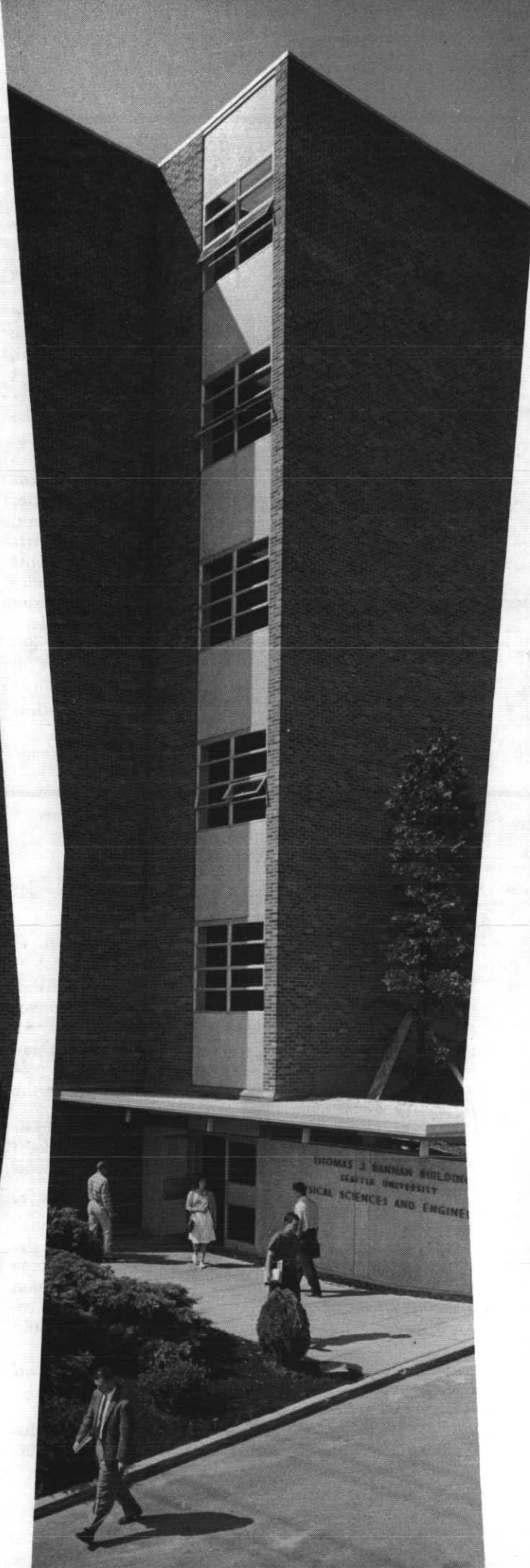
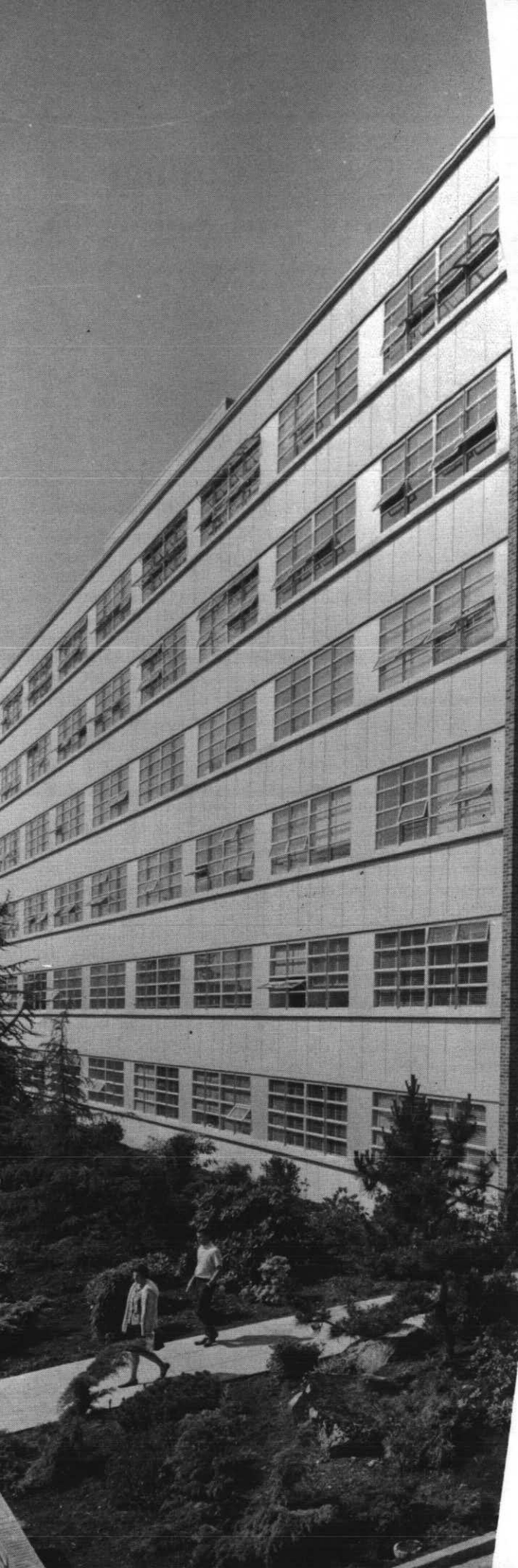
THE PRESIDENT'S CUP—Awarded to the graduating senior who has maintained the highest scholarship throughout the four years of college work.

THE BISHOP SHAUGHNESSY MEDAL—In memory of the Most Reverend Gerald Shaughnessy, S.M., S.T.D., late Bishop of Seattle, is awarded to the graduating senior maintaining outstanding grades in Philosophy and Theology.

EUGENE F. FABRE AWARD—Presented annually by Alpha Sigma Nu to the senior male student who has done the most to promote scholarship during his time at the University.

LOYALTY CUPS—Presented by the Seattle University Alumni to the students chosen by the faculty and student body as outstanding in their loyalty, leadership and participation in student activities.

BILL BATES' CUP—Annually presented by the Silver Scroll to the graduating senior who most nearly resembled, in the opinion of the faculty and student body, the spirit of Bill Bates, Class of 1943.



ARTS and SCIENCES

College of Arts and Sciences

Robert I. Bradley, S.J., Ph.D., Dean

Objective

The College of Arts and Sciences has for its objective the development of personality—integral and liberal, Christian and humane. The instrumentalities it employs to attain this objective are the traditional principles and structures of Jesuit education, of which in the ensemble of the University it is the natural custodian and guide.

Curriculum

Pursuant of this objective and these instrumentalities and commensurate with its position as the oldest and largest school of Seattle University, the College of Arts and Sciences has a dual role: 1) for all the students of the University it provides the programs and faculty of the core curriculum—the primary instrument of Jesuit higher education; and 2) for its own students it offers, beyond the core curriculum, programs and faculty guidance toward graduate proficiency in one or more of the various arts and sciences.

Organization

The College comprises 24 administrative subdivisions, of which 18 are departments in a specific academic subject. They are:

Art	Journalism	Physics
Biology	Languages	Political Science
Chemistry	Mathematics	Psychology
English	Military Science	Sociology
History	Music	Speech
Home Economics	Philosophy	Theology

The program divisions are:

First Humanities	Predental	Premedical
Honors	Prelaw	Pre-Major

Each department head or program director, in collaboration with his proper or assigned faculty, arranges study programs and counsels individual students. All programs are coordinated and supervised by the Dean of the College. Students wishing to inquire about programs in detail should consult either the Dean or the respective department head or program director.

Accreditation

Northwest Association of Secondary and Higher Schools

Admission Requirements

Students entering the College must satisfy all entrance requirements for the University as outlined in the Admission section in this bulletin. In addition, some departments list further requirements for admission into certain major programs. Concerning these the respective departmental sections in this bulletin should be consulted.

Degrees Offered

Bachelor of Arts (Classical)

Bachelor of Arts (Non-Classical)

with a major in: Economics, English, History, Humanities, Journalism, Languages, Mathematics,

Music, Philosophy, Political Science, Psychology, Social Science, Sociology.

Bachelor of Science

with a major in: Biology, Chemistry, General Science, Home Economics, Mathematics, Medical Records, Medical Secretary, Medical Technology, Military Science, Natural Science, Physics, Psychology.

General Program Requirements

Students in the College of Arts and Sciences must satisfy the core curriculum requirements of the University given on page 24 of this bulletin. In addition all candidates for the Bachelor of Arts degree must complete either 12 hours of foreign language or 12 hours of fine arts and a fourth core course in English. These additional core sequences are not required of candidates for the Bachelor of Science degree, but are strongly recommended.

For the degree of Bachelor of Arts (Classical), in addition to these general requirements, the following must be fulfilled: 12 hours of courses numbered 300 to 499 in either Latin or Greek; and 8 hours of mathematics if the core curriculum option was science, or 8 hours of science if the core option was mathematics. Certain additional specific requirements are set by the department or program division in which the student's major program is pursued. For these requirements consult the respective sections in this bulletin.

Subject Majors

In all programs having a specific subject major, the number of required courses and hours varies according to the department or program division. The minimal number required in any subject major is 44 hours; majors in departments having core sequences must consist of 32 hours beyond the core sequence.

Area Majors

Rather than in a specific subject, four major programs concentrate in an area: humanities or social science (for the Bachelor of Arts degree); general science or natural science (for the Bachelor of Science degree). For all such area majors, except general science, the normal requirement is 48 hours beyond the core curriculum in some combination of related subjects. Suggested combinations are: 32 hours in one subject and 16 in another; 28 hours in one, 12 in a second, and 8 in a third; or 20, 16 and 12. For general science the requirement is 80 hours of science, with at least 24 hours in each of two subjects. The selection of subjects and their definitive combination is the responsibility of the head of the department in which the greatest number of courses will be taken.

Objectives

The aim of the Art department is to equip students, university trained and matured, with the competencies and skills requisite for the successful practice of art.

Degree Offered

Bachelor of Arts in Humanities

General Program Requirements

Students in art must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of social science, 12 hours of science or 8 hours of mathematics and 12 hours of modern language.

Departmental Requirements

UNDERGRADUATE AREA MAJOR—60 hours divided between art and an appropriate related field or fields according to one of the following credit-hour breakdowns: 40-20, 32-16-12, 24-20-16.

UNDERGRADUATE MINOR — 24 hours in art which must include: Art 121, 122, 123, 131, 132, 133, 201, 211 and 212.

Bachelor of Arts in Humanities

Freshman year

Art 121, 122, 123, 131, 132, 133. 12 hours
 English 110, 160 and core elective. 12 hours
 History 101, 102, 103. 12 hours
 Philosophy 125, 150, 175. 12 hours

Sophomore year

Art 201, 211, 212. 12 hours
 Philosophy 225, 250. 8 hours
 Science or mathematics and elective. 12 hours
 Social Science 12 hours
 Theology 120 4 hours

Junior year

Art 12 hours
 English core elective. 4 hours
 Language 101, 102, 103. 12 hours
 Theology 220, 320, 420. 12 hours
 Electives 8 hours

Senior year

Art 401, 420 and electives. 24 hours
 Electives 12 hours

Total. 180 hours

Art Courses

Art 100 Fine Arts 4 credits

A synoptic view of art history; period and national styles; principles and implications of design, with cross-reference to music and drama.

Art 121 Drawing 2 credits

Art 122 Drawing 2 credits

Art 123 Drawing 2 credits

Studies of line and value in the delineation of form; training in awareness and perception; structure and space indication; essential relationships of organic forms.

Art 131 Design 2 credits

Art 132 Design 2 credits

Art 133 Design 2 credits

Primary concepts and analysis of structure; problems of contemporary design; form in three-dimensional design.

Art 201 Art and the Beautiful 4 credits

(101) Art, its relations and implications.

Art 211 History of Art 4 credits

Art 212 History of Art 4 credits

(111) A survey of the arts of the Western world from the earliest times to the Renaissance and from the (112) Renaissance to the present.
 (113)

Art 310 Art of the Far East 4 credits

A synoptic view of the arts of India, China, Japan and other culturally related peoples. Offered every third year.

Art 321 Advanced Drawing 2 credits

Art 322 Advanced Drawing 2 credits

Art 323 Advanced Drawing 2 credits

Study of the human form; special problems in group composition. Prerequisite: Art 123.

Art 331 Advanced Design 2 credits

Art 332 Advanced Design 2 credits

Art 333 Advanced Design 2 credits

Problems of practical application; advertising art; synthesis and research. Prerequisite: Art 133.

Art 334 Graphics 2 credits

Art 335 Graphics 2 credits

Art 336 Graphics 2 credits

Principles and techniques of print-making; special problems; synthesis and research.

Art 346 Painting 2 credits

Art 347 Painting 2 credits

Art 348 Painting 2 credits

A study of the principles and practices of rendering in paint; complex composition; advanced problems.

Art 351 Sculpture 2 credits

Art 352 Sculpture 2 credits

Art 353 Sculpture 2 credits

Principles and practices leading to a realization of the nature of form; dependence of design on materials; advanced problems.

Art 401 Aesthetics Seminar 4 credits

Historical impacts and influences in the development of aesthetic theory; special questions. Prerequisite: Permission of department head.

- Art 411 Pre-Columbian Art** 4 credits
Art of the Americas from its earliest manifestations to the 15th century. Offered every third year.
- Art 412 American Art** 4 credits
Art of the United States from colonial days to the present. Offered every third year.
- Art 420 Art History Seminar** 4 credits
The relevance of sacred and profane history to the story of art; special questions. Prerequisite: Permission of department head.
- Art 446 Advanced Painting** 2 credits
Art 447 Advanced Painting 2 credits
Art 448 Advanced Painting 2 credits
Experimental research toward the development of a creative and personalized idiom; synthesis and research. Prerequisite: Art 348.

- Art 449 Advanced Painting** 2 credits
Advanced work in painting; Prerequisites: Art 448. Permission of department head.
- Art 451 Advanced Sculpture** 2 credits
Art 452 Advanced Sculpture 2 credits
Art 453 Advanced Sculpture 2 credits
Experimental research toward the development of a creative and personalized idiom; synthesis and research. Prerequisite: Art 351.
- Art 454 Advanced Sculpture** 2 credits
Advanced work in sculpture. Prerequisites: Art 453. Permission of department head.
- Art 471 Independent Study** 1-4 credits
Advanced work in academic or experimental research. By arrangement with permission of department head. Prerequisite: Advanced standing in Art.

Biology

Richard A. Nevé, Ph.D., *Head*

Objectives

The objectives of this program are to provide a liberal education with a concentration in biology preparatory for graduate work or for training in professional areas of specialization. The department also supervises medical and dental curricula as well as the allied professional programs in medical records, medical secretarial science and medical technology.

Degrees Offered

Bachelor of Science
Bachelor of Science in Natural Science
Bachelor of Science in Medical Records
Bachelor of Science in Medical Secretarial Science
Bachelor of Science in Medical Technology
Master of Science

General Program Requirements

Students in biology and allied medical programs must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin, and those of the College of Arts and Sciences on page 32. The Bachelor of Science program requires 12 hours of social science, 12 hours of chemistry and 12 hours of modern language. The Bachelor of Science in Natural Science program requires 12 hours of social science, 12 hours of chemistry, 4 additional hours of English, 12 hours of modern language and 12 hours of fine arts. For core sequences required in the allied medical programs see curriculum outlines which follow.

Departmental Requirements

BACHELOR OF SCIENCE — 48 hours of biology which must include BI 150, 230, 240, 250, 350 and 28 hours selected at the direction of the adviser. As a related minor students are required to complete 22 hours in chemistry and Ch 219 or BI 455 is recommended. Mathematics 131 and Physics 108 are recommended for premedical students.

BACHELOR OF SCIENCE IN NATURAL SCIENCE—40 hours of biology and 20 hours of chemistry, physics or mathematics. This degree may be obtained by students who desire a concentration in biology but fewer requirements in the allied physical sciences.

UNDERGRADUATE MINOR—24 hours of biology selected at direction of adviser.

MASTER OF SCIENCE—40 hours of advanced biology which must include BI 501, 502, 505, 550, 560, 561, 580, 586, 600 and 601. Students seeking this degree should consult the Graduate School section of this bulletin for further requirements.

Bachelor of Science

Freshman year

Biology 150, 230, 240	12 hours
English 110, 160, core elective	12 hours
Mathematics 111	4 hours
Philosophy 125, 150, 175	12 hours
Electives	8 hours

Sophomore year

Biology 250, 350, elective	12 hours
Chemistry 111, 112, 113 (or 114, 115, 116)	12 hours
History 101, 102, 103	12 hours
Philosophy 225, 250	8 hours
Theology 120	4 hours

Junior year

Chemistry 235, 236, and 219 or BI 455	14 hours
Language 101, 102, 103	12 hours
Physics 105, 106, 107	12 hours
Theology 220, 320, 420	12 hours

Senior year

Biology electives	24 hours
Social Science	12 hours

Total 182 hours

Bachelor of Science in Natural Science

Freshman year	
Biology 150, 230, 240	12 hours
English 110, 160, core elective	12 hours
Mathematics 111	4 hours
Social Science	8 hours
Philosophy 125, 150, 175	12 hours
Sophomore year	
Biology 250, 350, 351	12 hours
Chemistry 111, 112, 113 (or 114, 115, 116)	12 hours
History 101, 102, 103	12 hours
Philosophy 225, 250	8 hours
Theology 120	4 hours
Junior year	
Biology elective	4 hours
Chemistry 235, 236	10 hours
Language 101, 102, 103	12 hours
Theology 220, 320, 420	12 hours
Electives	10 hours
Senior year	
Biology electives	12 hours
Fine Arts	12 hours
English core elective	4 hours
Social Science	4 hours
Elective	4 hours
Total	180 hours

Bachelor of Science in Medical Records

Students in this program spend three years in academic work on the campus and fifty weeks in medical records training in an approved hospital. Upon completion of the internship they are eligible to apply for registration with the American Association of Medical Records Librarians. Thirty-six quarter hours of credit are granted toward a degree for the hospital training work, provided the training is taken after at least one year of academic work on the campus of Seattle University. Credit is given only at the time of graduation from Seattle University. Students must pass a 45 word per minute typing test.

Freshman year	
English 110, 160 core elective	12 hours
Fine Arts: Art 100, Music 100, Speech 150	12 hours
History 101, 102, 103	12 hours
Philosophy 125, 150, 175	12 hours
Sophomore year	
Commerce and Finance 201, 230, 231	12 hours
Language 101, 102, 103	12 hours
Mathematics 170, 171	8 hours
Philosophy 225, 250	8 hours
Theology 120	4 hours
Elective	4 hours
Junior year	
Biology 200, 210, 220	12 hours
Commerce and Finance 202, 311, 314, 316	14 hours
Theology 220, 320, 420	12 hours
Electives	10 hours
Senior year	
Internship—in an approved hospital	36 hours
Total	180 hours

Bachelor of Science in Medical Secretarial Science

Freshman year	
English 110, 160, core elective	12 hours
Fine Arts	12 hours
History 101, 102, 103	12 hours
Philosophy 125, 150, 175	12 hours
Sophomore year	
Biology 200, 210, 220	12 hours
Commerce and Finance 216, 217, 218, 220, 221, 222	18 hours
Philosophy 225, 250	8 hours
Theology 120	4 hours
Junior year	
Commerce and Finance, 201, 202, 230, 231, 219, 316, 317	24 hours
Social Science	4 hours
Theology 220, 320, 420	12 hours
Elective	4 hours
Senior year	
Commerce and Finance 250, 311, 314, 475	16 hours
Social Science	4 hours
Electives	28 hours
Total	180 hours

Bachelor of Science in Medical Technology

Students in this program spend three years in academic work on the campus and a fourth year of internship in an approved hospital. Those who successfully complete the year of internship will be granted 34 hours of credit toward a degree from Seattle University and are eligible for certification by the Registry of Medical Technologists. The 34 credits for internship will be granted only to those who have spent at least one full year on campus prior to interning. Hence such credits are not granted to students who have interned from some other school and come to Seattle University to complete their degree. BI 200 and 210 are recommended.

Freshman year	
Biology 150, 230, 240	12 hours
English 110, 160, core elective	12 hours
Mathematics 111	4 hours
Philosophy 125, 150, 175	12 hours
Electives	8 hours
Sophomore year	
Biology 220 and elective	8 hours
Chemistry 111, 112, 113 (or 114, 115, 116), and 219	16 hours
History 101, 102, 103	12 hours
Philosophy 225, 250	8 hours
Theology 120	4 hours
Junior year	
Biology 350 and BI electives	12 hours
Chemistry 235, 236	10 hours
Language 101, 102, 103	12 hours
Theology 220, 320, 420	12 hours
Elective	4 hours
Senior year	
Internship—in an approved hospital	34 hours
Total	180 hours

- BI 101 Life Science I** 4 credits
Structure and function of the cell and its components; genetic relationship to growth and development; ecologic principles of living systems. Prerequisite: Ch 100. *Does not satisfy core curriculum requirements for students who have had high school biology.*
- BI 102 Life Science II** 4 credits
A study of review articles, reprints, Scientific American articles and paperbacks, covering current major biological problems. Prerequisite: BI 101 or high school biology.
- BI 111 General Science (211)** 3 credits
An elementary approach to integrated principles of biology, chemistry and physics. *Satisfies core science requirements for education majors only.*
- BI 112 General Science Workshop (212)** 1 credit
Workshop to be taken in conjunction with BI 111. *Satisfies core science requirements for education majors only.*
- BI 113 Biological Principles** 4 credits
Interrelationship of genetics, growth and development, physiology and ecology in simple and complex cellular systems. Prerequisite: BI 111, 112. *Satisfies core science requirements for education majors only.*
- BI 150 Introduction to Biology (205)** 4 credits
Introduction to the biological principles of the cell, growth and development, heredity and ecology.
- BI 200 Anatomy (132)** 4 credits
Structure of the human organism. Prerequisite: BI 150.
- BI 210 Physiology (133)** 4 credits
Functions of the human organism. Prerequisite: BI 200.
- BI 220 Microbiology** 4 credits
The study of yeasts, molds, bacteria and viruses. Prerequisite: BI 150 or 210.
- BI 230 Vertebrate Zoology (207)** 4 credits
Structure, physiology, ecology and behavior of Hemichordata, Cephalochordata, Urochordata and Chordata. Prerequisite: BI 150.
- BI 240 Invertebrate Zoology (206)** 4 credits
Structure, physiology, ecology and behavior of animals from Protozoa through Echinodermata. Prerequisite: BI 150.
- BI 250 Botany (101)** 4 credits
Structure, function and ecology of plants. Prerequisite: BI 150.
- BI 310 Comparative Vertebrate Embryology (302)** 4 credits
Early development of animals, stressing typical vertebrates. Prerequisite: BI 240.
- BI 320 Comparative Vertebrate Anatomy (307)** 4 credits
A study of selected vertebrate types. Prerequisite: BI 240.
- BI 330 Comparative Vertebrate Histology (355)** 4 credits
A study of fundamental body tissues. Prerequisite: BI 150.
- BI 340 Microtechnique (375)** 2 credits
Preparation of slides of animal tissue by the paraffin method; techniques of staining procedures. Prerequisite: BI 330 (or concurrently).
- BI 350 Genetics (450)** 3 credits
Classical and molecular principles of inheritance. Prerequisite: BI 150.
- BI 351 Genetics Laboratory (450)** 1 credit
Experiments with inheritance in plants and animals. Prerequisite: BI 350 (or taken concurrently) and permission of instructor.
- BI 360 Parasitology (304)** 4 credits
A study of parasitic protozoa, helminths and arthropods. Prerequisite: BI 230.
- BI 370 Population Biology** 4 credits
A study of ecology, population biology, evolution and speciation. Prerequisite: BI 350.
- BI 380 Laboratory Procedures (300)** 2 credits
Preparation and organization of materials and equipment for laboratory sessions. For education majors in biology. Prerequisites: Permission of the instructor and BI 150.
- BI 420 Cellular Physiology (451)** 4 credits
Nature and function of ultrastructural components and possible relationships to cell processes. Prerequisite: BI 410.
- BI 430 Endocrinology** 4 credits
The glands of internal secretion with emphasis on current research in endocrinology. Prerequisites: Advanced standing in biology and permission of instructor.
- BI 440 Neurobiology** 4 credits
The vertebrate nervous system and function of the neuron. Prerequisites: Permission of the instructor and BI 200 and 210 or 310 or 320.
- BI 450 Marine Invertebrate Zoology** 4 credits
The invertebrate animals of salt water, with emphasis on those inhabiting the intertidal zone. Prerequisite: BI 230.
- BI 455 Biochemistry (Ch 450)** 4 credits
Introduction to the composition and metabolism of carbohydrates, lipids, proteins, enzymes and body fluids. Prerequisite: Ch 236.
- BI 460 Limnology** 4 credits
The study of freshwater systems and the plants and animals inhabiting them, with emphasis on the invertebrate animals. Prerequisite: BI 230.
- BI 470 Entomology (405)** 4 credits
The structure, function, classification and behavior of insects. Prerequisite: BI 150.
- BI 491 Special Topics in Biology** 1-4 credits
BI 492 Special Topics in Biology 1-4 credits
BI 493 Special Topics in Biology 1-4 credits
Directed reading and/or lectures and/or laboratories on various topics at the advanced undergraduate level. Prerequisite: Permission of instructor.

- Bl 494 Seminar** 1 credit
Bl 495 Seminar 1 credit
Bl 496 Seminar 1 credit
 Problems in modern biology. Prerequisite: Permission of the instructor.
- Bl 497 Research** 1-6 credits
Bl 498 Research 1-6 credits
Bl 499 Research 1-6 credits
 Literature and laboratory investigation of a basic research problem. Preparation of a written report. Prerequisite: Permission of instructor.

Graduate Courses

- Bl 500 Cellular Physiology** 4 credits
 Advanced study in the nature and function of ultrastructural components and possible relationships to cell processes.
- Bl 510 Endocrinology** 4 credits
 Advanced study of the glands of internal secretion with emphasis on current research in endocrinology.
- Bl 520 Neurobiology** 4 credits
 Advanced study of the vertebrate nervous system and the function of the neuron.

- Bl 530 Entomology** 4 credits
 Advanced study of the structure, function, classification and behavior of insects.
- Bl 540 Genetics** 4 credits
 Advanced study of the classical and molecular principles of inheritance.
- Bl 550 Parasitology** 4 credits
 Advanced study of parasitic protozoa, helminths and arthropods.
- Bl 560 Histology** 4 credits
 Advanced study of fundamental body tissues.
- Bl 570 Invertebrate Zoology** 4 credits
 Advanced study of the structure, physiology, ecology and behavior of animals from Protozoa through Echinodermata.
- Bl 580 Research** 1-6 credits
 Literature and laboratory investigation of a basic research problem; preparation of a written report.
- Bl 590 Seminar** 1 credit
 Problems in advanced biology.

Chemistry

Ernest P. Bertin, S.J., Ph.D., *Head*

Objectives

Programs offered by the Chemistry department are designed to prepare the student for professional work in the various fields of basic and applied chemistry. The Bachelor of Science degree program, which is approved by the Committee on Professional Training of the American Chemical Society, is especially suited to those preparing for graduate studies in chemistry.

The Natural Science degree program is recommended for those desiring a solid foundation in chemistry but with greater freedom of choice of elective courses such as education, commerce and finance, pre-medical studies, or other fields within the College of Arts and Sciences.

Degrees Offered

Bachelor of Science
 Bachelor of Science in Natural Science
 Master of Science in Natural Science (summer)

General Program Requirements

Students in chemistry must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. The Bachelor of Science program

requires the mathematics and physics sequences and 12 hours of German. The Bachelor of Science in Natural Science program requires the mathematics sequence, 12 hours of social science and 12 hours of modern language.

Departmental Requirements

BACHELOR OF SCIENCE—71 hours of chemistry which must include Ch 111 or 114, 112 or 115, 113 or 116, 235, 236, 237, 238, 324, 325, 326, 355, 356, 357, 415, 436, 460, 461, 497, 498, 499.

BACHELOR OF SCIENCE IN NATURAL SCIENCE—40 hours of chemistry which must include Ch 111 or 114, 112 or 115, 113 or 116, 119 or 324, 219 or 325, 235, 236, 237, 351 or 355, plus electives from the following: 356, 357, 415, 436, 455, 460, 461, 495, 497, 498, 499. For those interested in biochemistry, the following courses are recommended: Bl 150, 230, 240 and Ch 455.

MASTER OF SCIENCE IN NATURAL SCIENCE—45 hours of courses numbered 400 or higher which may include the following Ch 411, 412, 419, 435, 495, 511, 535, 555, 556, 560, 590, or selections from the corresponding programs in physics or mathematics.

Bachelor of Science**Freshman year**

Chemistry 111 or 114, 112 or 115, 113 or 116	12 hours
English 110, 160	8 hours
Mathematics 111, 131, 132	14 hours
Philosophy 125, 150, 175	12 hours
Physics 109	3 hours

Sophomore year

Chemistry 235, 236, 237, 238	15 hours
Mathematics 231	4 hours
Philosophy 225, 250	8 hours
Physics 200, 201, 202	15 hours
Theology 120	4 hours

Junior year

Chemistry 324, 325, 326, 355, 356, 357	26 hours
German 101, 102, 103	12 hours
Theology 220, 320, 420	12 hours

Senior year

Chemistry 415, 436, 460, 461, 497, 498, 499	18 hours
English core elective	4 hours
History 101, 102, 103	12 hours
Elective	1 hour

Total.....180 hours

Bachelor of Science in Natural Science**Freshman year**

Chemistry 114, 115, 116, 119	15 hours
English 110, 160 and core elective	12 hours
Mathematics 111, 131	9 hours
Philosophy 125, 150, 175	12 hours

Sophomore year

Chemistry 235, 236, 237, 219	17 hours
History 101, 102, 103	12 hours
Philosophy 225, 250	8 hours
Theology 120	4 hours
Electives	8 hours

Junior year

Chemistry 351 and elective	8 hours
Language 101, 102, 103	12 hours
Physics 105, 106, 107	12 hours
Theology 220, 320, 420	12 hours
Elective	4 hours

Senior year

Social Science	12 hours
Electives	23 hours

Total.....180 hours

Chemistry Courses

Ch 100 Principles of Physical Sciences 4 credits
Principles of chemistry and physics as a foundation for the life sciences; matter and energy, molecular and atomic structure, chemical bonding, equilibrium, reaction rates, covalent carbon compounds. Four lecture hours per week.

Ch 101 Introductory General Chemistry 4 credits
Survey of inorganic chemistry treating the basic principles and descriptive material requisite for nursing. Three lecture and three laboratory hours per week. *Satisfies core science requirements for home economics and nursing students only.*

Ch 102 Introductory Organic Chemistry 4 credits
Survey of organic and biological chemistry treating the basic principles and descriptive material requisite for nursing. Three lecture and three laboratory hours per week. Prerequisite: Ch 101. *Satisfies core science requirements for home economics and nursing students only.*

Ch 103 Topics in Chemistry 4 credits
A lecture and seminar treatment in depth of selected topics in chemistry, historically oriented; investigation of some philosophical and sociological implications of science. Prerequisite: Bl 101.

Ch 111 General Inorganic Chemistry I 4 credits
For students with no high school chemistry. Atomic structure, weight relations, states of matter, solutions, kinetics, equilibrium. Three lecture, one quiz and three laboratory hours per week.

Ch 112 General Inorganic Chemistry II 4 credits
Electrical energy, aqueous solutions, alkali metals, alkaline earths, hydrogen, oxygen, the halogens, groups IV, V and VI. Three lecture, one quiz and three laboratory hours per week. Prerequisite: Ch 111 or 114.

Ch 113 General Inorganic Chemistry III 4 credits
Atomic structure, group III elements, transition metals, covalent carbon compounds, nuclear structure and radioactivity. Three lecture, one quiz and three laboratory hours per week. Prerequisite: Ch 112 or 115.

Ch 114 General Inorganic Chemistry I 4 credits
For students with high school chemistry. Treats same topics as Ch 111, but with deeper penetration. Three lecture, one quiz and three laboratory hours per week. Prerequisite: High school chemistry.

Ch 115 General Inorganic Chemistry II 4 credits
Treats same topics as Ch 112, but with deeper penetration. Three lecture, one quiz and three laboratory hours per week. Prerequisite: Ch 111 or 114.

Ch 116 General Inorganic Chemistry III 4 credits
Treats same topics as Ch 113, but with deeper penetration. Three lecture, one quiz and three laboratory hours per week. Prerequisite: Ch 112 or 115.

Ch 119 Elementary Qualitative Analysis 3 credits
An introductory analysis course treating the theory of precipitation, the laws of chemical equilibrium, and the methods and general principles of semi-micro separation and identification of the common cations. Two lecture and four laboratory hours per week. Prerequisite: Ch 112 or 115.

Ch 219 Quantitative Analysis 4 credits
Theory, methods and techniques of gravimetric and volumetric procedures in quantitative analysis. Two lecture and six laboratory hours per week. Prerequisite: Ch 116, 119.

- Ch 235 Organic Chemistry I** **5 credits**
Structure, functional groups, properties, synthesis and uses of organic compounds; emphasis on structural theory and reaction mechanisms; theory of laboratory operations. Three lecture and six laboratory hours per week. Prerequisite: Ch 112 or 115.
- Ch 236 Organic Chemistry II** **5 credits**
Stereo-chemistry, reactions of carbonyl derivatives, carbonyl compounds and organic acids and bases. Three lecture and six laboratory hours per week. Prerequisite: Ch 235.
- Ch 237 Organic Chemistry III** **3 credits**
Carbohydrates, amino acids and proteins. Three lecture hours per week. Prerequisite: Ch 236.
- Ch 238 Qualitative Organic Analysis** **2 credits**
Methods of identification of organic compounds as simple and mixed unknowns; preparation of derivatives; discussion and use of modern spectroscopic methods. Six laboratory hours per week, plus discussion of principles. Prerequisite: Ch 236.
- Ch 314 Inorganic Chemistry I** **4 credits**
Atomic structure, chemical bonding, stoichiometry, solutions, kinetics, equilibrium, electrochemistry. Three lecture and three laboratory hours per week. For engineering students only. Prerequisite: Ph 202.
- Ch 315 Inorganic Chemistry II** **4 credits**
Alkali metals, alkaline earths, transition metals, groups III, IV, V, VI, VII, organic chemistry. Three lecture and three laboratory hours per week. Prerequisite: Ch 314.
- Ch 324 Analytical Chemistry I** **5 credits**
Theory, prediction and control of reactions in ionized systems; mass action, dynamic equilibrium, oxidation potential, electronegativity. Application of principles to classical qualitative methods. Three lecture and six laboratory hours per week. Prerequisite: Ch 113 or 116.
- Ch 325 Analytical Chemistry II** **5 credits**
Principles and practices of modern methods of quantitative analysis including gravimetric and volumetric procedures. Three lecture and six laboratory hours per week. Prerequisite: Ch 324.
- Ch 326 Instrumental Analysis** **4 credits**
Theory and techniques of instrumental methods representative of spectrophotometric electroanalytical and chromatographic techniques. Two four-hour laboratory periods including discussion of principles. Prerequisite: Ch 356.
- Ch 351 Survey of Physical Chemistry** **4 credits**
A survey course treating the derivation, interpretation and application of the fundamental laws and theories of chemistry. Three lecture and three laboratory hours per week. Prerequisite: Ch 219 or 325.
- Ch 355 Physical Chemistry I** **4 credits**
Application of physical principles to chemistry with theoretical, mathematical treatment; gases, laws of thermodynamics, thermochemistry, one-component systems, solutions. Three lecture and three laboratory hours per week. Prerequisites: Mt 231 and one year of college physics.
- Ch 356 Physical Chemistry II** **4 credits**
Chemical equilibria, phase equilibria, kinetic theory, chemical kinetics, electrochemistry, ionic equilibria. Three lecture and three laboratory hours per week. Prerequisite: Ch 355.
- Ch 357 Physical Chemistry III** **4 credits**
Quantum theory, molecular structure, spectroscopy, statistical mechanics, surface chemistry, crystals, photochemistry, nuclear chemistry. Three lecture and three laboratory hours per week. Prerequisite: Ch 356.
- *Ch 411 Basic Principles of Inorganic Chemistry** **6 credits**
Structure of matter, energy levels, bonding, oxidation-reduction, acid-base, complex ions, equilibrium, electrochemistry, kinetics, nuclear chemistry. Five lecture and three laboratory hours per week. Prerequisite: Ch 116.
- *Ch 412 Chemistry of the Elements and Their Compounds** **6 credits**
Treatment of periodic table in terms of electronic configuration, bonding orbitals, ionization potentials, kinetics, equilibrium, complex ions, thermodynamics. Five lecture and three laboratory hours per week. Prerequisite: Ch 116.
- Ch 415 Advanced Inorganic Chemistry** **3 credits**
A survey of advanced topics in inorganic chemistry, with particular reference to contributions of atomic and molecular structural studies, thermodynamics and kinetics. Three lecture hours per week. Prerequisite: Ch 351 or 357.
- *Ch 419 Advanced Analytical Chemistry** **6 credits**
Principles of reaction in ionized systems applied to analysis; advanced cation and anion analysis; volumetric and gravimetric methods; colorimetry, chromatography, ion exchange. Four lecture and six laboratory hours per week. Prerequisite: Ch 411.
- *Ch 435 Organic Chemistry** **6 credits**
Study of functional groups in terms of electronic theory of valence, molecular orbital theory, free radical reactions, energetics, kinetics, ionization, mechanisms of displacement, steric effects. Five lecture and three laboratory hours per week. Prerequisite: Ch 237.
- Ch 436 Advanced Organic Chemistry** **4 credits**
Physical organic treatment of factors influencing reactivity, mechanistic principles of reaction, evaluation and significance of thermodynamic variables; advanced laboratory techniques and their principles. Three lecture and three laboratory hours per week. Prerequisite: Ch 237 and 357.
- Ch 455 Biochemistry (450)** **4 credits**
Introduction to the composition and metabolism of carbohydrates, lipids, proteins, enzymes, and body fluids. Two lecture and six laboratory hours per week. Prerequisite: Ch 236.
- Ch 460 Advanced Physical Chemistry** **3 credits**
Quantum chemistry, vibrational and rotational energies, absorption and emission of radiation, molecular symmetry, group theory, electronic spectra. Three lectures per week. Prerequisite: Ch 357.
- Ch 461 Nuclear Chemistry** **2 credits**
Theory of radioactivity, use of radiosopes in studying chemical reactions and structure. Six laboratory hours per week including discussion of principles. Prerequisite: Ch 351 or 357.

- Ch 495 Special Topics in Chemistry** 2-4 credits
Directed reading and/or lectures on various topics at the advanced level. Prerequisite—Permission of the instructor.
- Ch 497 Undergraduate Research I** 2 credits
- Ch 498 Undergraduate Research II** 2 credits
- Ch 499 Undergraduate Research III** 2 credits
Literature and laboratory investigation of a basic research problem. Six laboratory hours per week. Prerequisite: Permission of department head.

Graduate Courses

- *Ch 511 The Chemical Bond** 6 credits
Theory of resonance, electronic structure, polar bonds, directed covalent bond, complex bond orbitals, structure of molecules and crystals, metallic bond, one-electron and three-electron bonds, hydrogen bond. Five lecture hours and one seminar period per week. Prerequisite: Ch 411.
- *Ch 535 Modern Organic Chemistry** 6 credits
Theoretical treatment of mechanism and structure, stereochemistry, thermodynamic properties, steric effects, resonance, sigma constants, aromatic substitution, conformation and large-ring structure, organometallics. Five lecture and three laboratory hours per week. Prerequisite: Ch 435.

Objectives

The courses in economics are designed to acquaint the student with the economy in which he lives and to provide for the application of these courses to all other social sciences. The tools of analysis necessary to solve problems in such areas as business management, income distribution and international finance are acquired and opportunity is given to apply the various methods of solution. Students who prove especially able in economics courses are encouraged to pursue graduate work in preparation for professional status as an economist in government, industry or the academic world.

Degree Offered

Bachelor of Arts

General Program Requirements

Students in economics must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of social science, 12 hours of science and 12 hours of modern language. Although the degree program in economics is offered by the College of Arts and Sciences, the economics adviser is a member of the faculty of the School of Commerce and Finance. Students following the economics curriculum outlined below will find course descriptions for economics in the Commerce and Finance section.

Departmental Requirements

BACHELOR OF ARTS—56 hours of commerce and finance which must include CF 201, 202, 230, 231, 250,

- *Ch 555 Chemical Thermodynamics** 6 credits
Foundations of theory of thermodynamics, enthalpy, internal energy, free energy, entropy, work function. Application to states of matter, equilibrium and electrochemistry. Five lecture hours and one seminar period per week. Prerequisites: Ch 351 and Mt 231.

- *Ch 556 Chemical Kinetics** 6 credits
Quantitative study of rates of reaction and factors affecting rates; mechanism of elementary processes, gas-phase reactions, solution reactions, complex reactions, catalysis, oxidation. Five lecture hours and one seminar period per week. Prerequisites: Ch 351 and Mt 231.

- *Ch 560 Nuclear Chemistry** 6 credits
Theory of radioactivity and radioisotope techniques; nuclear radiations, detection of radiation, radiological safety, calibration of detectors, rates of radioactive processes, radiochemical separations. Four lecture and six laboratory hours per week. Prerequisites: Ch 351 and Mt 231.

- *Ch 590 Research** 6-12 credits
Literature and laboratory investigation of a basic research problem. Preparation of a written report. Three hours per credit per week. Prerequisite: Permission of instructor.

*Offered summer only for high school teachers in the master's degree program in natural science.

Economics

Margaret Mary Davies, Ph.D., Adviser

260, 301, 302, 305, 325, 335, 450, 455 and 460 or 470.

UNDERGRADUATE MINOR—24 hours of commerce and finance which must include CF 201, 202, 260 and 12 hours of courses numbered 300 to 499 selected at the direction of an adviser.

Bachelor of Arts

Freshman year

Commerce and Finance 230, 231, 250 12 hours
English 110, 160 and core elective 12 hours
History 101, 102, 103 12 hours
Philosophy 125, 150, 175 12 hours

Sophomore year

Commerce and Finance 201, 202, 260 12 hours
Mathematics 4 hours
Philosophy 225, 250 8 hours
Political Science 160 4 hours
Science or mathematics and elective 12 hours
Psychology 101 4 hours
Theology 120 4 hours

Junior year

Commerce and Finance 301, 302, 305, 325 16 hours
English core elective 4 hours
Language 101, 102, 103 12 hours
Psychology 100 4 hours
Theology 220, 320, 420 12 hours

Senior year

Commerce and Finance 335, 450, 455,
460 or 470 16 hours
Electives 20 hours

Total 180 hours

English

David A. Downes, Ph.D., *Head*

Objectives

The specific objectives of the English department are to train the student in the practice and interpretation of his native language, to guide him in a detailed knowledge of the periods of English literature and to integrate both purposes with a genuine awareness of the broader areas of human culture. Hence, the curriculum is designed to enable graduates to excel in those professions in which an accurate knowledge of English is essential. The requirements are further planned to provide period courses in the areas recommended by most American universities to applicants for graduate standing.

Degrees Offered

Bachelor of Arts
Master of Arts

General Program Requirements

Students in English must satisfy the core curriculum requirements of the University as specified on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of social science, either 12 hours of science or 8 hours of mathematics, 12 hours of French or German and 12 hours of fine arts.

Departmental Requirements

UNDERGRADUATE MAJOR—48 hours of English which must include the following basic courses: En 110, 160, 170, and 180 or 190. The student must also elect one of the following concentrations: British or American Literature or English Teaching. Course requirements for each are as follows:

BRITISH OR AMERICAN LITERATURE—En 335, or 336; three courses in the 300 series representing three different literary periods (American must include En 380 or 382); three courses in the 400 series representing figures of different literary forms and periods; and En 490 or 492.

ENGLISH TEACHING—En 220 or 230, 301, 307, 330, 380 or 382; in addition students preparing for

secondary education will take En 350 or 360 or 370, one course in the 400 series, and En 490 or 492.

UNDERGRADUATE MINOR—16 hours of English beyond En 160, 170, 180 or 190 which must include three courses in the 300 series and one course in the 400 series as specified by the department.

MASTER OF ARTS—35 hours of English of which 25 hours must be in courses numbered 500 or above. A maximum of 5 quarter credits may be transferred from an accredited institution. Consult the Graduate School section for additional requirements. Details of the master's program may be obtained from the English department.

Bachelor of Arts

Freshman year

Art 100	4 hours
English 110, 160, 170	12 hours
History 101, 102, 103	12 hours
Music 100	4 hours
Philosophy 125, 150, 175	12 hours
Speech 150	4 hours

Sophomore year

English 180 or 190, 335 or 336, 300 series	12 hours
Science or mathematics	8 hours
Science or Elective	4 hours
Social Science	12 hours
Philosophy 225, 250	8 hours
Theology 120	4 hours

Junior year

English 300 series	8 hours
English 400 series	4 hours
French or German 101, 102, 103	12 hours
Minor	12 hours
Theology 220, 320, 420	12 hours

Senior year

English 400 series	8 hours
English 490 or 492	4 hours
Minor	8 hours
Electives	16 hours

Total.....180 hours

English Courses

En 110 English Literary Forms 4 credits
(101) A study of the English language in its rhetorical and literary traditions.
(102)

En 140 The World's Great Masters I 4 credits
En 150 The World's Great Masters II 4 credits
(201) (I) A study of the masterpieces in Western culture with emphasis on Greek, Roman and Italian classics; (II) French, German, and Spanish classics. Prerequisite: En 110.
(202)

En 160 Great English Authors I 4 credits
En 170 Great English Authors II 4 credits
(164) (I) A study of major British writers from Chaucer to Swift. (II) Wordsworth to Keats. Prerequisite: En 110.
(165)

En 180 Great American Authors I 4 credits
En 190 Great American Authors II 4 credits
(375) (I) A study of the major American writers to Melville. (II) Melville to Eliot. Prerequisite: En 110.

En 203 Vocabulary Building 4 credits
(180, 181) A practical course in vocabulary building. Emphasis on etymology, Latin and Greek roots, prefixes and suffixes. Prerequisites: En 160, 170, 180 or 190.

En 205 Creative Writing 4 credits
(350) A study of and guided practice in forms of creative writing. Prerequisites: En 160, 170, 180 or 190.

- En 220 Introduction to Poetry** 4 credits
(105) A general introduction to the study of poetry with special emphasis on appreciation, form and technique. Prerequisites: En 160, 170, 180 or 190.
- En 230 Introduction to Fiction** 4 credits
(107) A general introduction to the study of fiction with special emphasis on appreciation, form and technique. Prerequisites: En 160, 170, 180 or 190.
- En 301 Advanced Rhetoric and the Teaching of English** 4 credits
A study of the development of English grammar and rhetoric and their application to writing with emphasis on methods of teaching. Prerequisites: En 160, 170, 180 or 190.
- En 305 Advanced Creative Writing** 4 credits
(350) Concentrated study and practice in one form of creative writing. Prerequisites: En 160, 170, 180 or 190.
- En 307 Foundations of American English** 4 credits
A study of the historical development of modern American English. Prerequisites: En 160, 170, 180 or 190.
- En 310 Middle English Literature** 4 credits
(312) A study of Chaucer's *Canterbury Tales*. Prerequisites: En 160, 170, 180 or 190.
- En 312 Medieval Literature** 4 credits
(313) Studies of the prose and poetry of the period other than Chaucer's *Canterbury Tales*. Prerequisites: En 160, 170, 180 or 190.
- En 320 Renaissance Literature I** 4 credits
En 322 Renaissance Literature II 4 credits
(323) (I) Studies in the prose and poetry of the period.
(327) (II) Non-Shakespearean dramas between 1550 and 1642. Prerequisites: En 160, 170, 180 or 190.
- En 330 Introductions to Shakespeare** 4 credits
(295) Readings in the Great Plays. Prerequisites: En 160, 170, 180 or 190.
- En 335 Shakespeare** 4 credits
Comedies and Histories. Prerequisites: En 160, 170, 180 or 190.
- En 336 Shakespeare** 4 credits
Tragedies. Prerequisites: En 160, 170, 180 or 190.
- En 340 Milton** 4 credits
A study of the prose and early poetry of Milton. Prerequisites: En 160, 170, 180 or 190.
- En 345 Seventeenth Century Literature** 4 credits
(343) Studies of the prose and poetry of the period. Prerequisites: En 160, 170, 180 or 190.
- En 350 Eighteenth Century Literature** 4 credits
(410) Studies of the prose and poetry of the period. Prerequisites: En 160, 170, 180 or 190.
- En 360 Early Nineteenth Century** 4 credits
(420) Studies of the prose and poetry of the English Romantic Period. Prerequisites: En 160, 170, 180 or 190.
- En 370 Late Nineteenth Century** 4 credits
(430) Studies of the prose and poetry of the Victorian Period. Prerequisites: En 160, 170, 180 or 190.
- En 380 Major American Poets** 4 credits
A study of American poetry from its beginning to modern times. Prerequisites: En 160, 170, 180 or 190.
- En 382 Major American Novelists** 4 credits
A study of American fiction from its beginning to modern times. Prerequisites: En 160, 170, 180 or 190.
- En 390 Eighteenth Century Novel** 4 credits
(455) A study of the major novelists of the period. Prerequisites: En 160, 170, 180 or 190.
- En 392 Nineteenth Century Novel** 4 credits
(455) A study of the major novelists of the period. Prerequisites: En 160, 170, 180 or 190.
- En 394 Twentieth Century Novel** 4 credits
(455) A study of the major novelists of the period. Prerequisites: En 160, 170, 180 or 190.
- En 396 Contemporary Literature** 4 credits
(450) Studies in the prose and poetry of the period. Prerequisites: En 160, 170, 180 or 190.
- En 398 Modern Drama** 4 credits
(470) Studies in the major contemporary dramatists. Prerequisites: En 160, 170, 180 or 190.
- *En 400 Language—Special Studies 3 credits
*En 401 Composition—Special Studies 3 credits
*En 402 Literature—Special Studies 3 credits
*En 403 English Workshop 1 credit
- En 410 Medieval English Literature** 4 credits
(313) Advanced studies in Chaucer. Prerequisite: 12 hours in 300 series.
- En 420 Renaissance Literature** 4 credits
(323) Advanced studies in Sidney, Spenser and their contemporaries. Prerequisite: 12 hours in the 300 series.
- En 422 Shakespeare's Contemporaries** 4 credits
Advanced studies of Jonson, Marlowe and their contemporaries. Prerequisite: 12 hours in the 300 series.
- En 435 Shakespeare's Comedies and Histories** 4 credits
(335) Advanced studies. Prerequisite: 12 hours in the 300 series.
- En 436 Shakespeare's Tragedies** 4 credits
(336) Advanced studies. Prerequisite: 12 hours in the 300 series.
- EN 440 Milton** 4 credits
(340) Advanced studies in the major works. Prerequisite: 12 hours in the 300 series.
- En 445 Metaphysical Poetry** 4 credits
(344) Advanced studies in Donne and his contemporaries. Prerequisite: 12 hours in the 300 series.
- En 450 Eighteenth Century Literature** 4 credits
(410) Advanced studies in Dryden, Pope, Swift, Johnson and their contemporaries. Prerequisite: 12 hours in the 300 series.
- En 460 Early Nineteenth Century** 4 credits
(420) Advanced studies in Wordsworth, Coleridge, and their contemporaries. Prerequisite: 12 hours in the 300 series.

- En 462 Early Nineteenth Century** 4 credits
(420) Advanced studies in Byron, Shelley, Keats and their contemporaries. Prerequisite: 12 hours in the 300 series.
- En 470 Late Nineteenth Century** 4 credits
(430) Advanced studies in Tennyson, Browning, Arnold and their contemporaries. Prerequisite: 12 hours in the 300 series.
(435)
- En 480 Early American Literature** 4 credits
(380) Advanced studies in Taylor, Freneau, Franklin and their contemporaries. Prerequisite: 12 hours in the 300 series.
- En 482 Nineteenth Century**
(380) **American Literature** 4 credits
Advanced studies in Poe, Emerson, Thoreau and their contemporaries. Prerequisite: 12 hours in the 300 series.
- En 483 Nineteenth Century**
(382) **American Literature** 4 credits
Advanced studies in Melville, Hawthorne, Twain and their contemporaries. Prerequisite: 12 hours from the 300 series.
- En 484 Twentieth Century**
(382) **American Literature** 4 credits
Advanced studies in James, Faulkner, Hemingway and their contemporaries. Prerequisite: 12 hours in the 300 series.
- En 486 Modern Poetry** 4 credits
(451) Advanced studies in Yeats, Eliot, Auden and their contemporaries. Prerequisite: 12 hours of 300 series.
- En 490 Literary Criticism** 4 credits
(303) An historical study of the theories of the great critics. Prerequisite: 32 hours of major completed.
- En 492 Contemporary Criticism** 4 credits
(303) A study of modern critical theories since 1917. Prerequisite: 32 hours of major completed.
- EN 495 Seminar** 4 credits
En 496 Seminar 4 credits
En 497 Seminar 4 credits
Special topics in English. Prerequisite: upper division standing in English and permission of department head.
- En 498 Individual Research** 4-8 credits
En 499 Individual Research 4-8 credits
Prerequisite: Senior standing in English and permission of department head.

Graduate Courses

- En 500 Introduction to**
Graduate English Studies 5 credits
- En 505 Modern Philology** 5 credits
- En 507 History of the English Language** 5 credits
- En 508 Old English** 5 credits
- En 509 Old English Poetry** 5 credits
- En 510 Seminar in Chaucer** 5 credits
(512)
(513)
- En 512 Medieval Literature** 5 credits
- En 520 The English Renaissance** 5 credits
(523)



- En 522 Studies in Elizabethan Drama** 5 credits
(527) (non-Shakespearean)
- En 535 Seminar in Shakespeare** 5 credits
(Comedies & Histories)
- En 536 Seminar in Shakespeare** 5 credits
(Tragedies)
- En 540 Seminar in Milton** 5 credits
- En 545 Studies in Seventeenth** 5 credits
(543) **Century Literature**
- En 550 Studies in Eighteenth** 5 credits
Century Literature
- En 560 Studies in English Romanticism** 5 credits
- En 570 Studies in Victorian Literature** 5 credits
(570)
(575)
- En 580 Colonial American Literature** 5 credits
- En 581 Studies in the American** 5 credits
(580) **Transcendentalists**
(581)
(582)
- En 582 Contemporary American Literature** 5 credits
- En 584 Studies in the English Novel** 5 credits
(590)
- En 586 Modern Poets** 5 credits
(595)
- En 588 Contemporary Dramatists** 5 credits
- En 590 Theories of Criticism** 5 credits
(503)
- En 593 Special Topics** 5 credits
- En 594 Special Topics** 5 credits
- En 595 Special Topics** 5 credits
- En 596 Individual Research** 5-10 credits
- En 597 Individual Research** 5-10 credits
- En 598 Individual Research** 5-10 credits
- En 599 Thesis** 10 credits

Objectives

Freshmen and sophomore students who have not yet selected a major field may enroll in the two-year First Humanities program. The emphasis in this program is on core curriculum subjects which are required for all degrees. Students are encouraged to explore fields of study in which they have an interest, whether arts, science or professional, and at the same time to complete course requirements basic to every program. A major must be selected by the end of the sophomore year, although First Humanities status may be terminated at any time by declaring a major field, provided the student is academically in good standing. While in this program, the student is assigned an adviser through the First Humanities office with whom he must plan

Objective

The objective of the program in general science is to offer the student a liberal education with sufficient background in science to enable the graduate to work in easy liaison with scientists and engineers in industry or government. Judicious use of elective hours permits the student to specialize in other technical areas or in business. A concentration in engineering and one in chemistry or physics is shown below, but other choices are possible according to the need of the student.

Degree Offered

Bachelor of Science in General Science

General Program Requirements

Students in general science must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Science on page 32. Required are 80 hours of courses in no more than four fields chosen from biology, chemistry, mathematics, physics, psychology and engineering. Courses in engineering are considered as one field in this program. The student must earn at least 24 credits in each of two fields. See sample programs of study below for specific course requirements.

**Bachelor of Science in General Science
Chemistry or Physics Concentration****Freshman year**

Chemistry 114, 115, 116	12 hours
English 110, 160 and core elective	12 hours
History 101, 102, 103	12 hours
Mathematics 111, 131, 132	14 hours

Sophomore year

Biology 150, 230	8 hours
Mathematics 231, 232	8 hours
Philosophy 125, 150, 175	12 hours
Physics 109, 200	8 hours
Electives	12 hours

First Humanities

Ruth E. Watson, B.Ed., Director

his course of study and to whom he makes a progress report each quarter.

First Humanities Program**Freshman Year**

English 110, 160 and core elective	12 hours
History 101, 102, 103	12 hours
Philosophy 125, 150, 175	12 hours
Science or mathematics and elective, social science or fine arts	12 hours

Sophomore Year

English core elective	4 hours
Major or elective	8 hours
Philosophy 225, 250	8 hours
Science or mathematics and elective, social science or fine arts	24 hours
Theology 120	4 hours

General Science

James J. Cowgill, S.J., Ph.D., Science Coordinator
David W. Schroeder, Ph.D., Engineering Coordinator

Junior year

Chemistry 235, 236, 351	14 hours
Philosophy 225, 250	8 hours
Physics 201, 202	10 hours
Social Science	12 hours
Theology 120	4 hours
Electives	2 hours

Senior year

Physics 360, 375, 376	8 hours
Theology 220, 320, 420	12 hours
Electives	12 hours

Total.....180 hours

**Bachelor of Science in General Science
Engineering Concentration****Freshman year**

Civil Engineering 121, 122, 123	3 hours
English 110, 160	8 hours
Mathematics 111, 131, 132	14 hours
Mechanical Engineering 111	3 hours
Philosophy 125, 150, 175	12 hours
Physics 200	5 hours

Sophomore year

Electrical Engineering 251, 253	8 hours
English core option	4 hours
Mathematics 114, 231, 232	11 hours
Mechanical Engineering 271, 300	8 hours
Physics 201, 202	10 hours
Theology 120, 220	8 hours

Junior year

Chemistry 314, 315	8 hours
Electrical Engineering 254	2 hours
Philosophy 225, 250	8 hours
Social Science	12 hours
Theology 320, 420	8 hours
Engineering Electives	8 hours

Senior year

Engineering Electives	8 hours
History 101, 102, 103	12 hours
Electives	20 hours

Total.....180 hours

History

Gerard G. Steckler, S.J., Ph.D., *Head*

Objectives

The objectives of the History department are to provide an essential background to the study of Western Europe, the United States, Latin America and the Far East for all students in the University and to deepen and broaden these studies for those majoring in history or those intending further study at the graduate level.

Degrees Offered

Bachelor of Arts
Master of Arts (Summer)

General Program Requirements

Students in history must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of social science, 12 hours of science or 8 hours of mathematics and 12 hours of modern language.

Departmental Requirements

BACHELOR OF ARTS—52 hours of history, of which the following courses are required: Hs 101, 102, 103, 200, 400, and 499. Of the remaining 28 hours, 16 are to be taken from courses numbered 305-398 and 12 from courses numbered 405-498. A minimum of 20 hours, selected by direction from both the 300- and 400- series, is to be taken in an area concentration (Western Europe, United States, Latin American or Far East). An oral comprehensive examination covering all courses taken, but with emphasis on the area concentration, will be required for graduation.

UNDERGRADUATE MINOR—32 hours of history, of which the following courses are required: Hs 101, 102 and 103. Of the remaining 20 hours, 16 are to be taken from courses numbered 305-398, and 4 from courses numbered 405-498. No area concentration is required, nor is there a final comprehensive examination.

TEACHING MAJOR (School of Education)—48 hours of history, of which the following courses are required: Hs 101, 102, 103, 231, 300, 339, and 341. Of the remaining 20 hours, 4 are to be taken from either Hs 211, 251, or 281; 8 from courses numbered 305-398; and 8 from courses numbered 405-498. No area concentration nor comprehensive examination is required.

Hs 101 World Civilizations I 4 credits
The cultures of Europe, the Middle East, India and the Far East from the earliest times to the end of the 10th century, A.D.

Hs 102 World Civilizations II 4 credits
To the beginnings of the French Revolution, the American republics and the major European impact on Indian and Far Eastern Asia. Prerequisite: Hs 101.

TEACHING MINOR (School of Education)—32 hours of history, of which the following courses are required: Hs 101, 102, 103, 231, 300, 339, and 341. The remaining 4 hours are to be taken from courses numbered 305-398. No area concentration nor comprehensive examination is required.

MASTER OF ARTS—36 hours of graduate work in history composed as follows: Hs 501 and 502; 20 hours in a specific field, of which 8 hours may be in courses numbered 405-498; one seminar (4 hours); and thesis (4 hours). The seminar must cover the special field chosen and the thesis will develop from the seminar. A reading knowledge of one language other than English appropriate to the special area is required on which an examination will be conducted by the department before the completion of one-half of the graduate program. A final comprehensive examination, written and oral, covering all courses taken, with emphasis on the special area, will be required.

Bachelor of Arts

Freshman year

English 110, 160 and 140 or 150 12 hours
History 101, 102, 103 12 hours
Science or mathematics and elective 12 hours
Philosophy 125, 150, 175 12 hours

Sophomore year

Commerce and Finance 201, 202 8 hours
English 170 or 180 or 190 4 hours
History 200 4 hours
History 300 series 8 hours
Philosophy 225, 250 8 hours
Political Science 353 4 hours
Psychology 100 4 hours
Sociology 101 4 hours
Theology 120 4 hours

Junior year

History 300 series 8 hours
History 400 or 400 series 4 hours
Language 101, 102, 103 12 hours
Minor 12 hours
Theology 220, 320, 420 12 hours

Senior year

History 400 or 400 series 12 hours
History 499 4 hours
Elective or fine arts sequence 12 hours
Minor 8 hours

Total 180 hours

History Courses

Hs 103 World Civilizations III 4 credits
Europe, the Americas, Asia, the Middle East and Africa, to the present: revolutions in ideas and societies; contemporary problems. Prerequisite: Hs 102.

Hs 200 Methodology 4 credits
Techniques of research, criticism, and writing, centering on the preparation of an extensive research paper. Limited to history majors in the College of Arts & Sciences. Prerequisite: Hs 103.

- Hs 211 Survey of Modern Europe 4 credits**
The events, movements and institutions of European history from the Renaissance to the present. Prerequisite: Hs 103.
- Hs 231 Survey of the United States 4 credits**
(131) The events, movements and institutions of American history from the era of discovery and colonization to the present. Prerequisite: Hs 103.
(133)
- Hs 251 Survey of Latin America 4 credits**
(151) The events, movements and institutions of Latin American history from the era of discovery and colonization to the present. Prerequisite: Hs 103.
(153)
- Hs 281 Survey of the Far East in 4 credits**
(191) **Modern Times**
(193) The events, movements and institutions of Far Eastern history from the time of the first major European impact to the present. Prerequisite: Hs 103.
- Hs 300 Teaching of History 4 credits**
Techniques of instruction in historical awareness and in basic historical content for the elementary and secondary levels of education. Limited to history majors and minors in the School of Education. Prerequisite: Hs 103.
- Hs 305 The Middle Ages 4 credits**
(303) The formation and development of Western Christendom from the dissolution of classical antiquity to the Renaissance. Prerequisite: Hs 103.
- Hs 307 Europe of the Renaissance 4 credits**
Movements and institutions from Italy to the rest of Europe; from the 14th through the early 16th centuries. Prerequisite: Hs 103.
- Hs 309 Europe of the 16th and 17th Centuries 4 credits**
The Reformation and Counter-Reformation, the Scientific Revolution and the development of the European state system to 1715. Prerequisite: Hs 103.
- Hs 311 Europe of the Old Regime and the Revolution 4 credits**
The cultural and political ferment of Western civilization in the century from Utrecht to Waterloo. Prerequisite: Hs 103.
- Hs 313 Europe of the 19th Century 4 credits**
The era of revolutions, in ideas and society, from the Napoleonic wars to the beginning of World War I. Prerequisite: Hs 103.
- Hs 315 Europe of the 20th Century 4 credits**
The contemporary movements and institutions in the home base of Western civilization, through war and peace. Prerequisite: Hs 103.
- Hs 331 Colonial North America 4 credits**
The European discoveries, explorations and settlements from the 16th through the late 18th centuries. Prerequisite: Hs 103.
- Hs 333 The Beginnings of the United States 4 credits**
The Revolution and the Constitution, the first continental expansion and the first world contacts to the era of Monroe. Prerequisite: Hs 103.
- Hs 335 The Expansion and Crisis of the Union 4 credits**
The United States from the era of Jackson through the Civil War to the era of Reconstruction. Prerequisite: Hs 103.
- Hs 337 The United States: Expansion and World Power 4 credits**
The domestic and foreign development of American power from the end of Reconstruction to the Great Depression. Prerequisite: Hs 103.
- Hs 339 The Contemporary United States 4 credits**
(337) The repercussions of depression, world war and scientific revolution on the responsibilities and opportunities of the American people. Prerequisite: Hs 103.
- Hs 341 The Pacific Northwest 4 credits**
(340) The past development and present problems of the states comprising the old Oregon Country, with emphasis on Washington State. Prerequisite: Hs 103.
- Hs 351 Mexico 4 credits**
The formation and development of the Mexican nation from pre-Columbian and Spanish origins to the present. Prerequisite: Hs 103.
- Hs 353 Brazil 4 credits**
The development, under Portuguese and other influences, of the Brazilian nationality and culture to the present. Prerequisite: Hs 103.
- Hs 355 Argentina and Chile 4 credits**
The history and culture of the southern South American republics from the first European settlements to the present. Prerequisite: Hs 103.
- Hs 357 Central America and the Caribbean 4 credits**
The strategic center of the Americas from the Columbian beginnings to the present cluster of colonies and republics. Prerequisite: Hs 103.
- Hs 359 The Andean Republics 4 credits**
The history and culture of Peru, Bolivia, Ecuador and Colombia from Spanish Conquest to the present. Prerequisite: Hs 103.
- Hs 363 England of the 16th and 17th centuries 4 credits**
The critical course of English destinies under the Tudors and the Stuarts and its effects in subsequent world history. Prerequisite: Hs 103.
- Hs 372 Medieval Russia 4 credits**
The Byzantine background, the Kievan origins and the Muscovite leadership of the Russian people. Prerequisite: Hs 103.
- Hs 373 Modern Russia 4 credits**
The history and culture of the Russian people under the Romanovs and the Revolution. Prerequisite: Hs 103.
- Hs 381 China, to the 10th Century 4 credits**
The foundations and fortunes of the Chinese nation and culture from the earliest times to the end of the T'ang Dynasty. Prerequisite: Hs 103.
- Hs 382 China, from the 10th through the 19th Centuries 4 credits**
The thousand years of Chinese empire and civilization from the end of the T'ang to the end of the Ch'ing dynasties. Prerequisite: Hs 103.
- Hs 383 China of the 20th Century 4 credits**
(395) The successive revolutions of the Chinese republics and the contemporary situation of the Chinese people and culture. Prerequisite: Hs 103.

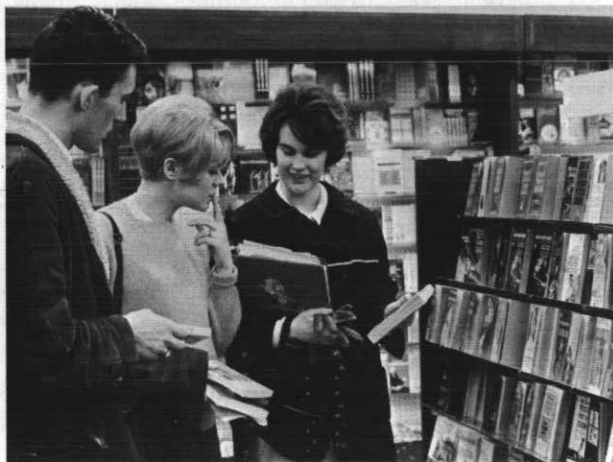
- Hs 387 Modern Japan** 4 credits
(397) Japanese history and culture, with emphasis on the last hundred years of western contact and world power. Prerequisite: Hs 103.
- Hs 396 Special Topics** 4 credits
Hs 397 Special Topics 4 credits
Hs 398 Special Topics 4 credits
Private work by arrangement with approval of department head. Prerequisite: Hs 103.
- Hs 400 Historiography** 4 credits
(401) The history of historical study and writing, and the philosophy of history from the earliest times to the present. Limited to history majors in the College of Arts and Sciences. With permission of instructor. Prerequisite: Hs 200.
- Hs 405 Some Aspects of Medievalia** 4 credits
Studies in medieval history and culture. Prerequisite: Hs 305.
- Hs 412 The French Revolution and Napoleon** 4 credits
Studies in revolutionary thought and action. Prerequisite: Hs 311.
- Hs 414 Modern Germany** 4 credits
Studies in German history and culture from Stein to Adenauer. Prerequisite: Hs 313 or 315.
- Hs 431 The Westward Movement** 4 credits
Studies in American frontier history from colonial times to the end of the 19th century. Prerequisite: Hs 331, 333, 335 or 337.
- Hs 437 The Progressive Movement** 4 credits
Studies in an American political and social phenomenon. Prerequisite: Hs 337.
- Hs 451 Pre-Columbian America** 4 credits
Studies in the Mayan, Aztec, Incan, and other civilizations in subsequent Latin America. Prerequisite: Hs 351, 353, 355, 357 or 359.
- Hs 453 Colonial Institutions in Latin America** 4 credits
Studies in various aspects, political, social, economic and religious. Prerequisite: Hs 351, 353, 355, 357 or 359.
- Hs 464 Puritans and Parliament-Men** 4 credits
Studies in the crises of the 17th-century English Church and State. Prerequisite: Hs 363.
- Hs 480 Chinese Traditional Thought** 4 credits
Studies in Chinese philosophy, religious thought, political doctrine and historiography. Prerequisite: Hs 381 or 382.
- Hs 496 Special Topics** 4 credits
Hs 497 Special Topics 4 credits
Hs 498 Special Topics 4 credits
(499) Private studies by arrangement with approval of department head. Prerequisite: Completion of 300 series courses in related areas.
- Hs 499 Senior Seminar** 4 credits
Specially directed projects in research and composition. Limited to seniors in Arts and Science. Prerequisite: Hs 400 and at least two courses in the 400 series.

Graduate Courses

- Hs 501 Historiography I: from Antiquity to the Enlightenment** 4 credits
An analysis of the theses and techniques of the major historians from Herodotus to Gibbon.

- Hs 502 Historiography II: from the Enlightenment to the Present** 4 credits
From Gibbon to the present.
- Hs 511 Medieval History** 4 credits
- Hs 512 Early Modern Europe** 4 credits
From the Renaissance through the Enlightenment.
- Hs 513 The Era of Revolution** 4 credits
The late 18th and early 19th centuries.
- Hs 531 United States: Colonial** 4 credits
The British colonies in North America, to the Revolution.
- Hs 532 United States: National** 4 credits
The new nation to the end of the Civil War.
- Hs 533 United States: 20th Century** 4 credits
- *Hs 535 United States Domestic Developments** 2 credits
- *Hs 536 Growth of the United States as a World Power—Atlantic Area** 2 credits
- *Hs 537 Growth of the United States as a World Power—Pacific Area** 2 credits
- *Hs 539 Seminar in Modern United States History** 4 credits
- Hs 551 Latin America: Colonial** 4 credits
The Spanish and Portuguese colonies, to the Revolution.
- Hs 552 Latin America: National** 4 credits
The 19th and 20th centuries.
- Hs 591 Seminar: France** 4 credits
French Revolution and Napoleon
- Hs 592 Seminar: United States** 4 credits
Colonial Virginia
- Hs 593 Seminar: United States—Civil War** 4 credits
- Hs 594 Seminar: United States** 4 credits
Frontier America
- Hs 595 Seminar: Latin America—Mexico** 4 credits
- Hs 595 Seminar: Latin America** 4 credits
Aspects of Brazilian
- Hs 599 Thesis** 4 credits

*Offered summer only in the National Defense Education Act History Institute.



Home Economics

Eunice M. Martin, M.A., Head

Objectives

The Home Economics department provides studies in the arts and sciences with a concentration in home economics. The student wishing to enter the field may select from three curricula: teaching, professional or general. The purpose of each curriculum determines the degree of specialization and the supporting sciences and arts required. The student who plans to become active professionally after graduation should choose either the teaching or the professional program.

The teaching curriculum prepares the student to become a home economist in education and to teach at the junior and senior high school levels. The student must satisfy the requirements for a degree in home economics and for provisional certification by the State of Washington as outlined by this curriculum. Following the first year of teaching, continued academic studies are required to meet the standard state certification.

The professional curriculum gives basic education and specialization required of the professional home economist in areas of business, industry or communications. The option of minor concentration further directs the professional emphasis. Graduate study leading to advanced degrees is necessary for research, greater specialization in college level teaching and wider professional opportunities.

The general curriculum is designed to educate broadly within the arts and sciences, providing a general background in home economics. This course of study may be chosen by the student wishing a liberal education but not planning to enter professional life.

Degree Offered

Bachelor of Science in Home Economics

General Program Requirements

Students in home economics must satisfy the core curriculum requirements of the University as specified on page 24 of this bulletin. For core sequences required in each program, see curriculum outlines which follow.

Departmental Requirements

PROFESSIONAL CURRICULUM—56 hours in home economics which must include HE 110, 111, 160, 161, 220, 250, 260, 270, 280, 285, 310, 315, 360, and 497. The related minor of 24 hours may be selected from art, journalism or marketing as specified by the department. Modification of the major for special emphasis, proper chemistry sequences, additional science and mathematics requirements for research, and special graduate study must be approved by the department head.

TEACHING CURRICULUM—58 hours in home economics which must include HE 110, 111, 160, 161, 220, 250, 260, 270, 280, 285, 310, 315, 340, 360 and 490.

GENERAL CURRICULUM—40 hours in home economics which must include HE 110, 111, 160, 161, 220, 250, 260, 270, 280, 285 and one four hour elective.

UNDERGRADUATE MINOR—24 hours selected with the direction of an adviser.

Bachelor of Science in Home Economics Professional Curriculum

Freshman year

Art 121 and 131	4 hours
Chemistry 101, 102	8 hours
Commerce and Finance 201	4 hours
English 110, 160, 180 or 190	12 hours
Home Economics 110 or 160, 111 or 161, 260 or minor	12 hours
Psychology 100	4 hours
Sociology 101	4 hours

Sophomore year

Biology 200, 210	8 hours
Home Economics 110 or 160, 111 or 161, 220, 260 or minor, 270	20 hours
Minor or elective	4 hours
Philosophy 125, 150, 175	12 hours
Theology 120	4 hours

Junior year

Biology 220	4 hours
Home Economics 250, 280, 285, 310	16 hours
Minor or elective	8 hours
Philosophy 225, 250	8 hours
Theology 220, 320, 420	12 hours

Senior year

History 101, 102, 103	12 hours
Home Economics 315, 360, 497	12 hours
Minor or elective	8 hours
Sociology 260	4 hours

Total.....180 hours

Bachelor of Science in Home Economics Teaching Curriculum

Freshman year

Art 121, 131	4 hours
Chemistry 101, 102	8 hours
Commerce and Finance 201	4 hours
English 110, 160, 180 or 190	12 hours
Home Economics 110 or 160, 111 or 161, 260 or 285	12 hours
Psychology 100	4 hours
Sociology 101	4 hours

Sophomore year

Biology 200, 210	8 hours
Education 201, 322	6 hours
Home Economics 110 or 160, 111 or 161, 220, 270	16 hours
Philosophy 125, 150, 175	12 hours
Physical Education	2 hours
Theology 120	4 hours

Junior year	
Biology 220	4 hours
Education 325	3 hours
Home Economics 250, 280, 285 or 260, 310, 340	20 hours
Philosophy 225, 250	8 hours
Theology 220, 320, 420	12 hours
Summer	
History 101, 102	8 hours
Senior year	
Education 330, 331, 332, 432, 433	25 hours
Home Economics 315, 360, 430, 431, 490	14 hours
Sociology 260, 262	8 hours
Total	198 hours

Bachelor of Science in Home Economics General Curriculum

Freshman year	
Art 121, 131	4 hours
Chemistry 101, 102	8 hours
Commerce and Finance 201	4 hours
English 110, 160, 180 or 190	12 hours

HE 110 Principles of Food Preparation	4 credits
Basic theories of food selection, preparation and storage; equipment appraisal and use; time utilization. Three lab hours per week.	
HE 111 Meal Management	4 credits
Principles of management related to the planning, preparation and service of meals with emphasis on efficient utilization of time, money, food value and equipment. Three lab hours per week. Prerequisite: HE 110.	
HE 160 Clothing Selection and Construction	4 credits
Design essentials, socio-psychological aspects of clothing; principles of pattern alteration; fitting and construction; project in cotton or linen. Three lab hours per week.	
HE 161 Clothing Design by Flat Pattern	4 credits
Principles of flat pattern designing and construction in wool; economics and marketing concepts related to clothing. Three lab hours per week. Prerequisite: HE 160.	
HE 220 Nutrition	2 credits
HE 221 Nutrition	2 credits
Relation of nutrients to health; consideration of individual requirements and utilization of nutrients; composition of foods; dietary planning in normal nutrition. Prerequisites: Ch 102 and Bl 210. Students must register for 220 and 221 during the same quarter. Registration for 221 only requires permission of the department head.	
HE 250 Personal and Family Finance	4 credits
(150)	The use of resources to further individual and family objectives; current accounts; long term financial planning; consumer problems.
HE 260 Clothing Design by Draping	4 credits
Principles of designing by draping and construction in fabric of selected filament fibers. Three lab hours per week. Prerequisite: HE 161.	

Home Economics 110 or 160, 111 or 161, 260 or elective	12 hours
Psychology 100	4 hours
Sociology 101	4 hours
Sophomore year	
Biology 200, 210	8 hours
Home Economics 110 or 160, 111 or 161, 220, 260 or elective, 270	20 hours
Philosophy 125, 150, 175	12 hours
Speech 100	4 hours
Theology 120	4 hours
Junior year	
History 101, 102, 103	12 hours
Home Economics 250, 280, 285	12 hours
Philosophy 225, 250	8 hours
Theology 220, 320, 420	12 hours
Elective	4 hours
Senior year	
Language 101, 102, 103	12 hours
Political Science 160	4 hours
Sociology 260	4 hours
Social Science	8 hours
Elective	8 hours
Total	180 hours

Home Economics Courses

HE 270 Introductory Textiles	4 credits
Study of properties of selected fibers, yarns, fabrics and finishes; historical and marketing aspects; physical and chemical testing. Two lab hours per week.	
HE 280 Choosing the Home	4 credits
(190)	Analysis of design, materials, functions and cost of the home based on personal and family values and requirements.
HE 285 Furnishing the Home	4 credits
(195)	The relation of interior design and furnishings to the values, resources, and requirements of the family and the individual; fundamentals of selection, arrangement, management, lighting, color.
HE 310 Experimental Foods	4 credits
Chemical and physical concepts of food preparation through experimentation. Three lab hours per week. HE 111 and Ch 102.	
HE 315 Demonstration	4 credits
Student presentations of food and equipment using the lecture-demonstration method; analysis of specialized writing in home economics. Six lab hours per week. Prerequisite: HE 111.	
HE 320 Advanced Nutrition	4 credits
The chemistry of foods and nutrients with emphasis on the relation of nutrition to the functioning of the body systems. Prerequisite: HE 220.	
HE 340 Management and Family Living	4 credits
Principles of management related to human and material resources during the family life cycle. Special study problems. Prerequisite: HE 250 or approval of instructor.	
HE 360 Tailoring	4 credits
Fundamentals of custom tailoring for women; comparative tailoring and dressmaking; suit or coat construction. Three lab hours per week. Prerequisite: HE 260.	

- HE 370 Comparative Textiles** 4 credits
Selected cellulosic, protein, regenerated and synthetic fibers; qualitative and quantitative analyses of blended sources. Two laboratory hours per week. HE 270 and Ch 102.
- HE 376 Textile Analysis** 4 credits
Physical methods of investigating textiles. Micro-technique. Six lab hours per week. Prerequisite: HE 270 and Ch 102.
- HE 430 Home Economics Methods** 2 credits
- HE 431 Home Economics Methods** 2 credits
(330) Organization of subject matter and teaching materials. Methods of teaching specific home eco-

nomics areas. Majors in teaching curriculum must register for HE 430 and 431 concurrently. Prerequisite. Ed 330 and permission of Home Economics Department.

- HE 490 Special Study** 2 credits
Directed study or experience in specific areas of Home Economics. Prerequisite: Approval of department head.
- HE 497 Individual Research** 4 credits
Supervised research problems; laboratory investigation; study of literature; written thesis. Open to senior home economics majors with the approval of the department head.

Honors Program

Thomas L. O'Brien, S.J., M.A., *Director*

Objectives

The Honors Program is designed to produce the student who can think, read, write and speak integratively across many departmental lines presently dividing various university disciplines. For that reason, it is historically conceived, beginning with the Hindus, proceeding through the Hebrews, Greeks, Romans, Christian thought, up through the modern areas of concern. The various disciplines, i.e., thought, literature, science and history, are correlated so as to provide the student with the greatest possible depth in the period under examination. It is so worked out that it provides a more than adequate background for most majors available in the University.

Scholarships

Scholarships are granted on a one-year basis, renewable on proof of competence. They include full tuition. Applicants are chosen not only on previous record, but on evidence that they are willing to make the effort necessary to achieve genuine superiority in the intellectual pursuits. High among qualities sought is the ability to commit one's self to an idea and its challenge.

Procedures

The program is conducted almost totally in the "dialog" method. This means a minimum of lecturing, a maxi-

mum of problem-solving by the students. This is achieved by pre-assigning questions whose answers are sought for in the assigned readings and reported on in the two-hour sessions around the seminar table. Emphasis in these workshop sessions is on precision of thought, clarity of expression, willingness to listen to others. It is a continuing experience in corporate learning.

One essay a week is required in each of the four areas in turn. These essays are corrected in small tutorial groups which meet weekly. Language is taken care of in the third year in special language groups.

Honors students, on completion of their two-year program, transfer into one of the departments of the University for their major requirements. It is possible to fulfill these requirements in some departments, chiefly in the humanities, in one year, thus assuring a three-year graduation.

Completion of the Honors Program satisfies core requirements in philosophy, English, history, science and theology except Th 420. Additional credit is granted for Pl 400. Pl 440, Th 420 and En 220 may be completed in summer study or by special examination prior to entering the major field.

Honors Courses

- Hu 101 Humanities Seminar—Thought** 6 credits
Hu 102 Humanities Seminar—Thought 6 credits
Hu 103 Humanities Seminar—Thought 6 credits
Three quarters of critical reading and discussion of the works which have most deeply influenced the development of the Western world, including the Upanishads, Old Testament, Pre-Socratics, Plato, Aristotle, Seneca, Epictetus, New Testament, St. Augustine, Boethius, St. Thomas.
- Hu 111 Humanities Seminar—Literature** 4 credits
Hu 112 Humanities Seminar—Literature 4 credits
Hu 113 Humanities Seminar—Literature 4 credits
A critical examination of those literary works

which have most deeply influenced the development of the Western world, including the Bhagavad-Gita, dramatic books of the Old Testament, Homer and the Greek playwrights, Lucretius, Virgil, St. Paul, St. Augustine and Dante.

- Hu 121 Humanities Seminar—History** 4 credits
Hu 122 Humanities Seminar—History 4 credits
Hu 123 Humanities Seminar—History 4 credits
An historical survey designed to furnish background discipline for humanities—thought and humanities—literature. Hence this survey will accompany, step by step, the other disciplines.

- Hu 131 Humanities Seminar—Science 4 credits
 Hu 132 Humanities Seminar—Science 4 credits
 Hu 133 Humanities Seminar—Science 4 credits

An historical survey of the development of elementary mathematics from early number systems to basic concepts of calculus, together with a brief introduction to the trend and spirit of modern mathematics. Emphasis is placed on understanding the conceptual development, together with the historical evolution of fundamental ideas and theories in mathematics.

- Hu 201 Humanities Seminar—Thought 6 credits
 Hu 202 Humanities Seminar—Thought 6 credits
 Hu 203 Humanities Seminar—Thought 6 credits

Three quarters of critical reading and discussion, including Galileo, Descartes, Bacon, Hobbes, Luther, Calvin, the Council of Trent, Locke, Spinoza, Leibnitz, Rousseau, Hume, Kant, Hegel, J. S. Mill, Newman, Freud, Marx, Whitehead, Existentialists.

- Hu 211 Humanities Seminar—Literature 4 credits
 Hu 212 Humanities Seminar—Literature 4 credits
 Hu 213 Humanities Seminar—Literature 4 credits

The Cid, Song of Roland, Beowulf, Chaucer, Shakespeare, Donne, Racine, Moliere, Corneille, Milton, Dryden, Pope, Goethe, the Romantics, Victorians, Russian novelists and modern plays through the Existentialists.

Objectives

The aim of the program is to give students both the broad background of the liberal arts and the practical training in journalism which are needed for responsible work in today's complex field of communications. The journalism program is designed to prepare the graduate for editorial work and to provide him with an effective basis for other areas in which further technical training is needed.

Degree Offered

Bachelor of Arts

General Program Requirements

Students in journalism must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of social science, 12 hours of science or 8 hours of mathematics and 12 hours of either a modern language or fine arts. To enroll in any journalism course, a student must have sophomore standing.

Departmental Requirements

BACHELOR OF ARTS—40 hours of journalism which must include Jr 200, 210, 220, 250 and at least 20 hours numbered 300 or above, 8 hours of English numbered 300 or above and 12 hours of upper division American history courses. For those planning to work in foreign fields, a minor in languages will be required. For those going into radio or television work, 12 hours of fine arts will be required. For those planning a career in advertising, mar-

- Hu 221 Humanities Seminar—History 4 credits
 Hu 222 Humanities Seminar—History 4 credits
 Hu 223 Humanities Seminar—History 4 credits

The Renaissance to the present.

- Hu 231 Humanities Seminar—Science 4 credits
 Hu 232 Humanities Seminar—Science 4 credits
 Hu 233 Humanities Seminar—Science 4 credits

A presentation of the central ideas and theories of natural science, together with a broader understanding of the part science has played in the formation of the Western mind. This material will be coordinated with the contemporary philosophical and literary ideas as treated in Hu 201, 202, 203 and Hu 211, 212, 213.

Senior Honors Courses

- Hu 490 Senior Honors Seminar 8 credits
 Readings in Hindu, Hebrew, Greek and Roman thought and literature, with emphasis on problem-solving.

- Hu 491 Senior Honors Seminar 8 credits
 Readings in early Christian writers, Boethius, St. Augustine, early medieval and St. Thomas.

- Hu 492 Senior Honors Seminar 8 credits
 Readings in modern thought and literature, from Galileo through Whitehead and the leading Existentialists. Prerequisite: For 490, 491, 492, invitation of dean, or director of honors program.

Journalism

John R. Talevich, M.A., Acting Head

keting, design and advertising courses are required. An oral comprehensive examination covering journalism and the minor fields is also required.

UNDERGRADUATE MINOR—20 hours of journalism which must include Jr 200, 220 and 8 hours of courses numbered 300 or higher.

Bachelor of Arts

Freshman year

English 110, 160 and core elective 12 hours
 History 101, 102, 103 12 hours
 Philosophy 125, 150, 175 12 hours
 Social Science 12 hours

Sophomore year

English core elective 4 hours
 Journalism 200, 210, 220 12 hours
 Minor or electives 8 hours
 Philosophy 225, 250 8 hours
 Science or mathematics and elective 12 hours
 Theology 120 4 hours

Junior year

English (upper division) 4 hours
 History (American) 12 hours
 Journalism 250 and electives 12 hours
 Minor or electives 8 hours
 Theology 220, 320, 420 12 hours

Senior year

English (upper division) 4 hours
 Journalism electives 16 hours
 Language or Fine Arts 12 hours
 Minor or elective 4 hours

Total 180 hours

Journalism Courses

- Jr 200 Principles of Communication** 4 credits
A study of the nature of media of mass communication; interrelationship of the press and society; content analysis of news publications.
- Jr 210 Newswriting** 4 credits
(210) A study of the elements of the news story; practice in gathering data for and writing news for mass communications media.
(310)
- Jr 220 History of Journalism** 4 credits
A study of the origins and growth of the American press from colonial to modern times.
- Jr 250 Copyreading** 4 credits
(250) Principles and practice in copyediting, headlines and layout.
(251)
- Jr 345 Law of the Press** 4 credits
Constitutional guarantees and restrictions on freedom of information, with a study of significant cases; statutes governing libel, copyright, privacy and postal regulations.
- Jr 350 Feature Writing** 4 credits
Elements of non-fiction articles for newspaper and magazine publications; actual writing for sale.
- Jr 355 Communications Graphics** 4 credits
Study of basic printing procedures; writing and editing techniques for organization publications; planning and purchasing printing. Prerequisites: Jr 210, 250.
- Jr 370 Editorial Writing** 4 credits
Work and responsibility of editorial writers today with emphasis on editorial writing and thinking; analysis of published editorials.
- Jr 430 Critical Writing** 4 credits
A reading and discussion with practice writing of newspaper-style reviews of books, motion pictures, radio, television and theatrical entertainments.
- J 440 Literature of Journalism** 2 credits
Reading and reports on the outstanding books related to journalism.
- Jr 460 Public Relations** 4 credits
Public relations as a management function; problems, policies and procedures; program analysis and case study.
- Jr 465 School Publications** 4 credits
For teachers wishing preparation for advising school newspapers or annuals; theory and practical problems.
- Jr 470 Publications' Workshop I** 1 credit
Jr 471 Publications' Workshop II 1 credit
Jr 472 Publications' Workshop III 1 credit
(I) Analysis of individual student publications; practice in writing for and editing college publications. (II) Advanced work in college publications. (III) Actual work as a major department head of a college publication.
- Jr 491 Journalism Ethics** 4 credits
Seminar in solutions for practical ethical problems facing journalists today.
- Jr 495 Special Topics** 4 credits
Jr 496 Special Topics 4 credits
Jr 497 Special Topics 4 credits
Supervised research work. Open only to journalism majors. Prerequisites: Advanced standing in journalism. Permission of instructor.



Languages

Robert B. Saenz, S.J., Ph.L., S.T.L., Acting Head

Objectives

The specific purpose of the foreign language program in French, German, Spanish, Latin and Greek is both linguistic and cultural.

PROGRAM A—At the first level its purpose is to equip the student with an adequate reading, writing and (in the case of modern languages) speaking facility at the level of ordinary discourse so that he may use these skills for communication with native speakers, and at the same time as tools for academic research or instruction in his chosen field, as, for example, history, political science, foreign service, seminary studies, professional theology, elementary or secondary teaching, etc. Since it is a program of a certain depth, it may also serve as a minor in many fields.

At the second level its purpose is to unlock the culture of the linguistic community by means of the foreign language used as the key. Thus, it embraces not only the works and movements of each literary epoch but also their relationship to the other arts, to political and social history, and to physical, economic and human geography. This is the goal of the major.

PROGRAM B—For students whose program of studies demands the use of a foreign language only as a tool for reading, a sequence of three reading courses (101, 102, 103) is offered each year. Its primary purpose is to prepare the student to handle with understanding the written text of a foreign language, modern or classical, for scholarly purposes. It prescind completely from phonology to concentrate totally on the morphological and syntactical patterns of the language, together with its lexicon, to instill the reading skill. As a consequence, its secondary goal is to produce in the student the adequate facility necessary to pass the customary foreign language reading examinations usually required in graduate schools.

Degree Offered

Bachelor of Arts

General Program Requirements

Students in language must satisfy the core curriculum requirements of the University as specified on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of social science and 12 hours of science. Modern language majors are expected to complete a minor in a second modern language. Classical language majors must complete a minor in a second classical language.

Departmental Requirements

BACHELOR OF ARTS (modern language)—58 hours which must include 110, 210, 220, 306, 308, 310, 411, 412, 413, 414, and 415.

BACHELOR OF ARTS (classical language)—48 hours which must include 101, 102, 103, 204, 205, 206, 307, 308, 309, 413, 414, and 415.

UNDERGRADUATE MINOR (modern language)—24 hours which must include 110, 210, and 220.

UNDERGRADUATE MINOR (classical language)—36 hours which must include 101, 102, 103, 204, 205, 206, 307, 308, and 309.

The Language Department reserves the right to waive all or part of these requirements for students who have demonstrated equivalent achievement at the college level. Such achievement will be determined by a series of written and oral examinations. No credit is given for courses waived, but the student passing these examinations may substitute electives for the courses waived. Credit by examination in language courses may be provided if the student meets the University's requirements as specified on page 27 of this bulletin.

Through the cooperation of the School of Education a program has been arranged to equip the student for a career as a foreign language teacher. Furthermore, in collaboration with other departments that have bilingual instructors, courses in the related humanities are occasionally offered with a foreign language as the medium of instruction. It thus becomes possible for the student to complete a larger portion of his general course work in the language of his choice.

No student may satisfy language requirements by examinations in his native language, since the goal of this program is mastery of a language foreign to the student.

Bachelor of Arts Modern Languages

Freshman year

English 110, 160, 170..... 12 hours
Modern Language 110, 210, 220..... 24 hours
Philosophy 125, 150, 175..... 12 hours

Sophomore year

History 101, 102, 103..... 12 hours
Modern Language 306, 308, 310..... 24 hours
Philosophy 225, 250..... 8 hours
Theology 120..... 4 hours

Junior year

Biology 101, 102..... 8 hours
Chemistry 100..... 4 hours
Modern Language 411, 412, 413..... 6 hours
Social Science..... 12 hours
Theology 220, 320, 420..... 12 hours

Senior year

English 140..... 4 hours
Modern Language 414, 415..... 4 hours
Modern Language (minor) 110, 210, 220..... 24 hours
Electives..... 10 hours

Total..... 180 hours

Bachelor of Arts Classical Languages

Freshman year

Classical Language 101, 102, 103..... 12 hours
Classical Language (minor) 101, 102, 103..... 12 hours
English 110, 160, 170..... 12 hours
Philosophy 125, 150, 175..... 12 hours

Sophomore year

Classical Language 204, 205, 206.....	12 hours
Classical Language (minor) 204, 205, 206.....	12 hours
Philosophy 225, 250.....	8 hours
Theology 120.....	4 hours

Junior year

Biology 101, 102.....	8 hours
Chemistry 100.....	4 hours
Classical Language 307, 308, 309.....	12 hours

Classical Language (minor) 307, 308, 309.....	12 hours
Theology 220, 320, 420.....	12 hours

Senior year

Classical Language 413, 414, 415.....	12 hours
English 150.....	4 hours
Social Science.....	12 hours
Electives.....	8 hours

Total.....180 hours

French Courses

Fr 101 Reading French I	4 credits
Fr 102 Reading French II	4 credits
Fr 103 Reading French III	4 credits

An intensive study of the morphological and syntactical patterns of written French, together with its lexicon, to equip the student with the skills necessary to read and translate the standard written text. For non-majors and non-minors only.

Fr 110 Elementary French Language	8 credits
Fr 210 Intermediate French Language	8 credits
Fr 220 Advanced French Language	8 credits

An introduction to French literature and culture with the explication of selected texts.

Fr 306 The Nineteenth Century	8 credits
Fr 308 The Seventeenth Century	8 credits
Fr 310 The Sixteenth Century	8 credits
Fr 411 The Eighteenth Century	2 credits
Fr 412 The Twentieth Century I	2 credits
Fr 413 The Twentieth Century II	2 credits
Fr 414 The Twentieth Century III	2 credits
Fr 415 The Twentieth Century IV	2 credits
Fr 420 Supervised Study	2-8 credits

Special problems in French language and literature. Prerequisite: permission of department head.

Fr 433 French Language Methodology (Ed 433)	2 credits
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The theory and practice of French language pedagogy; an analysis and evaluation of current methods.

Fr 450 French Institute—Methodology	4 credits
Fr 451 French Institute—Directed Teaching	4 credits
Fr 452 French Institute—Linguistic Improvement	4 credits

A special sequence of courses designed for French language teachers in elementary and secondary schools. Prerequisite: graduate standing and approval of the department head.

German Courses

Gr 101 Reading German I	4 credits
Gr 102 Reading German II	4 credits
Gr 103 Reading German III	4 credits

An intensive study of the morphological and syntactical patterns of written German, together with its lexicon, to equip the student with the skills necessary to read and translate the standard text. For non-majors and non-minors only.

Gr 110 Elementary German Language	8 credits
Gr 210 Intermediate German Language	8 credits
Gr 220 Advanced German Language	8 credits

An introduction to German literature and culture with the explication of selected texts.

Gr 306 The Twentieth Century	8 credits
Gr 308 The Nineteenth Century I	8 credits
Gr 310 The Nineteenth Century II	8 credits
Gr 411 The Eighteenth Century I	2 credits
Gr 412 The Eighteenth Century II	2 credits
Gr 413 The Eighteenth Century III	2 credits
Gr 414 The Sixteenth Century	2 credits
Gr 415 The Seventeenth Century	2 credits

Gr 420 Supervised Study	2-8 credits
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Special problems in German language and literature. Prerequisite: Permission of department head.

Gr 433 German Language Methodology (Ed 433)	2 credits
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The theory and practice of German language pedagogy; an analysis and evaluation of current methods.

Gr 450 German Institute—Methodology	4 credits
Gr 451 German Institute—Directed Teaching	4 credits
Gr 452 German Institute—Linguistic Improvement	4 credits

A special sequence of courses designed for German language teachers in elementary and secondary schools. Prerequisite: Graduate standing and approval of department head.

Spanish Courses

Sp 101 Reading Spanish I	4 credits
Sp 102 Reading Spanish II	4 credits
Sp 103 Reading Spanish III	4 credits

An intensive study of the morphological and syntactical patterns of written Spanish, together with its lexicon, to equip the student with the skills necessary to read and translate the standard written text. For non-majors and non-minors only.

Sp 110 Elementary Spanish Language	8 credits
Sp 210 Intermediate Spanish Language	8 credits
Sp 220 Advanced Spanish Language	8 credits

An introduction to Hispanic literature and culture with the explication of selected texts.

Sp 306 The Generation of Ninety Eight	8 credits
Sp 308 The Eighteenth and Nineteenth Centuries in Spain	8 credits

Sp 310 The Nineteenth Century in Hispanoamerica	8 credits
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Sp 411 The Twentieth Century in Hispanoamerica	2 credits
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Sp 412 The Twentieth Century in Spain I	2 credits
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Sp 413 The Twentieth Century in Spain II	2 credits
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Sp 414 The Spanish Golden Age I	2 credits
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Sp 415 The Spanish Golden Age II	2 credits
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Sp 420 Supervised Study	2-8 credits
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Special problems in Spanish language and literature. Prerequisite: Permission of department head.

Sp 433 Spanish Language Methodology 2 credits
(Ed 433) The theory and practice of Spanish language pedagogy; an analysis and evaluation of current methods.

Sp 450 Spanish Institute—Methodology 4 credits
Sp 451 Spanish Institute—Directed Teaching 4 credits

Greek Courses

Gk 101 Greek Language I 4 credits
Gk 102 Greek Language II 4 credits
Gk 103 Greek Language III 4 credits

A functional treatment of the phonology, morphology, syntax and lexicon of Koine Greek with readings from the New Testament.

Gk 204 Attic Greek 4 credits
A transitional course to the Attic dialect with selections from Xenophon and Herodotus.

Gk 205 Greek Oratory 4 credits
Selections from the Attic orators.

Gk 206 Greek Lyric Poetry 4 credits

Gk 307 Plato 4 credits
Selections from the dialogues.

Gk 308 Greek Drama 4 credits

Gk 309 Greek Epic Poetry 4 credits
Introduction to the Homeric dialect with readings from the Iliad and Odyssey.

Gk 413 History of the Athenian Constitution 4 credits

Gk 414 Biographies of Famous Greek Leaders 4 credits

Gk 415 Greek Mythology and Religion 4 credits

Gk 420 Supervised Study 2-8 credits
Special problems in Greek language and literature. Prerequisite: Permission of department head.

Gk 433 Greek Language Methodology 2 credits
(Ed 433) The theory and practice of Greek language pedagogy; an analysis and evaluation of current methods.

Latin Courses

Lt 101 Latin Language I 4 credits

Lt 102 Latin Language II 4 credits

Lt 103 Latin Language III 4 credits
The phonology, morphology, syntax and lexicon of Classical Latin.

Lt 204 Cicero's Essays 4 credits

Lt 205 Roman Oratory 4 credits

Lt 206 Roman Poetry 4 credits
Selections from Catullus, Horace, Ovid and Tibullus.

Lt 307 Roman Philosophers 4 credits

Lt 308 Roman Comedy 4 credits

Lt 309 Vergil's Aeneid 4 credits

Lt 410 Roman Historians 2-4 credits
Selections from Livy, Caesar and Sallust.

Lt 411 Cicero's Rhetoric 2-4 credits
The principles of Roman rhetorical style.

Sp 452 Spanish Institute—Linguistic Improvement 4 credits

A special sequence of courses designed for Spanish language teachers in elementary and secondary schools. Prerequisite: Graduate standing and approval of department head.

Classical Languages Courses

Lt 412 Latin Patristic Literature 2-4 credits
Selections from the Latin Fathers

Lt 413 Roman Satire 4 credits

Lt 414 Roman-Alexandrian Poets 4 credits

Lt 415 Roman Tradition and Religion 4 credits

Lt 420 Supervised Study 2-8 credits
Special problems in Latin language and literature. Prerequisite: Permission of department head.

Lt 433 Latin Language Methodology 2 credits
(Ed 433) The theory and practice of Latin language pedagogy; an analysis and evaluation of current methods.

Lt 450 Latin Institute—Methodology 4 credits

Lt 451 Latin Institute—Directed Teaching 4 credits

Lt 452 Latin Institute—Linguistic Improvement 4 credits

A special sequence of courses designed for Latin language teachers in elementary and secondary schools. Prerequisite: Graduate standing and approval of department head.



Mathematics

Theodore S. Chihara, Ph.D., Head

Objectives

The Mathematics department offers two undergraduate programs. The first, leading to the Bachelor of Science degree, is designed to prepare the student for advanced study and professional work in mathematics. The second, for students wishing a more flexible program which provides for a concentration of work in a secondary field, leads to the Bachelor of Arts degree.

Degrees Offered

- Bachelor of Science
- Bachelor of Arts
- Master of Science in Natural Science

Advanced Placement in Calculus

Students who have completed a college level course in calculus in high school and have taken the Advanced Placement test in calculus of the College Entrance Examination Board may petition the department for placement on the basis of their test results. Students who wish college credit in addition to advanced placement should apply for credit by examination.

General Program Requirements

Students in mathematics must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Either French or German may be taken to fulfill the language requirement. A minimum grade of C is required in all mathematics courses applied toward the major. See programs of study below for additional requirements.

Honors Work in Mathematics

For superior students the department offers honors work consisting of a year of independent study under the supervision of a senior faculty member. Normally the work will be done during the senior year at a level beyond that of the regular undergraduate courses and will culminate in the writing of a term paper or senior thesis. Students who wish to undertake this program will be encouraged to take Mt 311 and 312 in the sophomore year and a 400 level series in their junior year in order to have the background sufficient to conduct their independent study. The independent study is an addition to the regular course requirements for the Bachelor of Science degree. No special distinction will be made in the degree earned by students completing the program.

Departmental Requirements

BACHELOR OF SCIENCE—62 hours in mathematics which must include Mt 131, 132, 231, 235, 236, 241, 311, 312 and 28 additional hours in upper division mathematics. At least one of the sequences, Mt

411, 412, 413 or Mt 431, 432, 433 must be included among the required electives. In certain circumstances with the approval of the department head, 12 hours of upper division work in a physical science may be substituted for 12 of the required elective hours in mathematics. Students in this program must maintain a cumulative grade point average and a mathematics grade point average of 2.50.

BACHELOR OF ARTS—50 hours in mathematics which must include Mt 131, 132, 231, 235, 236, 241, 311, 312, and 16 additional hours of approved upper division mathematics. General physics is recommended as an elective.

UNDERGRADUATE MINOR—26 hours of mathematics which must include Mt 131, 132, 231 plus 12 hours of approved electives beyond college algebra.

TEACHING MAJOR (Secondary level for School of Education)—46 hours of mathematics which must include Mt 131, 132, 231, 300, 311, 312, 321 plus 16 hours of approved electives beyond college algebra among which must be Mt 232 or Mt 236.

Bachelor of Science

Freshman year

English 110, 160 and core elective	12 hours
History 101, 102	8 hours
Mathematics 131, 132, 231	14 hours
Philosophy 125, 150, 175	12 hours
Physics 109	3 hours

Sophomore year

History 103	4 hours
Mathematics 241, 235, 236	12 hours
Physics 200, 201, 202	15 hours
Philosophy 225, 250	8 hours
Theology 120	4 hours
Electives	8 hours

Junior year

Language 101, 102, 103	12 hours
Mathematics 311, 312, elective	12 hours
Theology 220, 320, 420	12 hours
Electives	12 hours

Senior year

Mathematics	24 hours
Electives	8 hours

Total.....180 hours

Bachelor of Arts

Freshman year

English 110, 160 and core elective	12 hours
History 101, 102, 103	12 hours
Mathematics 131, 132, 231	14 hours
Philosophy 125, 150, 175	12 hours

Sophomore year

English core elective.....	4 hours
Mathematics, 235, 236, 241.....	12 hours
Philosophy 225, 250.....	8 hours
Science or Social Science.....	12 hours
Theology 120.....	4 hours
Electives.....	8 hours

Junior year

Language 101, 102, 103.....	12 hours
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Mathematics 311, 312, elective.....	12 hours
Minor.....	12 hours
Theology 220, 320, 420.....	12 hours

Senior year

Mathematics.....	12 hours
Minor or electives.....	8 hours
Electives.....	14 hours

Total.....180 hours

Mathematics Courses

Mt 10 Basic Algebra	No credit
Concepts, terminology, and notation of algebra; drill in the fundamental operations of algebra. Evening classes only.	
Mt 20 Basic Geometry	No credit
Fundamentals of plane geometry; basic concepts and formulas from solid geometry. Evening classes only. Prerequisite: Mt 10 or one unit of high school algebra.	
Mt 101 Intermediate Algebra	4 credits
Review of the fundamental operations of algebra; laws of exponents; linear and quadratic equations; systems of equations. Prerequisite: Mt 20 or one unit each of high school algebra and geometry. <i>Does not satisfy core curriculum requirements.</i>	
Mt 110 Trigonometry	4 credits
Trigonometric and inverse trigonometric functions, identities, equations, and graphs; logarithms. Prerequisite: Mt 101 or one and one half units of high school algebra. <i>Does not satisfy core curriculum requirements.</i>	
Mt 111 College Algebra	4 credits
Logic and sets; functions and relations; the real and complex number systems; the algebra of functions; matrices; elementary combinatorial analysis and probability. Prerequisite: Mt 110 or high school trigonometry.	
Mt 114 Elementary Electronic Computer Programming	3 credits
Fundamentals of digital computing. FORTRAN language basic instruction; flow charts, loops, subroutines. Operation of the 1620 system and supporting equipment of the University Computer Center. One two-hour laboratory period per week. Prerequisites: Mt 20 and Mt 101. <i>Does not satisfy core curriculum requirements.</i>	
Mt 131 Calculus and Analytic Geometry I	5 credits
Basic concepts of analytic geometry; limits and continuity of functions; the derivative and anti-derivative and applications; the definite integral and the fundamental theorem of calculus. Prerequisite: Mt 111 or qualifying examination.	
Mt 132 Calculus and Analytic Geometry II	5 credits
Properties of the definite integral, geometric and physical applications; the elementary transcendental functions; techniques of integration. Prerequisite: Mt 131.	

Mt 170 Fundamental Concepts of Mathematics I	4 credits
Mt 171 Fundamental Concepts of Mathematics II	4 credits
Introduction to some fundamental concepts of mathematics; sets and logic; the natural numbers and systems of enumeration; mathematical systems; topics from arithmetic, algebra and geometry; a brief introduction to calculus. Prerequisites: Mt 101 or qualifying examination for 170; 170 for 171.	
Mt 214 Principles of Digital Computers and Coding	3 credits
Number systems, machine components, basic machine language, Symbolic Programming System (SPS), operating principles. Assigned problems are processed on the 1620 system of University Computer Center. Prerequisite: Mt 114.	
Mt 231 Calculus and Analytic Geometry III	4 credits
Further applications of calculus; indeterminate forms, improper integrals and Taylor's formula; infinite series; plane curves, vectors, and polar coordinates. Prerequisite: Mt 132.	
Mt 232 Calculus and Analytic Geometry IV	4 credits
Solid analytic geometry, differentiation and integration of functions of several variables; line and surface integrals. Prerequisite: Mt 231.	
Mt 235 Linear Algebra and Calculus I	4 credits
Mt 236 Linear Algebra and Calculus II	4 credits
Matrices and vectors, vector spaces, linear transformations. Applications to vector valued functions: the differential, tangent lines and planes, inverse and implicit function theorems, extremal problems, multiple integrals, arc length and surface area. Prerequisites: Mt 231 for Mt 235; Mt 235 for Mt 236.	
Mt 241 Elementary Differential Equations (341)	4 credits
Methods of solving first order equations; linear equations with constant coefficients; Laplace transforms; series solutions of linear differential equations. Prerequisite: Mt 231.	
Mt 300 Methods for Secondary School Mathematics	4 credits
Special topics in mathematics relevant to the high school curriculum; emphasis on basic concepts and procedures for teaching them. Prerequisite: Mt 231 or permission of instructor.	

- Mt 311 Foundations of Algebra and Analysis I** 4 credits
- Mt 312 Foundations of Algebra and Analysis II** 4 credits
An introduction to concepts basic for the study of abstract algebra and modern analysis; sets and cardinal numbers; elementary theory of groups, rings and fields; the Peano axioms and the real number system; sequences, limits and continuity of functions. Prerequisite: Mt 235 or permission for Mt 311; Mt 311 for Mt 312.
- Mt 315 Number Theory** 4 credits
Divisibility and the Euclidean algorithm; the Euler ϕ -function; congruences; quadratic reciprocity law; numerical functions; the Mobius inversion formula. Prerequisite: Mt 132.
- Mt 321 Foundations of Euclidean Geometry** 4 credits
Introduction to the axiomatic foundations of Euclidean Geometry; ruler and compass constructions and the famous problems of antiquity; the 5th postulate and non-Euclidean geometries. Prerequisite: Mt 132.
- Mt 351 Probability** 4 credits
Basic concepts and theorems in probability theory; the binomial, Poisson, normal, and other fundamental probability distributions; moments; limit theorems. Prerequisites: Mt 232 or Mt. 236.
- Mt 371 Introduction to Numerical Methods** 4 credits
Approximation and errors; Newton's and Lagrange's formulas; finite differences and operators; numerical integration; numerical solution of differential equations. Three lectures per week. Two lab hours per week. Prerequisites: Mt 114, 231.
- *Mt 405 Fundamental Concepts of Analysis** 5 credits
The Peano axioms and the construction of the real number system; the complex number system; the limit concept in analysis. Prerequisite: One year of calculus.
- *Mt 410 Survey of Modern Algebra** 5 credits
Number systems, congruences, equivalence relations, groups, rings, integral domains and fields. Stress on the logic of postulational mathematics and its pertinence to the teaching of algebra. Prerequisite: One year of algebra.
- Mt 411 Introduction to Abstract Algebra I** 4 credits
- Mt 412 Introduction to Abstract Algebra II** 4 credits
- Mt 413 Introduction to Abstract Algebra III** 4 credits
The theory of groups, rings fields and field extensions; vector spaces and linear transformations; special topics. Prerequisites: Mt. 312 for Mt 411; Mt 411 for Mt 412; Mt 412 for 413.
- *Mt 415 Linear Algebra and Matrix Theory** 5 credits
Introduction to the theory of matrices and determinants, vector spaces, linear transformations. Prerequisite: One year of calculus.
- *Mt 420 Survey of Geometric Theories** 5 credits
Selected topics in finite geometry, projective geometry and non-Euclidean geometry. Prerequisite: One year of calculus.
- *Mt 425 Foundations of Geometry** 5 credits
A study of the axiomatic nature of geometry with particular attention to the meaning and role of "undefined terms," "definitions," "axioms," and "proofs." Prerequisite: One year of calculus.
- *Mt 430 Introduction to Higher Analysis** 5 credits
Concepts of function, limits and continuity, derivative and anti-derivative, the Riemann Integral. Prerequisite: Calculus and one upper division course in modern mathematics.
- Mt 431 Introduction to Real Analysis I** 4 credits
- Mt 432 Introduction to Real Analysis II** 4 credits
- Mt 433 Introduction to Real Analysis III** 4 credits
A rigorous introduction to real analysis: limits, continuity, differentiation of real functions; functions on metric spaces; application of compactness and connectedness; Riemann-Stieltjes integrals; sequences and series of functions; elements of Lebesgue theory. Prerequisites: Mt. 481 for Mt 431; Mt 431 for Mt 432; Mt 432 for Mt 433.
- *Mt 435 Introduction to Complex Variables** 5 credits
Covers the same topics as Mt 437. For high school teachers. Prerequisite: Mt 241 or 430 or 460 or equivalents.
- Mt 437 Introduction to Complex Variables** 4 credits
The complex number system, analytic functions, integration, series, residues, conformal mapping. Prerequisite: Mt 241.
- *Mt 450 Probability and Statistics** 5 credits
Truth tables, sets, combinatorial algebra; compound and conditional probability, random variables and distribution functions; elements of statistical inference. Prerequisite: One year of calculus.
- *Mt 460 Topics in Applied Mathematics** 5 credits
Introduction to differential equations and vector analysis; application to simple problems of rates, trajectories, harmonic motion, electrical circuits and related topics. Prerequisite: One year of calculus.
- Mt 461 Advanced Engineering Mathematics I** 3 credits
An introduction to the theory of functions of a complex variable: analytic functions, mappings, integration, series, residues. Prerequisite: Mt 241.
- Mt 462 Advanced Engineering Mathematics II** 3 credits
Fourier series, Legendre polynomials, Bessel functions, and applications to boundary value problems. Prerequisite: Mt 461.
- Mt 463 Advanced Engineering Mathematics III** 3 credits
Laplace and Fourier transforms, matrices and determinants, introduction to vector analysis. Prerequisite: Mt 462.
- Mt 471 Numerical Analysis** 4 credits
Matrix inversion; systems of linear equations; a fixed point theorem and its applications; initial and boundary value problems; methods of Runge-Kutta and Hermite; finite differences. Prerequisites: Mt 241 and 235.
- Mt 481 Elementary Topology** 4 credits
Set theory; topology of the real line; topological spaces; metric spaces. Prerequisite: Mt 312.
- Mt 491 Special Topics in Mathematics** 2-4 credits
May be repeated for a maximum of 12 credits. Prerequisite: Permission.
- Mt 499 Independent Study** 1-5 credits
May be repeated for a maximum of 10 credits. Prerequisite: Permission.

Military Science

Col. Robert A. Matter, B.S., Head

Objectives

The mission of the United States Army Detachment of Military Science is to train and ultimately commission as junior officers in the Army Reserve and Regular Army those male students who fulfill the academic and leadership requirements prescribed in the advanced program in conformance with the principles and educational aims of Seattle University. The program of instruction covers military fundamentals common to all branches of the service.

Degree Offered

Bachelor of Science in Military Science

General Program Requirements

Students in military science must satisfy core curriculum requirements of the University as specified on page 24 of this bulletin and those of the College of Arts and Sciences given on page 32. See programs of study below for additional requirements.

Programs

Three distinct programs are administered by the Military Science department; the basic course, the advanced course, through which the student may receive a commission in the Army, and the degree program in military science.

BASIC PROGRAM—The basic course is elective for all physically fit male students at the University. The course consists of two hours of classroom instruction and one drill period of one hour and twenty minutes per week for six academic quarters. Students may volunteer for the Army Reserve but will not be required to perform ready service training in excess of ROTC training. Participation in ROTC training alone is not creditable toward longevity for retirement or pay in the military service.

ADVANCED PROGRAM—The advanced program is elective for qualified male students who have successfully completed the two-year basic course or, in the case of transfer students, who have successfully completed a summer camp of approximately six weeks in duration prior to their junior year. Applicants for the program are required to achieve a satisfactory grade on the ROTC qualifying examination, be eligible for graduation and commissioning prior to reaching their 28th birthday, fulfill the medical requirements of the Army physical examination and satisfy the academic requirements of the University in the major field they have selected. Final selection of candidates will be accomplished by a board of military staff officers. The advanced course consists of two hours of class room instruction and one drill period per week for the fall and winter quarters of the junior and senior year. The spring quarter of the junior and senior year consists of four hours of class room instruction and one drill period per week. Students in the advanced program receive \$40 per month retainer pay during the two years in the program.

Junior college transfer students and other students transferring into Seattle University as juniors may be enrolled in the advanced course after successfully completing a summer camp of approximately six weeks in duration prior to their junior year. This camp will serve as a substitute for the two year basic course. Students in the two year program will receive \$40 per month during the two years in the program.

DEGREE PROGRAMS—Requirements for the three degree programs in military science are listed below.

Departmental Requirements

BACHELOR OF SCIENCE IN MILITARY SCIENCE (Humanities and Social Science option)—40 hours of military science courses as listed below with a minor concentration in humanities and social science plus 12 hours above core curriculum requirements in two of the following areas, science, political science, or mathematics.

BACHELOR OF SCIENCE IN MILITARY SCIENCE (Science option)—40 hours of military science courses as listed below with a minor concentration in biology, chemistry, physics or psychology.

BACHELOR OF SCIENCE IN MILITARY SCIENCE (Engineering option)—40 hours of military science courses with a concentration in engineering as listed below.

General Information

Uniforms, arms, equipment and textbooks are furnished by the government. Payment will be required from the student for any items lost or damaged out of the \$20 initial deposit required of every military science student.

Scholarships

Full tuition and book scholarships for either two or four years are offered to selected students who desire a military career. In addition, scholarship students are paid \$50 per month. Further information concerning scholarships can be obtained by writing to the Professor of Military Science, Seattle University.

Bachelor of Science in Military Science Humanities and Social Sciences

Freshman year

English 110, 160 and core elective 12 hours
History 101, 102, 103 12 hours
Military Science 101, 102, 103 6 hours
Philosophy 125, 150, 175 12 hours

Sophomore year

English core elective 4 hours
Mathematics 111 and 131 or 170 and 171 8 hours
Military Science 201, 202, 203 6 hours
Philosophy 225, 250 8 hours
Political Science 160 4 hours
Social Science 8 hours
Theology 120 4 hours

Junior year

Language 101, 102, 103	12 hours
Military Science 301, 302, 303	16 hours
Minor	12 hours
Theology 220, 320, 420	12 hours

Senior year

Military Science 401, 402, 403	12 hours
Minor	12 hours
Political Science	12 hours
Electives	8 hours
Total	180 hours

**Bachelor of Science in Military Science
Science Option**

Freshman year

English 110, 160 and core elective	12 hours
History 101, 102, 103	12 hours
Military Science 101, 102, 103	6 hours
Philosophy 125, 150, 175	12 hours

Sophomore year

Mathematics 111 and 131, or 170 and 171	8 hours
Military Science 201, 202, 203	6 hours
Philosophy 225, 250	8 hours
Political Science 160	4 hours
Science	12 hours
Theology 120	4 hours

Junior year

Language 101, 102, 103	12 hours
Military Science 301, 302, 303, 304	16 hours
Science (chemistry, biology, physics or psychology)	12 hours
Theology 220, 320, 420	12 hours

Senior year

Military Science 401, 402, 403	12 hours
Political Science	12 hours

Science	12 hours
Electives	8 hours
Total	180 hours

**Bachelor of Science in Military Science
Engineering Option**

Freshman year

Civil Engineering 121, 122, 123	3 hours
English 110, 160	8 hours
Mathematics 111, 131, 132	14 hours
Mechanical Engineering 111	3 hours
Military Science 101, 102, 103	6 hours
Philosophy 125, 150	8 hours
Physics 200	5 hours

Sophomore year

Electrical Engineering 251, 253	8 hours
Mathematics 231, 232	8 hours
Mechanical Engineering 271, 300	8 hours
Military Science 201, 202, 203	6 hours
Philosophy 175	4 hours
Physics 201, 202	10 hours
Theology 120	4 hours

Junior year

Chemistry 314, 315	8 hours
Electrical Engineering 254	2 hours
Mathematics 114	3 hours
Military Science 301, 302, 303	12 hours
Philosophy 225, 250	8 hours
Social Science	12 hours
Theology 220	4 hours

Senior year

English core option	4 hours
English electives	12 hours
History 101, 102, 103	12 hours
Military Science 401, 402, 403	12 hours
Theology 320, 420	8 hours
Total	192 hours

Military Science Courses

- MS 101 Organization of the Army and ROTC 2 credits**
Individual weapons and marksmanship; military drill; selected military subjects. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Fall.
- MS 102 U. S. Army and National Security 2 credits**
Selected military subjects; military drill. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 101. Winter.
- MS 103 Map Reading 2 credits**
Small unit tactics; selected military subjects; military drill. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 102. Spring.
- MS 201 Map Reading 2 credits**
Military drill. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 103. Fall.

- MS 202 American Military History 2 credits**
Military drill and command. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 201. Winter.
- MS 203 American Military History 2 credits**
Military operations and tactics; drill and command. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 202. Spring.
- MS 204 Military Drill 3 credits**
Map reading; military history; selected military subjects. Six weeks, June through July, to be held at a military reservation designated by Department of The Army. Prerequisite: None. Summer.
- MS 301 Military Leadership and Teaching Principles 3 credits**
Drill and command; selected military subjects. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisites: MS 203 or MS 204. Fall.

Music

Walter M. Aklin, A.B., *Adviser*

- MS 302 Military Teaching Principles** **3 credits**
Selected military subjects; missions and branches of the Army; drill and command. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 301. Winter.
- MS 303 Small Unit Tactics and Communications** **3 credits**
Pre-camp orientation; drill and command. Four one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 302. Spring.
- MS 304 ROTC Summer Camp** **3 credits**
Fort Lewis, Washington. Six weeks, June through July. Prerequisite: MS 303. Summer.
- MS 401 Military Justice** **3 credits**
Drill and command. Two one-hour conferences

- and one leadership laboratory (80 minutes) per week. Prerequisite: MS 303. Fall.
- MS 402 Military Operations and Logistics** **3 credits**
Drill and command. Two one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 401. Winter.
- MS 403 Army Administration** **3 credits**
Selected military subjects; drill and command. Four one-hour conferences and one leadership laboratory (80 minutes) per week. Prerequisite: MS 402. Spring.
- MS 404 Flight Training** **3 credits**
36 hours ground school, 35½ hours flight instruction. Conducted by FAA approved flight school. Costs paid by Department of The Army. Private pilot's license may be obtained upon completion of course. Prerequisite: Must be enrolled in Military Science Program.

Objectives

The Music department offers three fields of study especially designed to meet the artistic and practical needs of students. These areas are music education, applied music, and music history and art. Courses offered in the theory of music and in both instrumental and vocal practice may be applied to other programs of study as cultural electives. Students who intend to major in music should have playing ability in some instrument. The program for the Bachelor of Education in Music is described under the School of Education.

Degrees Offered

- Bachelor of Arts
- Bachelor of Education

General Program Requirements

Students in music must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of social science, 12 hours of science and 12 hours of language. Mu 130 must be taken for at least six quarters, but the credits are considered elective units and not part of the music major; Mu 114 may be waived upon evidence of successful examination.

Departmental Requirements

BACHELOR OF ARTS—53 hours of music which must include Mu 100, 114, 115, 116, 117, 301, 302, 303, 372, 373, 475 and 12 hours in applied music.

BACHELOR OF EDUCATION—59 hours of music which must include all courses required for the Bachelor of Arts degree plus Mu 313, 314 and 315.

UNDERGRADUATE MINOR—26 hours of music which must include Mu 100, 114, 115, 372, 373; 4 hours in applied music courses; and 3 hours in Mu 130.

Bachelor of Arts

Freshman year	
Art 100	4 hours
English 110, 160 and core elective.....	12 hours
History 101, 102, 103.....	12 hours
Music 100, 114.....	7 hours
Philosophy 125, 150, 175.....	12 hours
Speech 150	4 hours
Sophomore year	
Music 115, 116, 117.....	12 hours
Philosophy 225, 250.....	8 hours
Science	12 hours
Social Science	12 hours
Theology 120	4 hours
Junior year	
English 140 or 150.....	4 hours
Language 101, 102, 103.....	12 hours
Music 130, 301, 302, 303 and 8 hours of applied music	21 hours
Theology 220, 320, 420.....	12 hours
Senior year	
Music 372, 373, 475 and 2 hours of applied music	14 hours
Music 130	3 hours
Speech 320	4 hours
Electives	12 hours
Total.....	181 hours

Music Courses

- Mu 100 Music History and Literature** 4 credits
General survey of Western music, with emphasis on historical and cultural correlations.
- Mu 110 Vocal or Instrumental Music** 2 credits
- Mu 114 Music Fundamentals** 3 credits
Rudiments of music, with emphasis on elementary school needs.
- Mu 115 Harmony I** 4 credits
Ear training, music dictation, transposition and melody writing.
- Mu 116 Harmony II** 4 credits
Four-part writing, with the use of principal triads and inversions. Prerequisite: Mu 115.
- Mu 117 Harmony III** 4 credits
Dominant ninth chords and inversions, diminished seventh chords and inversions, secondary seventh chords and inversions, and modulations. Prerequisite: Mu 116.
- Mu 119 Studies in Gregorian Chant** 4 credits
Notation, compound beat and ictus, rhythm and other topics.
- Mu 130 University Chorale** 1 credit
- Mu 138 Chorale Methods** 2 credits
- Mu 139 Chorale Literature** 2 credits
- Mu 140 Technique of Chorale Conducting** 2 credits
- Mu 195 Music Appreciation** 2 credits
Emphasis on radio and television music.
- Mu 200 Music of J. S. Bach** 4 credits
Analysis of his instrumental and vocal music, particularly as reflecting the ultimate refinement of Baroque form.
- Mu 205 Symphonies of Beethoven** 4 credits
Nine works, preceded by brief consideration of symphonic form.
- Mu 210 Introduction to 20th-Century Music** 4 credits
Techniques, forms and styles, with emphasis on the works of Stravinsky, Bartok and Schoenberg.
- Mu 258 Instrumental Music I** 2 credits
Group study of the basic technique in various brass instruments.
- Mu 259 Instrumental Music II** 2 credits
Group study of the basic technique in various woodwind instruments.
- Mu 260 Instrumental Music III** 2 credits
Group study of the basic technique in various string instruments.
- Mu 295 Survey of Musicals and Light Operas** 4 credits
- Mu 296 Studies in American Music** 2 credits
Vocal and instrumental from folk ballads to the present time.
- Mu 301 Harmony IV** 4 credits
Chromatic harmony and modulations, altered chords, suspensions, melodic figurations and figured chords. Prerequisite: Mu 117.
- Mu 302 Counterpoint** 4 credits
Two and three part counterpoint in all five species. Prerequisite: Mu 301.
- Mu 303 Musical Forms** 2 credits
Analysis of song, rondo, and sonata; imitation invention, canon and fugue. Exercises in composition. Prerequisite: Mu 301.
- Mu 313 Elementary School Music** 2 credits
Principles of music teaching for the first six grades.
- Mu 314 Teaching and Supervision of Music in the Junior High School** 2 credits
- Mu 315 Teaching and Supervision of Music in the Senior High School** 2 credits
- Mu 317 Elementary Composition and Arranging** 4 credits
Original work and arrangements for combination of voices and instruments.
- Mu 372 Advanced Music History and Literature I** 4 credits
Development of Mu 100 for music majors and minors, with emphasis on the period beginning with the Renaissance and extending to the Early Romantic (Palestrina, Bach, Haydn, Mozart, Beethoven, Berlioz, Chopin).
- Mu 373 Advanced Music History and Literature II** 4 credits
From the Romantic to the present (Liszt, Mendelssohn, Brahms, Dvorak, Debussy, Richard Strauss, Stravinsky, Gershwin, etc.). Prerequisite: Mu 372.
- Mu 452 Band and Orchestra Literature** 2 credits
For school bands and orchestras.
- Mu 453 Technique of Instrumental Conducting** 2 credits
For school bands and orchestras.
- Mu 475 Great Operas** 4 credits
From the Renaissance to the present. Prerequisite: Mu 372 and 373.



Philosophy

Edmund W. Morton, S.J., Ph.D., Head

Objectives

The understanding of ourselves and of the world around us, which a university education attempts to develop, is neither simple nor facile. It must be accomplished along many lines of inquiry and by means of diverse methods. Throughout the history of education, philosophy has always been one of the most fruitful avenues of approach.

The task of philosophy has been and is to study the world in terms of that which constitutes its innermost being and reality. It seeks to discover those all-pervasive factors in the world which refuse to yield to the segregating tendencies of our fragmentary, piece-meal courses of study. It asks such profoundly searching questions as: What is the nature of reality? What is the meaning of existence? What is the nature of value and, is there any absolute value? What is man and his destiny? What is the nature of knowledge? Is there a God and can His existence be rationally determined?

The philosophy taught at Seattle University is part of a long tradition, a tradition which might be labelled, for want of better words, the *philosophia perennis*. It recognizes its debt to the past. Like any growing, expanding branch of knowledge it builds on the achievements of those who have gone before. But it also realizes that if it is to continue to advance and grow it must always be open to new problems, new ideas, new contributions, new perspectives and attitudes.

Degree Offered

Bachelor of Arts

University Philosophy Requirements

The Philosophy department contributes to the core curriculum required of all students at Seattle University. The philosophy core consists of 20 quarter hours. There are five courses in this program each of four quarter hours. It is highly desirable that the first three courses be taken in the freshman year and the remaining two courses in the sophomore year. The core offerings attempt to combine the best features of both the historical and the systematic approaches to philosophy.

Logic, which was formerly a requirement for all students at the University, has now been made an upper division course required of philosophy majors only. However, the essential themes of logic are included and stressed in the core courses.

In his freshman year, the student will take three courses. In the fall quarter he will take an introduction to philosophical thinking as exemplified by early Greek philosophers. He will study from primary sources such authors as Parmenides, Heraclitus, Plato, Aristotle and Plotinus. During the winter quarter the student will study a medieval synthesis as exemplified in the writings of St. Thomas Aquinas. This course will not only

provide an historical dimension but will also teach systematically the metaphysics of St. Thomas. In the spring quarter the student will study representatives of modern philosophy. He will investigate the writings of such philosophers as Descartes, Locke, Berkeley, Hume, Kant, Hegel and the Existentialists.

During his second year the student will study two systematic courses: one will investigate the problems of man and his knowledge, the other will study general problems of value and ethics with several applications to concrete situations.

Students transferring to Seattle University must complete these philosophy requirements:

Transfer with junior or senior standing (91 or more credits)—Pl 250 and 8 hours selected from Pl 125, 150, 175 or 225.	12 credits
Transfer with sophomore standing (45 to 90 credits)	16 credits
Transfer with freshman standing (44 credits or less)	20 credits

General Program Requirements

Students in philosophy must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those of the College of Arts and Science on page 32. Required sequences are 12 hours of social science, 12 hours of science or 8 hours of mathematics, and 12 hours of language.

Departmental Requirements

BACHELOR OF ARTS—44 hours of philosophy which must include Pl 125, 150, 175, 225, 250 and a program of six seminars approved by the department head. Competent students may substitute a written thesis for two of the required seminars. Eight hours of credit are granted for the thesis which is written under the direction of a faculty member appointed by the department head. The thesis must be fifty pages in length and should manifest competence in original investigation and effective reporting. A comprehensive examination will be required of all philosophy majors.

UNDERGRADUATE MINOR—32 hours of philosophy which must include Pl 125, 150, 175, 225, 250 and three seminars approved by the department head.

Bachelor of Arts

Freshman year

English 110, 160 and core elective	12 hours
Fine Arts	12 hours
History 101, 102, 103	12 hours
Philosophy 125, 150, 175	12 hours

Sophomore year

English core elective.....	4 hours
Philosophy 225, 250.....	8 hours
Science or mathematics and elective.....	12 hours
Social Science	12 hours
Theology 120	4 hours
Electives	8 hours

Junior year

Language 101, 102, 103.....	12 hours
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Minor	12 hours
Philosophy seminars	12 hours
Theology 220, 320, 420.....	12 hours

Senior year

Minor	12 hours
Philosophy seminars	12 hours
Electives	12 hours

Total.....180 hours

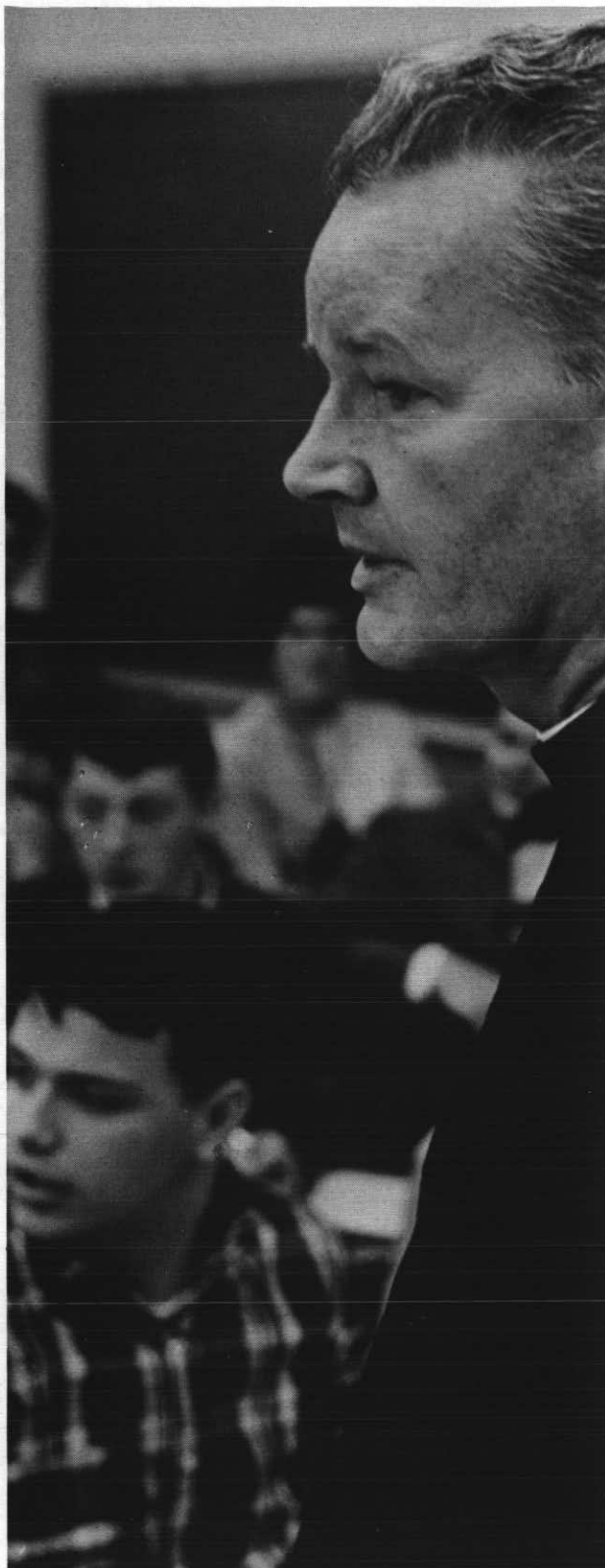
Philosophy Courses

- PI 125 Introduction to Ancient Greek Philosophy** 4 credits
Readings from source material of the philosophy of the ancient Greeks. Investigation of the topics problems and doctrines of the Pre-Socratics, Plato, Aristotle and Plotinus.
- PI 150 The Metaphysics of Saint Thomas Aquinas** 4 credits
A typical Christian medieval synthesis seen in its historical perspective and a particular examination of the themes of Thomistic metaphysics. Prerequisite: PI 125.
- PI 175 Introduction to Modern Philosophy** 4 credits
Readings from source material of the philosophy of the modern philosophers. Investigation of the topics, problems and doctrines of Descartes, Locke, Berkeley, Hume, Kant, Hegel and the Existentialists. Prerequisite: PI 150.
- PI 225 Philosophy of Man and His Knowledge** 4 credits
A systematic study of man, his nature and his powers. Special emphasis will be given to the human knowing process and the epistemological problem. Prerequisite: PI 175.
- PI 250 Ethics** 4 credits
The general theory of moral behavior, ethics as a science, the purpose of human life and the means of attaining this goal. Applications of general ethical theory will be studied in several specific instances. Prerequisite: PI 225.
- PI 260 Logic I** 4 credits
A systematic treatment of "traditional" logic. The themes of communication and language, division and definition, propositions, syllogisms and the nature of science will be examined. Prerequisite: PI 250.
- PI 261 Logic II** 4 credits
An introduction to symbolic or mathematical logic from both an intuitive and formal standpoint. Elementary calculus of classes and relations, and introduction to axiomatic set theory. Boolean Algebra. Of interest to philosophy and mathematics majors. Prerequisites: PI 250 or Mt 111.
- PI 270 Philosophy of Nature** 4 credits
A philosophical appraisal of the material universe, its nature, causes and activities, incorporating the mathematical and experimental findings into the philosophical account of the cosmos. Prerequisites: PI 250 and approval of department head.
- PI 275 Philosophy of Science** 4 credits
Philosophical reflections on the historical develop-

ment of scientific views of the cosmos. Readings from significant sources. Prerequisites: PI 250 and approval of department head.

- PI 290 Philosophy of Art** 4 credits
Philosophical reflection on the nature of art and its reality; beauty as a transcendental property of being and its relationship to art and the artist. Prerequisites: PI 250 and approval of department head.
- PI 305 Philosophy of Education** 4 credits
The several philosophies of education that are and have been existent in the American schools. Prerequisites: Ed 200 and approval of department head.
- PI 310 Plato** 4 credits
Selected readings from the Dialogues of Plato. Prerequisites: PI 250 and approval of department head.
- PI 350 Aristotle** 4 credits
Selected readings from the writings of Aristotle. Prerequisites: PI 250 and approval of department head.
- PI 385 Epicureans, Stoics and Skeptics** 4 credits
A survey of post-Aristotelian and pre-Plotinian philosophy, with stress on the writings of the Epicureans, Stoics and Skeptics. Prerequisites: PI 250 and approval of department head.
- PI 400 St. Augustine** 4 credits
Readings from the most important writings of St. Augustine, such as *The Confessions*, *City of God*. Prerequisites: PI 250 and approval of department head.
- PI 420 St. Thomas Aquinas** 4 credits
Selected readings from the writings of St. Thomas Aquinas. Prerequisites: PI 250 and approval of department head.
- PI 440 Renaissance Philosophy** 4 credits
A survey consisting of readings from important Renaissance philosophers, Erasmus, Ficino, Pomponazzi, Bruno. Prerequisites: PI 250 and approval of department head.
- PI 450 Descartes** 4 credits
A consideration of his principal writings, discussion of clear and distinct ideas, the methodic doubt, the existence and attributes of God, the nature of the material world, the mind-body problem. Prerequisites: PI 250 and approval of department head.

- Pl 455 British Empiricism of the Seventeenth Century** 4 credits
A study of British Empiricism with special emphasis on Locke, Berkeley and Hume. Prerequisites: Pl 250 and approval of department head.
- Pl 460 Kant** 4 credits
A seminar in *The Critique of Pure Reason*, with a brief supplementary discussion of the moral rationalism of Emmanuel Kant. Prerequisites: Pl 250 and approval of department head.
- Pl 465 Idealism** 4 credits
A study of the leading idealists, with emphasis on Hegel, Bradley and Royce. Prerequisites: Pl 250 and approval of department head.
- Pl 470 Philosophy of Society** 4 credits
A consideration of the social nature of man, purpose of society, social groups, the common good, subsidiarity, pluralism and authority. Prerequisites: Pl 250 and approval of department head.
- Pl 475 Linguistic Analysis** 4 credits
Representative readings from among Wittgenstein, Ayer, Ryle, Austin, Strawson, Hampshire, Hare. Prerequisites: Pl 250 and approval of department head.
- Pl 480 American Philosophy** 4 credits
A survey of American philosophy with readings from Peirce, James, Royce, Dewey, Whitehead. Prerequisites: Pl 250 and approval of department head.
- Pl 485 Phenomenology** 4 credits
Representative readings from Brentano, Husserl, Scheler, Heidegger, Sartre, Merleau-Ponty. Prerequisites: Pl 250 and approval of department head.
- Pl 490 Existentialism** 4 credits
A seminar in the existentialistic and pre-existentialistic trends in a selection from Kierkegaard, Nietzsche, Dostoyevsky, Heidegger, Sartre, de Beauvoir, Camus, Kafka, Jaspers, Tillich, Marcel and others. Prerequisites: Pl 250 and approval of department head.
- Pl 495 Value Theory** 4 credits
A survey and critique of various theories of value, including representatives of naturalism, utilitarianism, analysis, existentialism, formalism, moral sense. Prerequisites: Pl 250 and approval of department head.
- Pl 496 Thesis** 8 credits
An original philosophical investigation under the direction of a faculty member appointed by the chairman of the department. Substitute for two of the regularly required courses for philosophy majors. Prerequisites: Pl 250 and approval of department head.
- Pl 497 Special Topics in Philosophy** 4 credits
Pl 498 Special Topics in Philosophy 4 credits
Pl 499 Special Topics in Philosophy 4 credits
Prerequisites: Pl 250 and approval of department head.



Physics

James J. Cowgill, S.J., Ph.D., Head

Objectives

The Physics department has three objectives which are not mutually exclusive. A course in physical science which emphasizes the understanding of the basic concepts of classical and modern physics is offered for students in the liberal arts. Courses offered for majors in science and engineering have the added objective of developing in the student the ability to apply with facility the basic principles of physics in the solution of physical problems. These courses also prepare students for professional careers in physics or related fields.

The Bachelor of Science program in physics is designed for students planning graduate work. The Bachelor of Science in Natural Science program gives the student a solid background in basic and intermediate physics and fulfills the requirements of the American Institute of Physics for a major in this field. The minor in nuclear physics is recommended for students majoring in science and engineering who plan to do research or graduate study in fields involving nuclear science or engineering.

Degrees Offered

- Bachelor of Science
- Bachelor of Science in Natural Science
- Master of Science in Natural Science

General Program Requirements

Students in physics must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those of the College of Arts and Science on page 32. See programs of study below for additional requirements.

Departmental Requirements

BACHELOR OF SCIENCE—77 hours in physics which must include Ph 109, 200, 201, 202, 310, 311, 320, 330, 331, 332, 360, 375, 450, 451, 470, 481, 485, 486; Ph 376, 475 and 491 may be substituted for Ph 485 and 486.

BACHELOR OF SCIENCE IN NATURAL SCIENCE—48 hours in physics which must include Ph 109, 200, 201, 202, 310, 311, 330, 331, 332, 360, 375 and 470. Premedical option: Bl 150, 230, 240 and 450, Ch 235, 236 and 455. Health physics option: Bl 150, 200, 210 and 450; Ch 235, 236 and 455, Ph 376 and 475.

TEACHING MAJOR (SCHOOL OF EDUCATION)—46 hours of physics which must include Ph 109, 200, 201, 202, 310, 311, 330, 331, 332, 360, 375, 376, Ch 114 and 26 hours of mathematics including Mt 111, 131, 132, 231, 232 and 241.

UNDERGRADUATE MINOR—30 hours in physics which must include Ph 109, 200, 201, 202 and 12 hours selected from upper division courses.

UNDERGRADUATE MINOR IN NUCLEAR PHYSICS—34 hours in physics which must include Ph 109, 200, 201, 202, 360, 375, 376, 470 and 475.

MASTER OF SCIENCE IN NATURAL SCIENCE—45 hours in courses numbered 400 or higher which may include Ph 412, 422, 432, 452, 533, 562, 563, 572, 573 and 574; 20 hours selected from corresponding programs in chemistry or mathematics.

Bachelor of Science

Freshman year

Chemistry 114, 115, 116.....	12 hours
English 110, 160 and core elective.....	12 hours
Mathematics 111, 114, 131, 132.....	17 hours
Physics 109, 200.....	8 hours

Sophomore year

History 101, 102.....	8 hours
Mathematics 231, 232, 241.....	12 hours
Philosophy 125, 150, 175.....	12 hours
Physics 201, 202, 310, 311.....	18 hours

Junior year

History 103.....	4 hours
Mathematics 437.....	4 hours
Philosophy 225, 250.....	8 hours
Physics 320, 330, 331, 332, 360, 361.....	25 hours
Theology 120.....	4 hours

Senior year

Physics 375, 450, 451, 470 and 486, 485 or 376, 491, 475.....	26 hours
Theology 220, 320, 420.....	12 hours

Total.....182 hours

Bachelor of Science in Natural Science

Freshman year

Chemistry 114, 115, 116.....	12 hours
English 110, 160 and core elective.....	12 hours
History 101, 102.....	8 hours
Mathematics 111, 131, 132.....	14 hours
Physics 109.....	3 hours

Sophomore year

History 103.....	4 hours
Mathematics 231, 232, 241.....	12 hours
Philosophy 125, 150, 175.....	12 hours
Physics 200, 201, 202.....	12 hours
Electives.....	8 hours

Junior year

Language 101, 102, 103 or electives.....	12 hours
Philosophy 225, 250.....	8 hours
Physics 310, 311, 360.....	12 hours
Theology 120.....	4 hours
Electives.....	8 hours

Senior year

Physics 330, 331, 332, 375, 470.....	18 hours
Theology 220, 320, 420.....	12 hours
Electives.....	6 hours

Total.....180 hours

- Ph 100 Modern Physical Science I** 4 credits
- Ph 101 Modern Physical Science II** 4 credits
- Ph 102 Modern Physical Science III** 4 credits
The historical and philosophical development of the physical sciences for non-science majors who have not had high school physics. Lectures include laboratory demonstrations but major emphasis will be on the historical development of the fundamental laws of the physical sciences. Several readings other than textbook material will be required. Topics are the study of motion; planetary system; structure and method of the physical sciences; the conservation principle; origins of the atomic theory in physics and chemistry; the theories of fields in electricity and magnetism; the origin and development of the quantum theory of light and matter; the modern theory of the atom and the nucleus. *Do not satisfy core curriculum requirements for students who have had high school physics.*
- Ph 105 Mechanics and Sound** 4 credits
Uniform motion, accelerated motion, force, rotational motion, energy, statics, harmonic motion, wave motion and sound. One three-hour laboratory per week. Prerequisites: Mt 101, Mt 110.
- Ph 106 Electricity and Magnetism** 4 credits
Electric charge, magnetism, current and resistance, electric cells, electromagnetism, inductance and capacitance, alternating currents, thermoelectricity and elementary theory of electronics. Winter. One three-hour laboratory per week. Prerequisite: Ph 105.
- Ph 107 Heat and Light** 4 credits
Source and velocity of light, reflection and refraction, dispersion and color, lenses, optical instruments, interference and diffraction, polarized light, mechanics of gases, heat and thermodynamics. Spring. One three-hour laboratory per week. Prerequisite: Ph 106.
- Ph 108 Atomic and Nuclear Physics** 4 credits
Radiation, atomic structure, relativity, natural radioactivity, artificial radio-activity, nuclear energy. Laboratory exercises in basic radiation measurements. Fall. One three-hour laboratory per week. Prerequisite: Ph 107.
- Ph 109 Problems in Physics** 3 credits
Training in methods of attacking, analyzing and solving problems in physics. Deals principally with problems in dynamics, elementary mechanics, statics and graphics. Prerequisite: Mt 110.
- Ph 200 Mechanics and Sound** 5 credits
Vectors, uniform motion, linear and angular acceleration, force, rotational motion, mechanical energy, statics, harmonic motion, elasticity and momentum, impact, wave motion, and sound. Fall, Spring. One three-hour laboratory per week. Prerequisites: CE 102 or Ph 109 and Mt 131.
- Ph 201 Electricity and Magnetism** 5 credits
Electric charge, magnetism, current and resistance, electric cells, electromagnetism, inductance and capacitance, alternating currents, thermoelectricity and thermionics. Fall, winter. Prerequisites: Ph 200, Mt 132.
- Ph 202 Light and Modern Physics** 5 credits
Source and velocity of light, refraction, optical instruments, interference and diffraction, polarized light, radiation, atomic structure, radioactivity, nuclear energy, mechanics of gases and thermodynamics. Winter, Spring. Prerequisites: Ph 201 and Ch 114.
- *Ph 305 General Physics** 6 credits
A review of general physics for high school teachers but not applicable toward the Master's Degree in Natural Science. One three-hour laboratory and one problem session per week.
- Ph 310 Mechanics (Intermediate Physics) I** 4 credits
Statics, equilibrium of systems under the influence of forces in a plane; kinematics; dynamics, motion of particles and frames of reference in a plane; motion of rigid bodies parallel to a plane; impulse and collisions. Fall and Winter. Prerequisites: Ph 200 (Mt 232 corequisite).
- Ph 311 Mechanics (Intermediate Physics) II** 4 credits
Scalar and Vector product of vectors; moment of vectors; statics, kinematics and dynamics in space of particles and rigid bodies; Lagrange and Hamilton equations, theory of vibrations; the special theory of relativity. Prerequisites: Ph 310 (Mt 241 corequisite).
- Ph 320 Thermodynamics** 5 credits
Equations of state; first and second laws of thermodynamics; transfer of heat; entropy and thermodynamic functions; kinetic theory of the ideal gas; introduction to statistical mechanics. Fall. Prerequisites: Ph 202, Mt 232, Ch 114.
- Ph 330 Electricity and Magnetism I** 4 credits
An intermediate course in electricity and magnetism. Conductors and dielectrics; d.c. circuits; induced emf and magnetic flux properties of capacitors and inductors; a.c. circuit problems; conduction in gases. Prerequisites: Ph 201, Ph 311.
- Ph 331 Electricity and Magnetism II** 4 credits
Electrostatics; electric potential; properties of dielectrics and capacitors; electromagnetic effects; Ampere's and Faraday's laws; magnetic properties of matter; ferromagnetism; transformers; and electromagnetic waves. One four-hour laboratory per week. Prerequisite: Ph 330.
- Ph 332 Experimental Electronics** 4 credits
A laboratory course in electronics. Two laboratories per week. Prerequisite: Ph 331.
- Ph 360 Modern Physics I** 4 credits
Fundamental particles, atoms and nuclei, wave particle experiments, introductory quantum mechanics, atomic structure and spectra. Winter. Prerequisites: Ph 202, Mt 241, and Ch 112 or 115.
- Ph 361 Modern Physics II** 4 credits
Structure of molecules; binding and energy bands in solids; electrical, thermal and magnetic properties of solids; imperfections in solids; semiconductors; physical electronics; radioactivity and applied nuclear physics. Spring. Prerequisite: Ph 360.

- Ph 375 Nuclear Instrumentation** 2 credits
Basic detecting and measuring instruments, concepts of shelf ratios; coincidence corrections, self-absorption, back scattering errors, and efficiency for the G-M, proportional and scintillation counters. Fall. One laboratory per week. Prerequisite: Ph 202.
- Ph 376 Basic Radiation Measurement** 2 credits
Measurement of half-lives of radionuclides, energy of alpha and beta particles, gamma ray spectra, neutron activation, techniques of measuring soft beta emitters. Winter. One laboratory per week. Prerequisite: Ph 375.
- *Ph 412 Principles of Mechanics** 6 credits
Introduction to vector analysis, statics, Newton's laws of motion, work and energy, impulse and momentum, circular motion, moment of inertia, elasticity, harmonic motion. One three-hour laboratory and one problem session per week. Prerequisites: Ph 105 and Mt 132 or equivalent.
- *Ph 422 Principles of Heat and Wave Motion** 5 credits
Effects of heat, calorimetry, change of state, thermal behavior of gases, laws of thermodynamics, transfer of heat. Free and forced harmonic oscillations, wave motion, sound. One three-hour laboratory and one problem session per week. Prerequisite: Ph 412 or equivalent.
- *Ph 432 Principles of Electricity and Magnetism** 6 credits
The electric field, direct current circuits, chemical and thermal electromotive force, properties of dielectrics, the magnetic field, the magnetic field of a moving charge, induced electromotive force, inductance, magnetic properties of matter, alternating currents and electromagnetic waves. One three-hour laboratory and one problem session per week. Prerequisites: Ph 106 or equivalent and Ph 412.
- Ph 450 Optics I** 4 credits
Electromagnetic spectrum including microwaves, wave propagation, standing waves, interference waves. Winter. One four-hour laboratory per week. Prerequisites: Ph 331, Mt 341.
- Ph 451 Optics II** 4 credits
Diffraction, electromagnetic theory, absorption, electromagnetic waves, polarization, double refraction, electromagnetic polarization. One four-hour laboratory per week. Prerequisite: Ph 450.
- *Ph 452 Principles of Light** 5 credits
Sources and velocity of light, reflection and refraction of light, dispersion, spectra and color, lenses, optical instruments, interference and diffraction, polarized light, line spectra and thermal radiation. One three-hour laboratory and one problem session per week. Prerequisite: Ph 412 or equivalent.
- Ph 470 Nuclear Physics** 4 credits
Nuclear structure and models, nuclear forces, nuclear processes, properties of nucleons, mesons and other unstable elementary products. Prerequisite: Ph 360.
- Ph 475 Subcritical Reactor** 4 credits
The basic physics and engineering problems involving operation of a reactor. One laboratory per week. Prerequisites: Ph 360, 376 and 470.
- Ph 481 Theoretical Physics** 4 credits
An introduction to mathematical physics. Transformation theory, matrix and tensor analysis, orthogonal functions, boundary value problems, field theory and the use of Green's function, and relativity. Prerequisites: Ph 311, Mt 241.
- Ph 485 Quantum Mechanics I** 4 credits
An introduction to quantum mechanics. The state function, the Uncertainty Principle, the Schrodinger equation, the square well and one dimensional solutions, wave packets, semi-classical approximation methods, and motion in three dimensions. Prerequisites: Ph 481 and Mt 437.
- Ph 486 Quantum Mechanics II** 4 credits
The Born approximation, time dependent perturbation theory, angular momentum and spin, potential scattering, and the Dirac equation. Prerequisite: Ph 485.
- Ph 491 Special Topics in Physics** 2-4 credits
Ph 492 Special Topics in Physics 2-4 credits
Ph 493 Special Topics in Physics 2-4 credits
Ph 497 Research Project 2 credits
Ph 498 Research Project 2 credits
Ph 499 Research Project 2 credits

Graduate Courses

- *Ph 533 Electronics: Theory and Practice** 5 credits
Electronic principles, basic circuits and components, servo systems, operational amplifiers, feedback control, digital circuits. Two laboratories per week. Prerequisite: Ph 432.
- *Ph 562 Principles of Modern Physics** 5 credits
The electron, emission of electrons, relativity, atomic spectra and atomic structure, quantum mechanics, x-rays, molecular structure and molecular spectra, low-temperature phenomena. Prerequisites: Ph 412 and 432 or equivalent.
- *Ph 563 Principles of Nuclear Physics** 4 credits
Basic nuclear concepts, radioactive decay, alpha emission, beta decay, gamma radiation, nuclear masses, nuclear structure, nuclear reactions, nuclear fissions, cosmic rays and subnuclear particles. Prerequisite: Ph 562.
- *Ph 572 Principles of Nuclear Instrumentation** 2 credits
Basic detecting and measuring instruments, concepts of shelf ratios, coincidence corrections, self-absorption, investigation of back scattering errors and efficiency for the G-M, proportional and scintillation counters. Two laboratories for the second four weeks. Prerequisite: College physics.
- *Ph 573 Principles of Basic Radiation Measurement** 2 credits
Investigation of the basic measurable physical properties of radionuclides, half-lives of radionuclides, energy of alpha and beta particles, gamma ray spectra, neutron activation, techniques of measuring soft emitters. Two laboratories for the second four weeks. Prerequisite: Ph 572.
- *Ph 574 The Subcritical Reactor** 3 credits
This course is designed to acquaint the student with the basic physics and engineering problems of reactor operation. One laboratory per week. Prerequisites: Ph 563 and 573.

*Offered summer only for high school teachers in the master's degree program in natural science.

Political Science

Charles S. LaCugna, Ph.D., Head

Objectives

The curriculum in political science introduces the student to political values, trains him in political analysis, lays the intellectual foundation for citizenship and informs him of government processes at the international, federal, state and local level. It prepares students for graduate study or for careers in government, research, teaching, or private enterprise where a knowledge of political science is required.

Degree Offered

Bachelor of Arts

General Program Requirements

Students in political science must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those for the College of Arts and Science on page 32. Required sequences are 12 hours of social science, 12 hours of science or 8 hours of mathematics and 12 hours of modern language.

Departmental Requirements

BACHELOR OF ARTS—48 hours of political science which must include Pls 160, 200, 214, 218, 250, 349, 353, 385, and 8 hours of electives chosen from Pls 224, 250, 251, 252 or 253 (American sequence) and 8 hours of electives chosen from Pls 351, 352, 353, 355 (political theory sequence). The fine arts sequence is recommended as an elec-

tive. History, economics, philosophy, psychology or sociology are recommended as minors.

UNDERGRADUATE MINOR—24 hours which must include Pls 160, 200, 214, 218, 349 and 353.

Bachelor of Arts

Freshman year

English 110, 160 and core elective 12 hours
History 101, 102, 103 12 hours
Philosophy 125, 150, 175 12 hours
Political Science 160, 200, 214 12 hours

Sophomore year

English core elective 4 hours
Philosophy 225, 250 8 hours
Political Science 218 and electives 12 hours
Science or mathematics and elective 12 hours
Social Science 8 hours
Theology 120 4 hours

Junior year

Language 101, 102, 103 12 hours
Minor 12 hours
Political Science 200, 349, 385 12 hours
Theology 220, 320, 420 12 hours

Senior year

Minor 8 hours
Political Science 353 and electives 16 hours
Social Science 4 hours
Electives 8 hours

Total 180 hours

Political Science Courses

- Pls 160 American National Government 4 credits**
A study of the structure, general functions and interrelations of the executive, legislative and judicial branches of the national government.
- Pls 200 Comparative Parliamentary Democracies 4 credits**
(314) An analysis of selected foreign democratic systems. Emphasis upon constitutional and ideological principles, governmental forms, practices and problems. Prerequisite: Pls 160.
- Pls 214 Government and the Public Welfare 4 credits**
This course concentrates upon the functions rather than the structure or processes of American government. Special emphasis is placed upon relations between government and business, labor and agriculture. Prerequisite: Pls 160.
- Pls 218 U. S. Constitution 4 credits**
(211) The development of this unique document; the philosophy it embodies and its meaning today through a study of precedents and ruling cases. Prerequisite: Pls 160.
- Pls 224 Political Parties and Interest Groups 4 credits**
Study of dynamic relationships among groups in the American political process; special emphasis on

role, organization, strategy and leadership of American political parties. Prerequisite: Pls 160.

- Pls 250 Public Administration 4 credits**
An analysis of governmental administration; the bureaucratic state; the role of the administrator; organizational theory; personnel administration; administration of finances; administrative law. Prerequisite: Pls 160.

- Pls 251 State Government and Politics 4 credits**
An analysis of the unifying principles and the great diversities of the 50 states; emphasis on federal-state intergovernmental relationships. Prerequisite: Pls 160.

- Pls 252 Urban Government and Metropolitan Areas 4 credits**
Study of governmental role in urbanization and metropolitan growth; special emphasis on organization and politics of American cities. Prerequisite: Pls 160.

- Pls 253 The American Presidency 4 credits**
A study of the presidential office and its powers; special treatment of the President's relations with the Congress and with bureaucracy structure. Prerequisite: Pls 160.

- Pls 290 Diplomatic and Consular Practices 4 credits**
An analysis of American foreign policy-making; the constitutional framework; the role of the President, the Congress, the Department of State, the military, public opinion and pressure groups. Prerequisite: Pls 160.
- Pls 291 United States Foreign Policy 4 credits**
American policy in Western Europe, the Near East, Africa, the Far East, the Western Hemisphere and especially in international organizations. Prerequisite: Pls 160.
- Pls 315 Comparative Totalitarian Political Systems 4 credits**
An analysis of selected major totalitarian systems; emphasis on the environment, party and regime origins, ideological and governmental principles, organs of terror and state control. Prerequisite: Pls 160.
- Pls 341 Comparative Afro-Asian Political Systems 4 credits**
An analysis of selected Afro-Asian systems; emphasis upon the generality and diversity of forms and ideology, as well as problems of nation building. Prerequisite: Pls 214.
- Pls 342 History of American Political Thought 4 credits (202)**
A study of American political traditions; Puritanism, revolutionary thought, federalism, Jeffersonianism, intellectual democracy, slavery, progressivism, modern day pragmatism and social utilitarianism. Prerequisite: Pls 160.
- Pls 349 International Relations 4 credits**
An analysis of the dynamic forces in international relations; power, nationalism, sovereignty, colonialism, imperialism; theories of war and peace. Prerequisite: Pls 314.
- Pls 350 International Law 4 credits**
Fundamentals of international law; states and international law; the individual in international law; creation, application and enforcement of international law. Prerequisite: Pls 349.
- Pls 351 Ancient Political Thought 4 credits**
A critical examination of the political ideas from the pre-Socratics to St. Augustine, with an emphasis on reading the sources. Prerequisite: Pls 160.
- Pls 352 Political Thought of Middle Ages and Renaissance 4 credits**
Writings of the later Fathers, the early, middle and late Scholastic period and the Renaissance to the end of the 16th century. Prerequisite: Pls 160.
- Pls 353 Modern Political Thought 4 credits**
Political ideas from James I through Hobbes, Locke, Montesquieu, Rousseau, the Revolutionary periods, the English Utilitarians, the Socialists of the 19th and 20th centuries. Prerequisite: Pls 160.
- Pls 355 Recent Political Theory 4 credits**
A critical study of the writings from Karl Marx to the present; political ideas and methods employed by these theorists. Prerequisite: Pls 160.
- Pls 385 International Organizations 4 credits**
An introduction to the history, theories and problems of international organizations; the League of Nations and the United Nations. Prerequisite: Pls 349.
- Pls 449 Problems in International Relations 4 credits**
Theories, scope and methods in the study of international relations; assessment of the dynamic international forces and a critical analysis of international political institutions. Prerequisite: Permission of instructor.
- Pls 451 Problems in Political Theory 4 credits**
The nature of civil society, government and law, the common good, the natural law theory and civil rights in the open versus the closed society. Prerequisite: Permission of instructor.
- Pls 460 Problems in American Government 4 credits**
Issues arising from the federal system and the branches of government. Prerequisite: Permission of instructor.
- Pls 498 Scope and Methods of Political Science 4 credits**
Introduction to the history, methodology and focus of research in political science; behavioral methods. Prerequisite: Permission of instructor.
- Pls 499 Investigation of Special Topics 4 credits**
Supervised research work. Open to senior political science majors with the approval of the head of the department.



Premedical and Pre dental

Richard A. Neve, Ph.D., Adviser

Pre-professional programs in dentistry and medicine are not fields of concentration, they are career choices. The best preparation for these careers, and the one preferred by professional schools, is a complete four-year undergraduate program leading to a bachelor's degree.

Program

Students planning to enter medical or dental school may undertake a regular degree in any department of the University. These students should indicate to their adviser the specific area of pre-professional interest such as biology-premedical or pre dental, chemistry-premedical or pre dental. If a non-science major is chosen, the dental or medical school requirements in science must

still be met. In general these are one or two years of biology, two years of chemistry and one year of physics. Most professional schools also recommend calculus. The recommendation of the Association of American Medical Colleges for electives in the humanities and social and behavioral sciences is more than adequately met by the Seattle University core curriculum.

The medical college and dental college admission tests are given each year to all students who expect to apply to these professional schools. Each student is interviewed by the premedical committee before taking the examination. All applications for admission to medical or dental schools must be approved by the adviser and his committee.

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Prelaw

preprofessionl

Ronald A. Peterson, LL.B., Adviser

The best preparation and a requirement for entrance to many law schools is the completion of a four-year program for the bachelor's degree. However, some law schools will admit students who have completed three years of undergraduate work if their academic record is above average.

In advising prelaw students, Seattle University follows the recommendations of the Association of American Law Schools. These stress comprehension and expression in words, critical understanding of human institutions and values with which the law deals, and creative power in thinking. These capacities may be developed through study in any of a number of departmental majors.

Program

Entering students interested in law must declare a major in the field in which they are most interested and for which they are best suited. Those unable to make such a determination upon entrance will be enrolled in the First Humanities Program. The program of study of each prelaw student must be approved by the departmental adviser and the prelaw adviser should be consulted quarterly. During their junior year, students must acquaint themselves with the entrance requirements of the law school they plan to attend and make arrangements to take the law school admissions test. The application form and the instruction booklet for this test may be obtained from the prelaw adviser.

Pre-Major

William F. LeRoux, S.J., S.T.D., Director

Objectives

The pre-major program is designed for students allowed to enter the University on probation. Guidance is furnished by the pre-major director. Admission to this group, which is of limited enrollment, is determined on the basis of academic record as qualified by other evidence of ability to meet the level of academic performance necessary to earn a degree. This evidence may include test scores, recommendations from the high school, maturity and change in motivation.

Students in this program who successfully demonstrate the ability to work toward a degree may declare a major in the College of Arts and Sciences or may transfer to other schools of the University. The transfer is subject to the approval of the pre-major director and the dean of the particular college or school selected

and must be completed by the end of the sophomore year.

Pre-Major Program

Freshman year

English 110, 160 and core elective	12 hours
History 101, 102, 103	12 hours
Philosophy 125, 150, 175	12 hours
Social Science (if academically eligible for full program)	8 hours

Sophomore year

English core elective	4 hours
Major	12 hours
Philosophy 225, 250	8 hours
Science or mathematics and elective	12 hours
Social Science or elective	8 hours
Theology 120	4 hours

Psychology

James E. Royce, S.J., Ph.D., *Head*

Objectives

The curriculum is designed for students who plan to work as professional psychologists and thus need a sound preparation for graduate study; for students who plan a career in any field dealing primarily with people, such as nursing, teaching, social work, guidance and personnel; or for those who desire a well-rounded education and thus need a basic knowledge and understanding of human behavior. The specific and unique role of the Department of Psychology is to provide a solid knowledge of psychology as an empirical science, within the framework of Christian principles.

Degrees Offered

Bachelor of Arts
Bachelor of Science

General Program Requirements

Students in psychology must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. See programs of study below for additional requirements.

Psychology majors may choose any minor but are advised to take mathematics, biology or sociology. For social work, the recommended curriculum is a major in psychology and a minor in sociology. Premedical students may take a Bachelor of Science in psychology.

Departmental Requirements

BACHELOR OF ARTS—42 hours of psychology which must include Psy 100, 201, 202, 301, 310 or 315, 380, 381, 401, Sc 340 or Psy 460, and two other psychology courses.

UNDERGRADUATE MINOR (ARTS)—24 hours of psychology which must include Psy 100, 310 or 315, Sc 340 or Psy 460, and three other psychology courses.

BACHELOR OF SCIENCE—42 hours of psychology which must include Psy 100, 201, 202, 310 or 315, 330, 380, 381, 401, 402 and two other psychology courses plus minimum of 40 hours of mathematics and physical science.

UNDERGRADUATE MINOR (SCIENCE)—24 hours of psychology which must include Psy 100, 201, 330 or 401 and three other psychology courses.

Bachelor of Arts

Freshman year

English 110, 160 and core elective 12 hours
History 101, 102, and 103 12 hours

Psy 100 Introductory Psychology 4 credits

A general introduction to the data of scientific psychology, including its nature, scope and method; organic, environmental and personal factors that influence human behavior.

Psy 201 Statistics I 4 credits

Philosophy 125, 150, 175 12 hours
Mathematics or elective 4 hours
Psychology 100 4 hours
Social Science 4 hours

Sophomore year

Biology 150, 200, 210 12 hours
English core elective 4 hours
Philosophy 225, 250 8 hours
Psychology 201, 202, 310 or 315 10 hours
Social Science 4 hours
Theology 120 4 hours
Electives 2 hours

Junior year

Minor or electives 12 hours
Psychology 301, 380, 381 and electives 20 hours
Theology 220, 320, 420 12 hours
Elective 4 hours

Senior year

Language 101, 102, 103 or electives 12 hours
Minor or electives 12 hours
Psychology 401, 460 or Sc 340 8 hours
Electives 4 hours

Total 180 hours

Bachelor of Science

Freshman year

Chemistry 114, 115, 116 12 hours
English 110, 160 and core elective 12 hours
Mathematics 8 hours
Philosophy 125, 150, 175 12 hours
Psychology 100 4 hours

Sophomore year

Biology 150, 200, 210 12 hours
Philosophy 225, 250 8 hours
Psychology 201, 202, 310 or 315 10 hours
Social Science 4 hours
Theology 120 4 hours
Electives 6 hours

Junior year

Science or mathematics 12 hours
Physics 105, 106 8 hours
Psychology 330, 380, 381 12 hours
Theology 220, 320, 420 12 hours
Elective 4 hours

Senior year

History 101, 102, 103 12 hours
Language or electives 12 hours
Psychology 401, 402 and electives 16 hours

Total 180 hours

Psychology Courses

Psy 202 Statistics II 2 credits

(I) Basic principles and methods for compiling and interpreting data statistically; graphs, frequency distribution, sampling, correlation; three lecture and two laboratory hours per week. (II) Analysis of variance, Chi square, regression and correlation and non-parametric statistics. Prerequisite: Psy 201.

- Psy 203 Machine Methods in Statistics** 2 credits
Adaptation of the problems of basic statistics to machine solution. This laboratory course utilizes automatic desk calculators. Three laboratory hours per week. Prerequisite: Psy 201 or equivalent.
- Psy 301 History and Schools of Psychology** 4 credits
Survey of the history of psychology, including the classic periods of structuralism, functionalism, behaviorism, psychoanalytic schools and Gestalt. Prerequisite: Psy 100.
- Psy 302 Contemporary Theories** 4 credits
Critical examination of the major theories, issues and methodology in psychology since 1935; emphasis on personality, learning and perception. Prerequisite: Psy 301 or permission.
- Psy 310 Personality Adjustment** 4 credits
The normal personality; self-knowledge and self-actualization; personality adjustment problems; various inadequate reactions, escape and defense mechanisms; early detection, nature and causes; positive mental health. Prerequisite: Psy 100.
- Psy 315 Abnormal Psychology** 4 credits
A survey of the facts of abnormal mental life; kinds, symptoms, nature and causes of mental disorders; abnormalities of specific functions; theories of etiology. Prerequisite: Psy 100.
- Psy 322 Psychology of Growth and Development** 4 credits
Development from infancy; formative aspects of childhood; puberty; characteristics and special problems of adolescents; emotional maturation. Prerequisite: Psy 100 or equivalent.
- Psy 323 Child Psychology** 4 credits
The child from birth to adolescence; various factors of intellectual, emotional, moral and social development; dynamics of child behavior; special problems. Prerequisite: Psy 100 or equivalent.
- Psy 324 Psychology of Adolescence** 4 credits
Physical, motivational, social, moral and intellectual aspects of the transition from childhood to adulthood; problems of puberty, socialization, emotional and intellectual maturity. Prerequisite: Psy 100 or equivalent.
- Psy 330 Physiological Psychology** 4 credits
The biological basis of behavior, cerebrospinal, autonomic and sensory systems; endocrine glands, relation of the brain to mental processes. Three lecture and three laboratory hours per week. Prerequisites: Psy 100 and human physiology.
- Psy 380 Measurement in Psychology** 4 credits
Principles of psychological measurement; nature, uses and limitations of psychological testing; reliability, validity. Prerequisite: Psy 201.
- Psy 381 Psychological Tests** 4 credits
A survey of commonly used tests; aim, content, administration, scoring and interpretation. Prerequisite: Psy 380.
- Psy 390 Computer Research Methods** 4 credits
The use of an electronic digital computer in behavioral science research. Laboratory session requires console technique and use of data processing equipment. Three lecture and three laboratory hours per week. Prerequisites: Psy 201 and 203 or equivalent.
- Psy 401 Experimental Laboratory Psychology I** 4 credits
- Psy 402 Experimental Laboratory Psychology II** 4 credits
(I) Nature and interpretation of experimentation, basic experimental design; psychophysical methods; sensory and perceptual processes. (II) Learning, student experience with animal conditioning. Three lecture and four laboratory hours per week. Prerequisites; Psy 100 and 201 for 401; 401 for 402.
- Psy 409 The Psychology of School Adjustment** 3 credits
Study of non-psychiatric personality dynamics from the mental health viewpoint and with particular reference to school adjustment.
- Psy 417 Group and Individual Differences** 4 credits
Differences between individuals and groups in ability, achievement and temperament, due to heredity, environment, physical traits, age, sex, race and nationality. Prerequisites: Psy 100, 201.
- Psy 425 Psychological Counseling** 4 credits
Principles and theory of counseling, with emphasis on assessment of the individual; use of psychological measurement and tests, especially in an educational or vocational setting. Prerequisites: Psy 381, and 310 or 315.
- Psy 426 Psychology of Occupations & Careers** 4 credits
Significance of work in our society with emphasis on published theories of occupational and career choice; psychodynamics of vocational adjustment is stressed. Guest lecturers from other academic disciplines as well as community resources provide additional perspective. Prerequisite: Psy 381 or equivalent.
- Psy 427 The Counseling Interview** 4 credits
Basic theory, principles and dynamics of the counselor-client relationship, and the counseling process. Prerequisite: Permission.
- Psy 460 Group Dynamics** 4 credits
Survey of theories and empirical studies of the dynamics of group behavior; emphasis on means of more effective and productive group performance. Prerequisite: Psy 310 or equivalent.
- Psy 465 Industrial Psychology** 4 credits
Advanced study of applied psychology in personnel work; job analysis; employment interviews, tests and counseling; employee-management relationships. Prerequisite: Psy 381 or equivalent.
- Psy 490 Symposium on Alcoholism** 2 credits
Psychological, educational, physiological, social, industrial, psychiatric, therapeutic and rehabilitation aspects of the problem of alcoholism. Prerequisite: Junior or senior standing in psychology, sociology, premedicine or nursing, or permission.
- Psy 492 Special Topics in Psychology** 2-4 credits
- Psy 493 Special Topics in Psychology** 2-4 credits
- Psy 494 Special Topics in Psychology** 2-4 credits
By arrangement. Prerequisite: Permission.
- Psy 496 Individual Research** 2-4 credits
- Psy 497 Individual Research** 2-4 credits
- Psy 498 Individual Research** 2-4 credits
By arrangement. Prerequisite: Permission.
- Psy 499 Seminar** 2-4 credits
Prerequisite: Permission.

Objectives

Sociology has the dual capacity of satisfying the need of students for a liberalizing discipline and of providing a sound basis for career preparation. Courses are designed to provide a systematic inquiry into the complex structure and dynamic function of modern society and to inquire into the social product of social living, culture. These courses further investigate the social and cultural influences affecting the development of the human personality.

Students who major in sociology may be broadly classified in three groups: those interested in pursuing sociology as a career for teaching or for research; those interested in pursuing sociology as a preparation for a career in social work; and those interested in sociology for its liberalizing character, for its value in "humane learning." Three programs terminating in the Bachelor of Arts degree are offered. Common to these is a series of required courses whose purpose is to give a proper grounding in the conceptual tools of analysis and to equip the student to appreciate the techniques by which an empirical body of knowledge is established.

Degree Offered

Bachelor of Arts

General Program Requirements

Students in sociology must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of science, 8 hours of mathematics, 12 hours of modern language and 12 hours of fine arts. A minor in economics, English, history, philosophy, political science or psychology is also required.

Departmental Requirements

BACHELOR OF ARTS—26 hours of basic courses which must include Sc 101, 102, 200, 380, 381 and Psy 201, 202 and the following:

Pre-professional program for sociologists—Sc 494, 497 and 26 hours of upper division sociology

courses (students in this program may not take Sc 375, 376, 377);

Pre-professional program for social workers—Sc 375, 376, 377 and 12 hours of upper division sociology courses with Sc 260 and 262 recommended;

Liberal arts sociology majors—24 hours of upper division sociology courses with approval of an adviser (students in this program may not take Sc 375, 376, 377).

Majors in all three programs will be required to take written and oral comprehensive examinations (Sc 496, no credit) in the field of their concentration within sociology. The student must register for the examination in the quarter in which he plans to take it.

Bachelor of Arts

Freshman year

English 110, 160 and core elective.....	12 hours
Philosophy 125, 150, 175.....	12 hours
Psychology 100, 201, 202.....	10 hours
Sociology 101, 102, 200.....	12 hours

Sophomore year

English core elective.....	4 hours
History 101, 102, 103.....	12 hours
Mathematics 170, 171.....	8 hours
Philosophy 225, 250.....	8 hours
Sociology 380, 381 and elective.....	12 hours
Theology 120.....	4 hours

Junior year

Minor.....	12 hours
Science.....	12 hours
Sociology major.....	12 hours
Theology 220, 320, 420.....	12 hours

Senior year

Fine Arts.....	12 hours
Language.....	12 hours
Minor.....	4 hours
Sociology 496 and electives.....	8 hours
Elective.....	2 hours

Total.....180 hours

Sociology Courses

- Sc 101 Fundamentals of Sociology I 4 credits**
Examination of the nature of science as it applies to human social relations; analysis of the patterns of human relations in the formation of groups, the development of culture and the impact of these in the formation of the human person; investigation of the ways in which interaction patterns emerge, become normative and result in integrated social structures.
- Sc 102 Fundamentals of Sociology II 4 credits**
Analysis of demographic and ecological principles as a basis for consideration of the several major institutional structures in human society such as religious, economic, educational, political and familial;

social change and deviant behavior. Prerequisite: Sc 101.

- Sc 200 Perspectives in Social Psychology 4 credits**
Consideration of theories and methods in contemporary approaches attempting explanation of the behavior of individuals in social situations. Prerequisites: Sc 102, Psy 100.

- Sc 256 Criminology 4 credits**
Theoretical overview of the conceptualizations of human behavior as criminal behavior and sociological analysis of criminal interactions, their systemic structures and functions. Prerequisite: Upper division standing.

- Sc 257 Juvenile Delinquency 4 credits**
Analysis of deviations and delinquencies of juveniles as distinct from those of adult offenders and sociological explanations of these behaviors within contemporary conceptual models. Prerequisite: Upper division standing.
- Sc 258 Correctional Theory and Practice 4 credits**
Theoretical discussion of correction as it is relevant to criminal behaviors and review of correctional treatments, institutions and programs. Prerequisites: Upper division standing and Sc 256 or 257.
- Sc 260 Sociology of Family 4 credits**
Explanation of family as a social system with structure and function; differential analysis of the family system as a group and as an institution; utilization of modern sociological frames of reference to interpret the position of the American family in an era of change. Prerequisite: Upper division standing.
- Sc 262 Socialization 4 credits**
Sociological analysis of the process by which one is inducted into his socio-cultural system and a review of the effectiveness of the process in American society. Prerequisite: Upper division standing.
- Sc 266 Interracial and Inter-Ethnic Relations 4 credits**
Concept of race and ethnic group; analysis of the factors in interracial and interethnic tensions; examination of the programs advocated for reducing tension and producing solidarity. Prerequisite: Upper division standing.
- Sc 280 The Urban Community 4 credits**
A study of urban community structures and institutions; historic city types; the process of urbanization; world cities; aspects of American urban communities. Prerequisite: Upper division standing.
- Sc 340 Advanced Social Psychology 4 credits**
Analytical explorations with specific socio-psychological conceptual models and tests of propositions derived from these models. Prerequisite: Upper division standing.
- Sc 363 Population 4 credits**
Analysis of population trends, problems and policies. Prerequisite: Upper division standing.
- Sc 375 Introduction to Social Work 4 credits**
The historical development, structure and function of social welfare services and institutions with emphasis upon the philosophy and methods utilized by professional social work in meeting human needs. Prerequisite: Upper division standing.
- Sc 376 Factors of Interviewing 4 credits**
The interview as one of the major methods of helping people; study of factors of knowledge and method in proficient interviewing to provide a basis for future development. Prerequisite: Sc 375 or permission.
- Sc 377 Supervised Field Experience 4 credits**
Direct observation and academic study in a selected social welfare agency with stress placed upon the agency's clientele, its services and its function in the community. Prerequisites: Sc 375 and 376.
- Sc 380 Methods of Sociological Research I 4 credits**
Logical structure and general procedure of science; analysis of specific techniques of data-gathering applied in sociology; observation, questionnaire, interview and case-study; problems of measurement, including qualitative and quantitative techniques such as scaling; problem of data-analysis, including tests of hypotheses through statistical techniques. Prerequisites: Upper division standing, Psy 201 and 202.
- Sc 381 Methods of Sociological Research II 4 credits**
Application of methods learned in Sc 380 to the design and execution of a research project by the student. Prerequisite: Sc 380.
- Sc 400 Sociology of Religion 4 credits**
Investigation of the religious institutions in society in terms of their structure, function and change. Prerequisite: Upper division standing.
- Sc 410 Social Stratification 4 credits**
A study of social differentiation with emphasis upon institutionalized aspects of power, privilege and prestige. Generalizations drawn from available studies of status, rank, mobility and social classes. Prerequisite: Upper division standing.
- Sc 420 Mass Communication 4 credits**
Consideration of message-formation and message-dissemination on the societal level with reference to social structures, social power and social change. Prerequisite: Upper division standing.
- Sc 430 Social Change 4 credits**
Critical review of attempts to explain transitions within a specific social system and large scale transitions from one societal form to another; discussion of concepts which may relate the two types of change in one general theory of social change. Prerequisite: Upper division standing.
- Sc 457 Institute or Workshop 4 credits**
Special topics of current relevance in the nation or local community treated from a sociological perspective as a community service. Prerequisite: Upper division standing.
- Sc 467 Educational Sociology 4 credits**
Sociological analysis of education as a social process expedited through specific educative agencies and media which vary across cultures. Prerequisite: Upper division standing.
- Sc 480 Special Topics in Sociology 1-4 credits**
Sc 481 Special Topics in Sociology 1-4 credits
Sc 482 Special Topics in Sociology 1-4 credits
Prerequisite: Upper division standing.
- Sc 491 Sociology of Work 4 credits**
A study of the industrial enterprise as a social system and the social-psychological aspects of the individual's position in the industrial organization. Prerequisite: Upper division standing.
- Sc 494 History of Sociological Thought 4 credits**
An historical survey and evaluation of selected leading figures in the rise and development of sociology as an independent discipline. Sociological thought is traced from Comte, through the social Darwinists and the analytical sociologists of Europe, to major contemporary thinkers. Prerequisite: Upper division standing.
- Sc 496 Comprehensive Examination No credits**
Each graduating senior will be required to pass a written and oral examination in the quarter in which he qualifies for graduation.
- Sc 497 Individual Research 2-4 credits**
Sc 498 Directed Reading in Sociology I 1-4 credits
Sc 499 Directed Reading in Sociology II 1-4 credits
Sociological reading at advanced undergraduate level. Prerequisite: Upper division standing.

Objectives

The study of speech and drama seeks to instill in the student a workable understanding and respect for these specific arts as well as their relationship to allied arts. In this process the student will solidify understanding by means of various practical experiences leading to a truly liberal and practical education.

Degree Offered

Bachelor of Arts in Humanities

General Program Requirements

Students in speech and drama must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of psychology for the social science, 12 hours of science or 8 hours of mathematics and 12 hours of fine arts.

Departmental Requirements

UNDERGRADUATE AREA MAJOR (speech)—52 hours of speech which must include Sph 100, 110, 201, 202, 204, 261, 304, 310, 311, 350, 401, 404, 499 and 4 hours of speech electives; 4 hours in Sph 270, 455, or 470 are also required.

UNDERGRADUATE AREA MAJOR (drama)—54 hours of speech which must include Sph 151, 202, 260, 261, 262, 263, 265, 350, 361, 450, 451, 460, 461, 462, 499 and En 335 and 336. The student must also participate in one major production a year and pass a senior comprehensive examination.

UNDERGRADUATE MINOR (speech)—22 hours of speech which must include Sph 202, 204, 310, 400, 411 and 2 hours in Sph 455 or 470.

UNDERGRADUATE MINOR (drama)—20 hours of speech which must include Sph 260, 261, 262, 450, 451, the fine arts sequence from the core curriculum, and participation in two major productions.

**Bachelor of Arts in Humanities
Speech****Freshman year**

English 110, 150, 160 or 170..... 12 hours
Fine Arts sequence..... 12 hours

Sph 100 Creative Speech**4 credits**

Students are encouraged to use ideas from their storehouse of knowledge in order to create new insights and concepts. Theory is learned through performance in a creative, communication setting.

**Sph 101 Speech Fundamentals for
Foreign Students****4 credits**

Course content is basically the same as Sph 100 but with special attention given to phonetic problems of the English language. Offered alternate years.

SpeechJames V. Connors, S.J., M.A., *Head*

History 101, 102, 103..... 12 hours
Philosophy 125, 150, 175..... 12 hours

Sophomore year

Philosophy 225, 250..... 8 hours
Psychology 100, 310 and elective..... 12 hours
Science or mathematics and elective..... 12 hours
Speech 100, 110, 202..... 12 hours
Theology 120..... 4 hours

Junior year

English core elective..... 4 hours
Minor..... 8 hours
Speech 201, 204, 261, 304, 310, 350, 401..... 24 hours
Theology 220, 320, 420..... 12 hours

Senior year

Language 101, 102, 103..... 12 hours
Minor..... 8 hours
Speech 311, 404, 499 and electives..... 16 hours

Total..... 180 hours

**Bachelor of Arts in Humanities
Drama****Freshman year**

English 110, 160, 170..... 12 hours
Fine Arts sequence..... 12 hours
History 101, 102, 103..... 12 hours
Philosophy 125, 250, 175..... 12 hours

Sophomore year

Philosophy 225, 250..... 8 hours
Psychology 100, 310..... 8 hours
Science or mathematics and elective..... 12 hours
Speech 151, 261, 262, 263..... 16 hours
Theology 120..... 4 hours

Junior year

English 335, 336..... 8 hours
Minor..... 8 hours
Psychology elective..... 4 hours
Speech 202, 260, 265, 350, 361..... 16 hours
Theology 220, 320, 420..... 12 hours

Senior year

Minor..... 12 hours
Speech 450, 451, 460, 461, 462, 499..... 22 hours
Elective..... 2 hours

Total..... 180 hours

Speech Courses**Sph 110 Speech Organization****4 credits**

Emphasis on theory and organization of material.
Prerequisite: Sph 100.

Sph 150 Introduction to the Theatre**4 credits**

An overview of drama as produced; survey of theatre history and the discussion of the role of the playwright, director and actor in relation to the technical aspects of play production.

Sph 151 Speech for the Theatre**4 credits**

Speech used in the formal theatre. Theory, practice and technique.

- Sph 201 Voice Improvement** 2 credits
(200) Study and practice dealing with the basics of vocal production and diction in speaking and reading; group and individual projects making use of laboratory and recording facilities.
- Sph 202 Introduction to Oral Interpretation** 4 credits
(205) The basic notions of interpreting the written word; practice in reading and memorization of prose, poetry, and drama.
- Sph 204 Methods of Debate** 4 credits
(120) Introduction to debate with study and practice of the more important forms.
- Sph 260 Stagecraft** 4 credits
(175) Lecture-discussion of the technical aspects of dramatic productions accompanied by a laboratory period in the actual building of various types of stage equipment and properties.
- Sph 261 Pantomime** 4 credits
(165) Study and practice of this form of expression as a living art and as a basic part of all acting.
- Sph 262 Acting** 4 credits
Sph 263 Acting 4 credits
(165) Introduction to the art of acting and the relationship between the actor and director. 262—principles and practice in basic acting details and character development. 263—study and practice in modern realistic acting. Prerequisites: Sph 261, 262 for 263.
- Sph 265 Stage Lighting** 2 credits
(350) Theory and application of light to all types of productions. Prerequisite: Sph 260.
- Sph 270 Forensic Workshop** 1 credit
Participation in tournaments and practice debates on and off campus. Approval of instructor is required before credit may be given. Maximum—six credits.
- Sph 304 The Logic of Argument** 4 credits
A study of the principles of logic as applied to reasoning and argument in oral and written discourse.
- Sph 310 Public Speaking** 4 credits
(297) Organization of material; study and practice of oral styles and delivery. Emphasis on the performance of various styles and types by the student. Prerequisite: Sph 100 or permission.
- Sph 311 Parliamentary Procedure** 2 credits
Methods of organizing and conducting public meetings, based on Robert's Rules of Order.
- Sph 320 Speech for the Classroom Teacher** 4 credits
(100) Emphasis is placed on the prospective teacher's own competency as a speaker and the understanding and practice of speech activities useful in teaching; methods of utilizing public speaking, discussion, story telling, oral reading, dramatics, and speech correction procedures in the teaching situation are presented.
- Sph 350 Oral Interpretation of Shakespeare** 2 credits
(305) Special interpretation problems with the works of Shakespeare; individual and ensemble reading leading to an individual lecture-recital. Prerequisite: Sph 202 or permission.
- Sph 360 Rehearsal and Performance Technique** 1 credit
(155) Given to performers and crew chief members of official University productions. Approval of the department head is required before credit may be given and no more than two credits may be received in any four quarter period. Maximum—six credits.
- Sph 361 Advanced Acting** 4 credits
(250) Theory and practice in period style; Shakespearean tragedy, high and low comedy. Prerequisite: Sph 263.
- Sph 400 Anatomy of Speech and Hearing** 4 credits
A detailed study of the structure and functions of the speech and hearing organs.
- Sph 401 Phonetics** 4 credits
The study and practice of speech sound with applications to the understanding and speaking of languages.
- Sph 404 Persuasion** 4 credits
Theory and practice in persuasive speaking. Practice in influencing audience reaction. Prerequisite: Sph 100 or permission.
- Sph 411 Introduction to Speech Correction** 4 credits
An introductory course dealing with the fundamentals of corrective work in speech aiming to develop a basic understanding of corrective methods.
- Sph 450 Theatre History I** 4 credits
Sph 451 Theatre History II 4 credits
(295) Great playwrights and representative plays correlated with the history of the theatre. I, the Golden Age of Greece to the Elizabethan era; II, Restoration to the present.
- Sph 455 Readers Theatre Workshop** 1 credit
Participation in programs and recitals on and off campus; material is read and taken from literature and drama, both prose and poetry. Prerequisite: Permission of instructor. Maximum—six credits.
- Sph 460 Directing** 4 credits
(260) Theory and practice in directing various styles of drama; practical application. Prerequisite; Sph 361.
- Sph 461 Scene Design** 4 credits
(360) Theory and creation of design for stage productions of all types. Classes to be accompanied by laboratory work in scene painting. Prerequisite: Sph 260.
- Sph 462 Costume** 4 credits
(275) Discussion of costume history; design and execution of all styles of stage costumes. Laboratory work required.
- Sph 470 Forensic Workshop** 1 credit
Participation in tournaments and practice debate on and off campus. Approval of instructor is required before credit may be given. Maximum—six credits.
- Sph 497 Special Topics—Speech** 2-4 credits
Sph 498 Special Topics—Drama 2-4 credits
Prerequisite: Permission of department head.
- Sph 499 Undergraduate Research** 2-4 credits
Prerequisite: Permission of department head.

Objectives

Theology has the same fundamental purpose as the other disciplines in the University: intellectual training, the formation of a mature intellect. Within this general framework the department serves a two-fold purpose. It provides the theology sequence of the core curriculum and it offers a program of courses leading to a Bachelor of Arts in Humanities degree with theology as the area major. Both purposes are pursued by a dual method: first, by a historical-scriptural approach to the basic sources; and secondly, by a systematic treatment of the data thus obtained.

University Theology Requirements

Catholic students are required to complete 16 hours of theology as outlined in the core curriculum. Students who are not Catholic are required to complete one 4-credit course, Th 110, Sources of Judaeo-Christian Tradition and Culture. Catholic students transferring to Seattle University must complete these theology requirements:

- Transfer with senior standing (134 credits) 4 hours
- Transfer with junior standing (90 to 133 credits) 12 hours
- Transfer with less than 90 credits 16 hours

Degree Offered

Bachelor of Arts in Humanities

General Program Requirements

Students in theology must satisfy the core curriculum requirements of the University as given on page 24 of this bulletin and those of the College of Arts and Sciences on page 32. Required sequences are 12 hours of social science, 12 hours of science or 8 hours of mathematics and 12 hours of French or German.

- Th 107 Fundamentals of Catholic Theology 0 credit**
Survey of the essential truths, laws and worship of the Catholic Church.
- Th 110 Sources of Judaeo-Christian Tradition and Culture 4 credits**
A study of the main books of the Old Testament and the Gospels for students who are not Catholic. Historical background, literary analysis and cultural appreciation.
- Th 120 Judaeo-Christian Origins 4 credits (120) (130)**
The historical, literary and theological study of the principal books of the Old Testament and the four gospels.
- Th 220 Ancient Christian Writers 4 credits (220) (230)**
The Acts; Epistles of St. Paul; Epistles of St. James; St. Jude, St. Peter, St. John; The Apocalypse. Prerequisite: Th 120.

Departmental Requirements

UNDERGRADUATE AREA MAJOR—44 hours of theology which must include Th 120, 220, 320, and 420, and 355, 356, 357, 358 plus 12 hours of theology selected from courses numbered 300-499; 12 hours of either Latin or Greek and 12 hours of modern language are also required. Recommended minors are history, languages, philosophy, psychology or sociology.

UNDERGRADUATE MINOR—36 hours of theology which must include Th 120, 220, 320 and 420, 355, 356, 357 and two theology courses selected from courses numbered from 300 to 499.

Bachelor of Arts in Humanities

Freshman year

- English 110, 160 and core elective 12 hours
- History 101, 102, 103 12 hours
- Philosophy 125, 150, 175 12 hours
- Social Science 8 hours
- Theology 120 4 hours

Sophomore year

- English core elective 4 hours
- Latin or Greek 101, 102, 103 12 hours
- Philosophy 225, 250 8 hours
- Science or mathematics and elective 12 hours
- Theology 220, 320, 420 12 hours

Junior year

- Minor or electives 12 hours
- French or German 101, 102, 103 12 hours
- Social Science 4 hours
- Theology 355, 356, 357, 358 and elective 20 hours

Senior year

- Fine Arts or electives 12 hours
- Minor or electives 8 hours
- Theology electives 16 hours

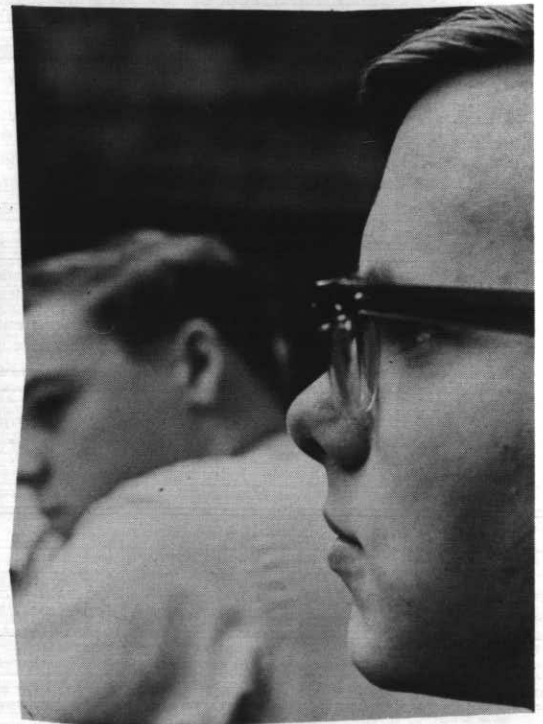
Total 180 hours

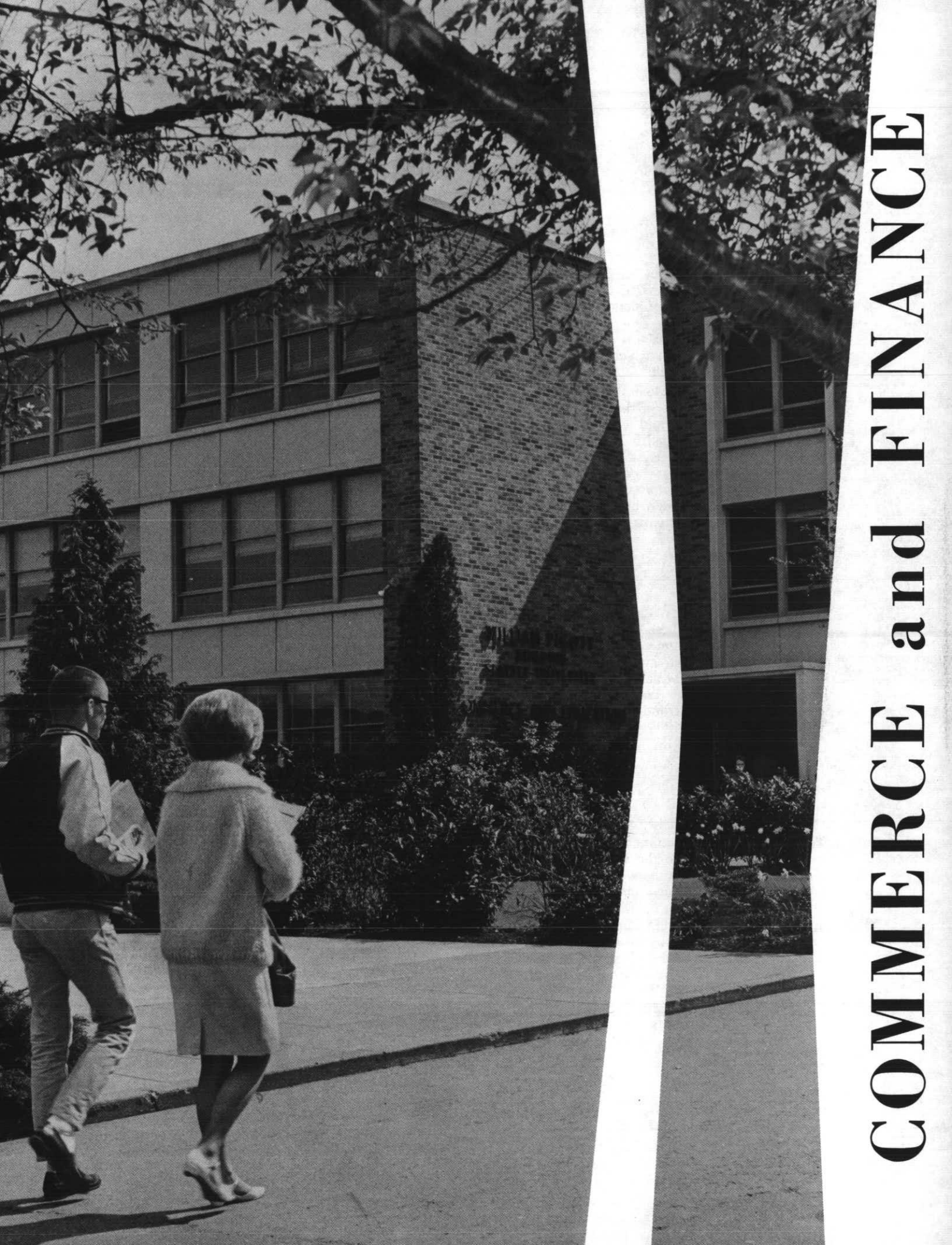
Theology Courses

- Th 233 Marriage Guidance for Men 2-4 credits**
- Th 234 Marriage Guidance for Women 2-4 credits**
The sacrament of marriage, preparation for marriage, rights and duties of husband and wife; problems in married life. Elective only.
- Th 284 Kerygma and Catechesis: Synthesis 4 credits**
Dogmatic and scriptural foundations for catechists. Study of the dogmatic foundation for the teaching of the Apostles Creed and the Sacraments; cases and problems relating to the commandments of God and the Church. Elective only.
- Th 320 Christian Wisdom 4 credits (320) (330)**
The meaning of faith; historical and dogmatic study of the Trinity, the elevation and fall of man, the Incarnation, Redemption, the divine life of Grace; place and function of Mary in the Redemptive plan. Prerequisite: Th 220.

- Th 355 Early Christian Theology** 4 credits
Seminar: A study of the development of doctrine in the early Greek and Latin Fathers of the Church. The Apostolic Fathers, the Didache, St. Justin, St. Irenaeus, Tertullian, St. Cyprian, St. Athanasius, Origen, St. Basil, St. Gregory Nazianzen, St. Gregory of Nyssa. Prerequisite: Th 220.
- Th 356 Christian Writers of the Fourth Century** 4 credits
Seminar: a study of the development of Christian doctrine in the writings of St. Cyril of Alexandria, St. Leo the Great, St. Vincent of Lerins, St. Ambrose, St. Augustine, Boethius. Prerequisite: Th 355.
- Th 357 Scholastic Theology** 4 credits
Seminar: the origin and main lines of scholastic theology; its spirit and aim formulated by St. Anselm, Abelard, St. Bernard, Alexander of Hales, St. Albert, St. Bonaventure, Duns Scotus, William of Ockham, St. Thomas Aquinas. Prerequisite: Th 356.
- Th 358 Reformation Theology** 4 credits
The theological disputes of the Reformation on justification by faith alone; total depravity, irresistible grace; controversies among Catholics, Lutherans, Calvinists and Jansenists; the Enlightenment and Vatican Council I. Prerequisite: Th 357.
- Th 359 Contemporary Theology and Ecumenism** 4 credits
Vatican Council II and modern theologians such as Suenens, Schillebeeck, Rahner, Danielou, Kung, Congar, Bea, Murray and Teilhard de Chardin. Prerequisite: Th 358.
- Th 391 Church History I** 4 credits
First ten centuries A.D. The Judaic, Hellenic and Roman elements in the *ecclesia* of the classical Mediterranean world; the Christian response to the challenges of that world; the Constantinian settlement; the separation between the Latin West and the Greek East; the rise of Islam; the formation of Christian Europe. Prerequisites: Th 220 and Hs 103.
- Th 392 Church History II** 4 credits
11th to 18th centuries. Gregorian reform in the West; Schism and crusade in the East; elaboration of the papal primacy and the "historic episcopacy"; scholastic theology, canon law, and popular medieval religion; troubles of the late Middle Ages and the crisis of the 16th century; the Reformation, Protestant and Catholic; the Tridentine Church, the absolute state and the new global world. Prerequisites: Th 360 and Hs 103.
- Th 393 Church History III** 4 credits
19th and 20th centuries; the Church of the *ancien regime*; the revolution and the dilemma of the Christian response; accommodation or attack; the Catholic Church outside Europe, in the New World and in the ancient world of the great oriental religions; Vatican I, the modern papacy and the crisis of the World Wars; contemporary ecumenical and missionary movements in Christianity; Vatican II and *aggiornamento* in the Catholic Church. Prerequisites: Th 361 and Hs 103.
- Th 420 Sacramental Life** 4 credits
(420, 430) Doctrinal, moral and liturgical aspects of Baptism, Confirmation, the Eucharist (both as sacrifice and sacrament), Marriage, Penance, Extreme Unction, the Four Last Things. Prerequisite: Th 320.
- Th 435 Liturgical Theology** 4 credits
Theological foundations, historical development; the liturgical movement as it applies to the faithful in the family and parish.
- Th 440 The Theology of John Henry Newman** 4 credits
A study of Cardinal Newman's theological thought, especially his *Essay on the Development of Christian Doctrine*.
- Th 444 Theology of the Apostolate** 4 credits
The place, function, rights and obligations of the layman in the Church; the lay apostolate and mission of the layman in home, parish, school, professional, social and economic life.
- Th 474 Ascetical and Mystical Theology** 4 credits
A study of Christian perfection, its nature and obligations; the general and particular means of striving for Christian perfection; the three ways: purgative, illuminative and unitive.
- Th 475 Contemporary Moral Problems** 4 credits
Principles of moral theology and their application to modern problems, both individual and social.
- Th 478 Survey of Jewish History** 4 credits
A general survey of Jewish history up to the contemporary period with special emphasis on the Second Commonwealth and Talmudic Period; Christian beginnings contemporary with the end of the Second Commonwealth period and with the Talmudic period.
- Th 479 Survey of Jewish Theology and Halachah (Jewish Canon Law)** 4 credits
A study of monotheism versus paganism, sacrifice, reward and punishment, sabbath and holidays, dietary laws, morals and ethics, traced from the biblical period through the Talmudic period to the contemporary period; their relationship to Christian thought and practice; analysis of the Judaeo-Christian heritage, emphasizing theological thought and Canon Law.
- Th 480 Seminar on Contemporary Judaeo-Christian Thought** 4 credits
Discussion and research on major contemporary issues which reflect the basic agreements and disagreements of the Judaeo and Christian religions and cultures in present-day life.
- Th 481 Psalms and the Community of Israel** 4 credits
(495) Analysis and dating of key Psalms according to literary types; influence of Israelite cultic life upon the composition of the psalms; Psalms as a reflection of the deepening religious life of the Old Testament.
- Th 482 Ancient Near Eastern Religions** 4 credits
Seminar. Study of selected religious texts from ancient Egypt, Mesopotamia and Canaan; their bearing upon the ideas and institutions of ancient Israel.
- Th 484 The Prophets and Wisdom Writings** 4 credits
(496) A study of the major prophets and the twelve minor prophets; examination of the texts and historical circumstances of these prophecies; Book of Job; Ecclesiastes; Wisdom.

- Th 486 Archaeology of Palestine** 4 credits
Background and history of Biblical archaeology; pottery types characteristic of the various archaeological periods from the Chalcolithic to the Byzantine.
- Th 487 Historical Geography of Palestine** 4 credits
General outline of the geography of Palestine; influence of geography on the history and religion of Israel.
- Th 488 The Dead Sea Scrolls** 4 credits
(497) A study of the biblical and non-biblical material of the 1948 Qumran and subsequent discoveries; the Essene community, its history and significance.
- Th 489 Comparative Religion** 4 credits
A study of the major non-Christian religions; their history, beliefs, institutions, worship; comparison with Christianity.
- Th 490 Eastern Christianity** 4 credits
A study of those Christian churches in the East which have a rite other than Latin; their origins, history, doctrine, liturgy and present practice.
- Th 491 Modern Protestant Theology** 4 credits
(498) The theological position, history and trends of the major Protestant denominations; the principal leaders of modern Protestant thought and their tenets, Bultman, Tillich, Neibuhr.
- Th 492 Special Topics in Scripture** 4 credits
Th 493 Special Topics in Theology 4 credits
Th 494 Readings and Research 4 credits





COMMERCE and FINANCE

School of Commerce and Finance

Paul A. Volpe, Ph.D., Dean

Objectives

A collegiate education for business should prepare students for business careers, not simply for job-finding. This kind of scientific business education—comparable to university studies in other professional fields—will not replace practical business experience, but will provide a sound base upon which positions of managerial responsibility can be built.

The program of the School of Commerce and Finance implements the purpose of the University by providing professional guidance and instruction for developing those qualities which lead to competent leadership and service in the various fields of economic endeavor. It seeks to prepare graduates capable of assuming responsible roles in the economic development of the Pacific Northwest and the nation both in the areas of private enterprise and government.

Accreditation

American Association of Collegiate Schools of Business

Organization

The School of Commerce and Finance offers programs in six major fields. These are accounting, finance and banking, general commerce, industrial relations and personnel management, marketing, and office management. The School is formally organized within the University structure but is under the direction of its own dean and is a distinct and independent degree recommending unit responsible directly to the Academic Vice President.

The work of the accountant is firmly established as an indispensable service to the world of business. Professionally trained accountants serve in many areas of private business and government, such as cost determination, accounting for operation, budgetary planning, and auditing. By passing state examinations the accountant may pursue a useful career as a certified public accountant.

Bachelor of Commercial Science

Freshman year	
Commerce and Finance 230	4 hours
English 110, 160 and core elective	12 hours
History 101, 102, 103	12 hours
Mathematics	8 hours
Philosophy 125, 150, 175	12 hours

Sophomore year

Commerce and Finance 201, 202, 215, 231, 250, 260, 275, 310	32 hours
Philosophy 225, 250	8 hours
Political Science 160	4 hours
Theology 120	4 hours

Admission Requirements

Admission to the School of Commerce and Finance is granted to applicants who have specified an interest in business. Applicants must meet the University's requirements for regular admission as described in that section of this bulletin.

Degree Offered

Bachelor of Commercial Science

Curriculum

The program of required study includes three primary areas: the humanities, the commerce core and an area of specialization. All students in the school undertake studies which include philosophy, English, history, political science and mathematics. The commerce core includes courses in economics, finance, legal environment, accounting, marketing, statistics and management. Specialization in one of the six major fields is required.

General Program Requirements

Students in the School of Commerce and Finance must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those of the School which follow. Required sequences are 12 hours of social science and 8 hours of mathematics, except in office management where 12 hours of science may replace mathematics. A minimum of 180 credit hours is required for the Bachelor of Commercial Science degree.

Accounting

Theodore J. Ross, M.B.A., C.P.A., Adviser

Junior year

Commerce and Finance 311, 318, 319, 320, 321, 330, 455, 470	32 hours
Theology 220, 320, 420	12 hours
Elective	4 hours

Senior year

Commerce and Finance 450, 486, 497	12 hours
Psychology 100	4 hours
Sociology 101	4 hours
Electives	16 hours
Total	180 hours

Public Accounting — 13 Quarters

Students who wish to prepare for the CPA examination should complete the following courses in addition to the graduation requirements for the accounting major: CF 331, 411, 485, 487, 488, 489.

Students completing the above additional courses will qualify for a major in public accounting.

Total additional credit hours.....21

Finance is concerned with the management of the funds of business enterprises, government and banking institutions. It provides a special preparation for careers in commercial savings and investment banking. Positions of financial responsibility include those of treasurer, controller, credit manager, investment analyst and general financial manager of a business enterprise.

Bachelor of Commercial Science

Freshman year

Commerce and Finance 230.....	4 hours
English 110, 160 and core elective.....	12 hours
History 101, 102, 103.....	12 hours
Mathematics.....	8 hours
Philosophy 125, 150, 175.....	12 hours

The general commerce major provides a broad survey of the entire area of commerce and finance. It is designed for students who intend to operate their own business enterprise, those who expect to attain greater specialization through on-the-job programs, or those who plan to continue to graduate studies.

Bachelor of Commercial Science

Freshman year

Commerce and Finance 250.....	4 hours
English 110, 160 and core elective.....	12 hours
History 101, 102, 103.....	12 hours
Mathematics.....	8 hours
Philosophy 125, 150, 175.....	12 hours

Sophomore year

Commerce and Finance 201, 202, 215, 230, 231, 260, 275, 305, 311.....	36 hours
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Industrial relations and personnel management is concerned with the management of personnel in a business or public enterprise. It includes the relations of an enterprise with labor unions and the internal operation and structure of unions. It provides students with the opportunity of pursuing careers in the personnel departments of business and government or in government agencies regulating industrial relations or of choosing careers in the administrative levels of labor unions.

Bachelor of Commercial Science

Freshman year

Commerce and Finance 230.....	4 hours
English 110, 160 and core elective.....	12 hours
History 101, 102, 103.....	12 hours
Mathematics.....	8 hours
Philosophy 125, 150, 175.....	12 hours

Sophomore year

Commerce and Finance 201, 202, 215, 231, 250, 260, 305.....	28 hours
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Finance and Banking

Khalil Dibee, Ph.D., Adviser

Sophomore year

Commerce and Finance 201, 202, 215, 231, 250, 260, 275, 310.....	32 hours
Philosophy 225, 250.....	8 hours
Political Science 160.....	4 hours
Theology 120.....	4 hours

Junior year

Commerce and Finance 311, 318 or 330, 319, 320, 321, 325, 450, 455.....	32 hours
Theology 220, 320, 420.....	12 hours
Elective.....	4 hours

Senior year

Commerce and Finance 497 and electives.....	12 hours
Psychology 100.....	4 hours
Sociology 101.....	4 hours
Electives.....	16 hours

Total.....180 hours

General Commerce

Arthur C. Earl, S.J., M.A., Adviser

Philosophy 225, 250.....	8 hours
Theology 120.....	4 hours

Junior year

Commerce and Finance 310, 320, 325, 450.....	16 hours
English core elective.....	4 hours
Political Science 160.....	4 hours
Theology 220, 320, 420.....	12 hours
Electives.....	12 hours

Senior year

Commerce and Finance 455, 460, 470, 475, 497.....	20 hours
Political Science 349.....	4 hours
Psychology 100.....	4 hours
Sociology 101.....	4 hours
Electives.....	4 hours

Total.....180 hours

Industrial Relations and Personnel Management

John L. Corrigan, S.J., Ph.D., Adviser

Philosophy 225, 250.....	8 hours
Political Science 160.....	4 hours
Theology 120.....	4 hours
Elective.....	4 hours

Junior year

Commerce and Finance 275, 295, 310, 311, 320, 325, 450.....	28 hours
Political Science 349.....	4 hours
Theology 220, 320, 420.....	12 hours
Elective.....	4 hours

Senior year

Commerce and Finance 455, 460, 470, 475, 497.....	20 hours
Psychology 100.....	4 hours
Sociology 101.....	4 hours
Speech 100.....	4 hours
Elective.....	4 hours

Total.....180 hours

Marketing is the study of the flow of goods and services from production to distribution to the ultimate consumer. Careers lead to responsibility in institutions involved in retailing, wholesaling, related advertising agencies and firms engaged in distribution generally. Sales management, merchandising, purchasing and store management provide functional areas.

Bachelor of Commercial Science

Freshman year

Commerce and Finance 215	4 hours
English 110, 160 and core elective	12 hours
History 101, 102, 103	12 hours
Mathematics	8 hours
Philosophy 125, 150, 175	12 hours

Sophomore year

Commerce and Finance 201, 202, 230, 231, 250, 260, 305	28 hours
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Office management offers the opportunity of combining business knowledge and understanding with basic office skills. It prepares students for responsible positions as office managers, executive secretaries, or administrative assistants.

Bachelor of Commercial Science

Freshman year

English 110, 160 and core elective	12 hours
History 101, 102, 103	12 hours
Philosophy 125, 150, 175	12 hours
Science or mathematics and elective	12 hours

Sophomore year

Commerce and Finance 201, 202, 215, 230, 231, 250	24 hours
Philosophy 225, 250	8 hours

CF 201 Principles of Economics I	4 credits
CF 202 Principles of Economics II	4 credits
(101) (I) Fundamentals of economics; an analysis of the economic system in its historical and socio-political setting; framework of American economy; theory of value. (II) major component areas of economic society; international trade, government finance, industrial relations, risk and insurance. Prerequisite: CF 201 for 202.	
(102)	
CF 215 Introduction to Marketing	4 credits
(315) The place of marketing in the economy, structure of the market, demand, price, cost and competition. Prerequisite: CF 202.	
CF 216 Beginning Gregg Shorthand	4 credits
(116) Fundamentals of Gregg shorthand with emphasis on reading and writing fluency.	
CF 217 Intermediate Gregg Shorthand	4 credits
(117) Development of broader vocabulary; introduction to transcription, stressing punctuation, spelling and	

Marketing

Woodrow R. Clevinger, Ph.D., Adviser

Philosophy 225, 250	8 hours
Political Science 160	4 hours
Theology 120	4 hours
Elective	4 hours

Junior year

Commerce and Finance 275, 310, 311, 320, 325, 327, 363	28 hours
English core elective	4 hours
Theology 220, 320, 420	12 hours
Elective	4 hours

Senior year

Commerce and Finance 423, 430, 475, 497 and elective	20 hours
Psychology 100	4 hours
Sociology 101	4 hours
Speech 100	4 hours
Elective	4 hours

Total.....180 hours

Office Management

J. Allen Suver, M.Ed., Adviser

Political Science 160	4 hours
Sociology 101	4 hours
Theology 120	4 hours
Elective	4 hours

Junior year

Commerce and Finance 216, 217, 218, 220, 221, 222, 260, 310, 314	30 hours
Theology 220, 320, 420	12 hours
Elective	4 hours

Senior year

Commerce and Finance 219, 275, 305, 311, 316, 317	22 hours
Psychology 100	4 hours
Electives	12 hours

Total.....180 hours

Commerce and Finance Courses

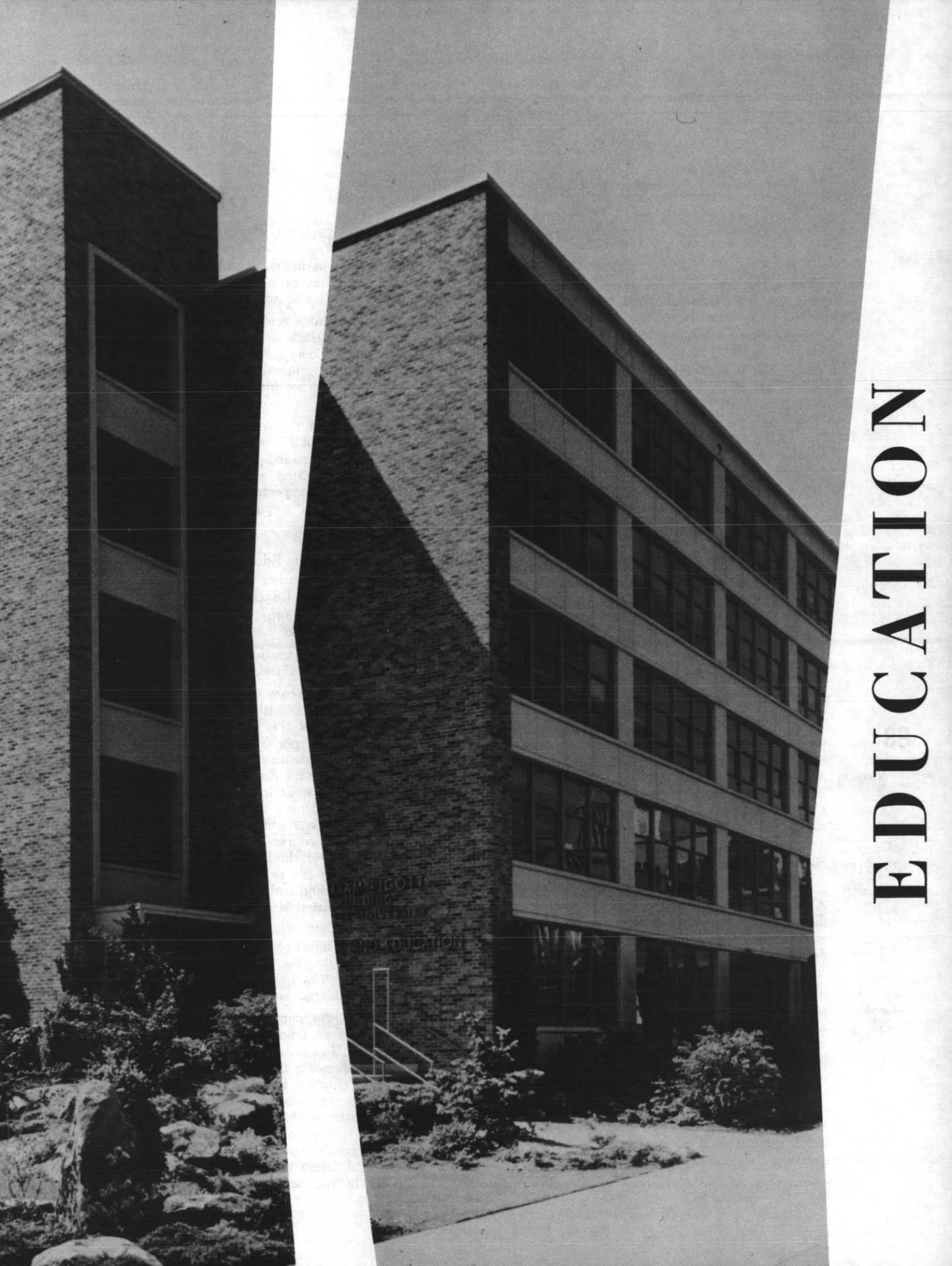
letter arrangement. Prerequisite: CF 216 or equivalent.

CF 218 Advanced Shorthand	4 credits
(118) Advanced dictation emphasizing development of fluent writing techniques; continued development of vocabulary, special business terms and transcription skill. Prerequisite: Permission of instructor.	
CF 219 Transcription of Gregg Shorthand	4 credits
(119) Development of transcription skill through fusion of shorthand, typing and English skills; emphasis on production of mailable business letters. Prerequisite: Permission of instructor.	
CF 220 Beginning Typewriting	2 credits
(120) Presentation of keyboard stressing proper techniques; typing for personal use, including manuscript typing, letter writing and composition at the machine.	

- CF 221 Intermediate Typewriting 2 credits**
(121) Comprehensive review of the keyboard stressing the mastery of numbers and special symbols; intensive speed development; vocational-use typewriting, including business letters, statistical tabulation, rough drafts and manuscript writing. Prerequisite: CF 220 or equivalent.
- CF 222 Advanced Typewriting 2 credits**
(122) High-speed drills; training in the use of short-cuts; production typing, letter writing; manifold work; legal typing. Prerequisite: CF 221 or equivalent.
- CF 230 Principles of Accounting I 4 credits**
(130) Introduction to the entire cycle of bookkeeping procedure; accounts and financial statements of a single proprietorship with emphasis on the merchandising business.
- CF 231 Principles of Accounting II 4 credits**
(131) Accounting principles and procedures applied to partnerships and corporations. Prerequisite: CF 230.
- CF 250 Business Statistics 4 credits**
 Survey of commercial statistics; construction of tables and charts; use of statistical methods; averages; dispersion, sampling; index numbers; time series; correlation.
- CF 260 Money and Banking 4 credits**
 Analysis of the basic principles of money, credit and banking; structure, operation and control of central, commercial and savings banks; public and private banking institutions; monetary and credit policies. Prerequisite: CF 202.
- CF 275 Corporation and Business Finance 4 credits**
 Promotion, organization and financing various forms of business; comparison of corporation with other forms of business organizations; legal and social aspects of corporations. Prerequisite: CF 260.
- CF 295 Economics of Profit Sharing 4 credits**
 A survey of the philosophy, economics and law in the field of profit sharing; an analysis of the profit sharing plans in use by industry today.
- CF 301 Intermediate Price Theory 4 credits**
 Analysis of demand, supply, costs and market prices under competitive and monopolistic conditions in capitalistic society. Prerequisite: CF 260.
- CF 302 National Income Analysis 4 credits**
 Analysis of the determinants of the level of output, employment, income and allocation of resources of an economy. Prerequisite: CF 260.
- CF 305 Industrial Relations 4 credits**
 Survey of the economics and law of industrial relations; effects of industrial relations; effects of industrial changes on labor; hour and wage; employment and unemployment; trade unionism and labor legislation. Prerequisite: CF 202.
- CF 310 Principles of Management 4 credits**
 Development of modern management; basic factors in organization and operation; division of responsibility; line and staff organizations; executive leadership and management; business control and procedures; basic management problems. Prerequisites: CF 231, 260.
- CF 311 Law and Business 4 credits**
(110) A study of the nature, sources and development of law; the machinery of justice and the legal environment of business; emphasis on the contractual relationships of the business man and his firm. Prerequisite: CF 202.
- CF 314 Office Organization 4 credits**
(218) A study of the organizational structure of the modern business office; duties and responsibilities of managerial personnel; the work of the secretary, including analysis of the secretarial career, organization of secretarial work, procedures for preparing business reports, handling financial and legal responsibilities, supervision of clerical personnel, preparation and handling of correspondence. Prerequisite: CF 220.
- CF 316 Office Machines 2 credits**
(216) Laboratory instruction in the operation of manual and key-driven calculators; manual and electric rotary calculator; ten-day adding-listing machines.
- CF 317 Business Writing 4 credits**
(215) Study of written communications in business; practice in writing effective business letters; methods of gathering, evaluating and presenting data for business reports; training in dictation.
- CF 318 Intermediate Accounting I 4 credits**
 Financial statements; review of the accounting process; cash and temporary investments; receivables; inventories. Prerequisite: CF 231.
- CF 319 Intermediate Accounting II 4 credits**
 Current liabilities, investments in stocks and bonds; funds; plant and equipment, acquisition, retirement, depreciation and revaluation; intangibles; long-term debt. Prerequisite: CF 318.
- CF 320 Investment and Security Analysis 4 credits**
 Principles of investing and methods of security analysis; understanding of market; investment banking. Prerequisites: CF 231, 250, 275 or 319.
- CF 321 Intermediate Accounting III 4 credits**
 Stockholders' equity, corporation formation; earnings distribution and appropriations; statements from incomplete records; financial statement analysis; funds flow. Prerequisite: CF 319.
- CF 325 International Trade and Finance 4 credits**
 Foreign trade practice and theory; effects of international commissions, tariffs, economics and politics on U. S. trade; foreign exchange, transportation, marine insurance, exchange banking. Prerequisite: CF 202.
- CF 327 Market Communication (advertising) 4 credits**
 Communication function; meaning and use of mass media; how and why people react to communication; functions of advertising personnel.
- CF 330 Cost Accounting 4 credits**
 The determination of manufacturing costs under job order, process and joint cost systems, with an introduction to standard costs.
- CF 331 Auditing 4 credits**
 Purpose and scope of audits and examinations; principles and procedures of auditing. Practical application through an illustrative audit case. Prerequisite: CF 319.

- CF 335 American Economic History** 4 credits
Survey of the economic growth of the United States in the light of the political and social trends of the times. Prerequisite: CF 202 and U. S. History.
- CF 363 Price Practices and Policies** 4 credits
Determinants of price, pricing, Robinson-Patman Act, F.T.C., retail price maintenance; price and non-price competition. Prerequisite: CF 315.
- CF 411 Advanced Law and Business (111)** 4 credits
A survey of principles of law oriented as a review for C.P.A. candidates. Required of public accounting majors. Prerequisite: CF 311.
- CF 423 Sales Management** 4 credits
Personal selling, pricing, sales programs, sales administration, advertising. Prerequisites: CF 215, 327.
- CF 430 Market Research** 4 credits
Purpose, methods and techniques of market research and market analysis. Prerequisites: CF 250, 327, 363.
- CF 450 Public Finance and Taxation** 4 credits
Revenue, expenditure and debt of federal, state and local governments; economic theories on government expenditures; constitutional limitations; taxation as a means of economic reform; the shifting and incidence of taxation; state and federal taxation. Prerequisites: CF 231, 250, 260.
- CF 455 History of Economic Thought** 4 credits
Survey of the major historical development in economic thought from ancient to contemporary times; Christian influence on economic thought; mercantilists and laissez faireists; German and Austrian schools; Marx and the modern theories.
- CF 460 Business Cycles** 4 credits
Analysis of the variations in the business activity with emphasis on the business cycle, its course and remedies; study of seasonal random; trend and its nature, history, causes and remedies. Prerequisites: CF 250, 450.
- CF 470 Government and Business** 4 credits
The role of modern government in business, government ownership and operation and the regulation of private enterprise; the federal and state constitutions; government control, direct and indirect, over transportation, utilities, communication. Prerequisite: CF 460.
- CF 475 Personnel Management** 4 credits
A study of principles and practices involved in the administration of personnel in industry; included is a study of the technique of appraising applicants and employees, plant welfare plans, collective bargaining and question of wages, hours, health, working conditions, grievance, discipline, and women employees. Prerequisite: CF 305.
- CF 485 Federal Tax Accounting I** 4 credits
Federal income tax in relation to individuals, partnerships and corporations; preparation of tax returns; use of tax services and research in tax problems. Prerequisite: CF 231.
- CF 486 Advanced Accounting and CPA Problems I** 4 credits
Partnership dissolution; liquidation by installments; joint ventures; installment sales; consignment sales. Selected CPA problems and other problems are used. Prerequisite: CF 319.
- CF 487 Advanced Accounting and CPA Problems II** 4 credits
Accounting for agencies and branches; accounting for mergers and consolidations; consolidated balance sheet; profit and loss statements. Prerequisite: CF 319.
- CF 488 Advanced Accounting and CPA Problems III** 3 credits
Statement of affairs; receiverships; estates and trusts. Prerequisite: CF 319.
- CF 489 Advanced Accounting and CPA Problems IV** 2 credits
Governmental and institutional accounting; accounting for municipalities, school districts and hospitals. Prerequisite: CF 319.
- CF 493 Federal Tax Accounting II** 3 credits
Estates and trusts corporate reorganizations. Prerequisite: CF 485.
- CF 497 Business Policy and Organization** 4 credits
Case studies of formation of policy and the administration of business enterprise; emphasis on the intellectual discipline which permits the understanding of a problem, the planning of a program of action and the progression to execution and constant review.
- CF 499 Investigation of Special Topics** 2-4 credits
Supervised individual research. Open to senior economics majors with the approval of the head of the department. Prerequisites: CF 202, 360, 361.





EDUCATION

DAN HIGGINS
UNIVERSITY
AND EDUCATION

School of Education

Winfield S. Fountain, Ed.D., *Dean*

Objectives

Within the framework of the University's philosophy and principles, the School of Education has as its objectives the attainment of a liberal and humane education, the formation of men and women dedicated to the art of teaching and knowledgeable of its sciences, and a sound preparation in fields or areas of learning applicable to the curriculum of the elementary and secondary school.

The teacher education program at Seattle University develops a breadth and depth of culture and a mastery of the chosen areas of teaching. The educational philosophy of Seattle University is dualistic—the development and harmonious unity of both mind and matter—and Christian—the illumination and elevation of man through revelation.

Approval

The School is authorized by the Washington State Board of Education to prepare candidates and to recommend them to the State Department of Public Instruction for teacher certification and principals' credentials.

Organization

The School of Education has two major divisions, undergraduate studies and graduate studies and one department, Health and Physical Education. The Advisory Committee on Teacher Education, which consists of faculty members from both the College of Arts and Sciences and the School of Education, makes recommendations regarding program changes and reviews new programs prior to consideration by the Academic Council. Close cooperation exists among all departments, schools and colleges of the University in working out a program of preparation for the individual student.

Admission Requirements

All entering freshmen and undergraduate transfer students from accredited institutions of higher learning who aspire to become teachers may be admitted to the School of Education if they meet the University's regular admission standards.

A student in the School of Education will be approved for the certification program of studies upon achieving a 2.5 or higher cumulative grade point average and after acceptance by a faculty selection committee which has been convened to consider the applicant's potential as a teacher. Normally, this committee is convened after the applicant has completed approximately 80 quarter hour credits, or, in the event the applicant had taken this amount of study at another institution, after a full quarter of study at Seattle University.

Applicants with a bachelor's degree earned in other disciplines at Seattle University or at other accredited

institutions of higher learning will meet with the faculty committee prior to being approved for the certification program of studies.

Periodic faculty reviews of the prospective teacher's progress are made at the completion of his foundations of education course, his committee interview, the completion of his principles and technology course, wherein he teaches before his fellow students, and upon completion of his preferred level student teaching.

In addition to the maintenance of a minimum grade point average of 2.5, which demonstrates adequate mastery of the intended teaching subjects and the ability to use the essential communication skills, the prospective teacher is expected to exemplify sound character, personality and a positive commitment to teaching.

Degrees Offered

Bachelor of Arts in Education
Bachelor of Education
Master of Arts in Education
Master of Education

Curriculum

The teacher preparation curriculum at Seattle University encompasses three components:

The liberal core of arts and sciences taken by all students at Seattle University comprises about 45 per cent of the prospective teacher's curriculum. Thirty-five per cent of the program is utilized in gaining a depth of knowledge in a teaching major and minor for the secondary school teacher or two teaching areas for the elementary school teacher. The remaining 20 per cent of the 190 quarter hour basic teaching preparation is received in professional courses in foundations of education, psychology of child and adolescent development and learning, the principles, materials and technology of teaching, and two quarters of closely supervised and assisted student teaching in schools throughout the area.

The School offers work leading to the provisional teaching certificate, the standard teaching certificate, the provisional principal's credential and the standard principal's credential.

Each undergraduate and graduate student in education is assigned an adviser with whom he confers at least quarterly. He must also confer periodically with an adviser in his major department. Certification of the mastery of a teaching major taken by a prospective teacher is a joint responsibility of the School of Education and the department in which the student has elected to specialize. Selection of candidates for teacher certification, their advisement, supervision, assistance in placement and follow-up of initial teaching is the responsibility of the School of Education which both ob-

serves in the schools and receives reports from them regarding the effectiveness of existing programs of teacher preparation.

General Program Requirements

Students in the School of Education must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those of the School outlined below.

BACHELOR OF EDUCATION (elementary teaching)—24 hours in one of the following teaching subjects: art, English, history, modern languages, music; 24 hours in one of these teaching areas: social studies, language arts, science-mathematics, fine and applied arts: American literature and United States history are required.

BACHELOR OF EDUCATION (junior high teaching)—28 hours in English and 28 hours in history.

Both programs require professional courses in addition to the core and the above subject area requirements to total a minimum of 190 hours. The Bachelor of Education requires 180 hours and the additional 10 hours may be applied to the fifth year requirement.

BACHELOR OF ARTS IN EDUCATION (secondary, elementary or junior high teaching)—40 hours in a teaching major selected from: art, biology, business education, chemistry, English, history, general science, home economics, mathematics, languages, music, physical education, physics; 22 hours in a teaching minor selected from the above listed areas; a course in the organization and teaching of both the major and minor subject area is also required. The Bachelor of Arts in Education requires 180 hours and the additional 10 hours may be applied to the fifth year requirement.

Graduate Programs

MASTER OF EDUCATION—45 hours with a major in school administration, curriculum development, guidance or instructional psychology; either a graduate project or a thesis must be completed; satisfactory completion of a written examination covering the major field is required.

This degree is designed to broaden and deepen the knowledge of experienced teachers. Combined with the Washington State Provisional Principal's Credential, it requires a total of 54 quarter hours beyond the bachelor's degree. The candidate should consult with an adviser as to the level of work for the additional nine hours.

MASTER OF ARTS IN EDUCATION—45 hours with a major in school administration, curriculum development, guidance or instructional psychology; a thesis must be completed and a written examination in a modern language may be required; satisfactory completion of a written examination covering the major field is required.

This degree is designed as an intensive preparation which may lead to doctoral graduate study. The Master of Arts in Education, combined with the Washington State Provisional Principal's Credential, requires a total of 54 quarter hours beyond the bachelor's degree.

The candidate should consult with an adviser as to the level of work for the additional nine hours.

For either the Master of Education or the Master of Arts in Education, a maximum of 15 credits of supporting studies in 300-599 level courses may be taken from departments outside the School of Education, provided the major for the master's degree has been programmed fully, prior approval has been received from the Graduate Committee and Graduate Council, and the credits are earned at Seattle University or at another accredited institution in agreement with the initial program of studies.

Applicants for graduate degree programs in the School of Education are granted full candidate status after the Committee on Graduate Studies has given approval based on:

1. the cumulative undergraduate grade point average;
2. the recommendation of the authorities of the School where the applicant is assigned;
3. the score received on the Graduate Record Examination;
4. the arrangement with an adviser of a proposed program of studies;
5. the quality of the first 20 quarter credits of graduate work completed at Seattle University (which must include Education 500, 501, 560 or 561) and at least one course in the graduate major.

When full candidate status is accorded, the 20 credits of provisional work will become a part of the total 45 credit graduate degree program.

Senior and junior high school teachers applying for graduate degree programs are expected to have completed previously the equivalent of a major (approximately 40 hours) in a *commonly taught* undergraduate subject such as history, English, mathematics, science or foreign language, as well as a minor in some other teaching subject.

Elementary school teachers are expected to have completed previously the equivalent of a major in a teaching field such as social studies, language arts, arithmetic and science, fine and applied arts, as well as a minor in another teaching field.

Candidates for a master's degree in the School of Education must be in residence for at least one full quarter. The remaining work may be taken on less than a full time basis during the other academic quarters of the year.

Graduate students and candidates for the Standard Teaching Certificate who are teaching full time should register for only one three-credit course per quarter during the regular academic year and will not be allowed to register for more than one five-credit course or two three-credit courses and then only upon the recommendation of the major adviser.

Special Programs for Certification

Programs may be designed for those already possessing bachelor's degrees who lack certain courses to meet the requirements for teacher certification. Provisions for admission may be found in the Graduate School section of this bulletin.

FIFTH-YEAR NON-DEGREE PROGRAMS—Programs of this type are designed for those planning to meet the requirements for standard teacher certification but who do not desire to work for a master's degree.

TEACHING CERTIFICATES—The School of Education offers various programs which meet the requirements for teaching certificates issued by the Washington State Department of Public Instruction. Consult the School of Education for State regulations regarding the requirements for specific certificates.

A candidate for teacher certification who has completed the requirements for a bachelor's degree in the School of Education must receive recommendations from both the faculty and the head of the department in which his teaching major was completed before his name is submitted to the State Department of Public Instruction for a teaching certificate. The provisional certificate is valid for three years and may be renewed once upon completion of 12 quarter hours of the fifth college year and one year of successful teaching.

Candidates who have completed their bachelor degrees at other accredited institutions and who plan to earn their provisional teaching certificates through Seattle University must complete a minimum of 30 quarter hour credits of approved course work at Seattle University.

The standard certificate will be issued upon successful completion of the fifth college year and two years of teaching experience. The fifth year shall include a minimum of 45 quarter hours of which at least 50 per cent are in studies of the third, fourth, and postgraduate years.

Candidates who plan to earn their standard teaching certificate through Seattle University must complete at Seattle University a minimum of 25 of the required 45 quarter hour credits. All work to be applied toward this certificate must conform to the fifth year plan which the candidate filed with the county and state.

Principals' Credentials

Candidates for the provisional principal's credential must receive State of Washington Board of Education approval to enter administrative preparation leading to the credential. (An application form may be obtained from the faculty adviser.) Requirements for the principal's credential include: completion of requirements for a standard teaching certificate; 54 quarter hours of course work beyond the bachelor's degree, of which at least 24 quarter hours are to be in school administration studies, including administrative internship; and at least three years of successful teaching at the time the credential is requested. At least one year of successful teaching must have been completed at the time the candidate begins the credential program. Acceptance in Graduate School as a credential candidate is a prerequisite.

Candidates for the standard principal's credential must have the provisional principal's credential, have completed 12 quarter hours of applicable study since receiving the provisional credential, have a master's de-

gree and have completed three successful years as a school principal. For detailed programs and instructions consult the School of Education.

Bachelor of Arts in Education Secondary

Freshman year

English 110, 160, 180 or 190	12 hours
History 101, 102, 103	12 hours
Major or minor	8 hours
Philosophy 125, 150, 175	12 hours
Social Science	4 hours

Sophomore year

Education 200, 201, 322	8 hours
Major or minor	24 hours
Philosophy 225, 250	8 hours
Physical Education 353 and activities	5 hours
Theology 120	4 hours

Junior year

Education 325, 330, 331, 332, 337, 441	19 hours
Major or minor	12 hours
Science or mathematics	4 hours
Speech 320	4 hours
Theology 220, 320	8 hours

Senior year

Education 445 and one 430 series course	14 hours
Major or minor	16 hours
Science or mathematics and elective	8 hours
Social science	4 hours
Theology 420	4 hours

Total.....190 hours

Bachelor of Education Elementary

Freshman year

English 110, 160, 180 or 190	12 hours
History 101, 102, 103	12 hours
Major or minor	8 hours
Philosophy 125, 150, 175	12 hours
Social Science	4 hours

Sophomore year

Biology 111, 112	4 hours
Education 200, 201, 322, 372	12 hours
Major or minor	16 hours
Philosophy 225, 250	8 hours
Physical Education 352 and activities	5 hours
Theology 120	4 hours

Junior year

Education 325, 330, 331, 332, 336, 340, 370, 446	26 hours
Major or minor	4 hours
Music 114	3 hours
Speech 320	4 hours
Theology 220, 320	8 hours

Senior year

Biology 113	4 hours
Education 421, 422, 440	16 hours
History 341	4 hours
Mathematics	4 hours
Major or minor	16 hours
Theology 420	4 hours

Total.....190 hours

Education Courses

- Ed 200 Foundations of American Education 3 credits (101)** Philosophy, history, organization and administration of public, private and Catholic education in the United States; nature of the teaching profession, its opportunities, requirements and problems.
- Ed 201 Introduction to Educational Statistical Method 2 credits** Use of the empirical method, nature of measurement, methods of organizing data, central tendency, variability and correlation; logical application of these concepts by the teacher.
- Ed 305 Philosophy of Education 4 credits (P1 305)** Philosophies of education in the American schools.
- Ed 322 Psychology of Development 3 credits** A survey of developmental changes in the life span of the normal human being with emphasis on school age years. Prerequisite: Ed 201.
- Ed 323 Psychology of the Child 3 credits** Principles, factors, stages and problems in child development from conception to puberty. Prerequisite: Ed 201.
- Ed 324 Psychology of Adolescence 3 credits** Principles, factors, stages and problems in the development of the adolescent from puberty to adulthood. Prerequisite: Ed 201.
- Ed 325 Psychology of Classroom Learning 3 credits** Study of the learning process, development of desirable school behavior; evaluation of learning; gaining optimum student learning. Prerequisite: Ed 322.
- Ed 330 Principles of Teaching 3 credits** Application of psychological principles of learning to the practical problems of organizing and presenting learning materials in actual classroom situations. Prerequisite: Ed 325.
- Ed 331 Directed Observation of Teaching 2 credits** Observation, analysis and reporting on typical classes in the elementary and secondary schools of the Seattle school system; taken in conjunction with Ed 330. Prerequisite: Ed 325.
- Ed 332 Audio-Visual Aids 2 credits** Theory and use of audio-visual aids in the classroom; taken in conjunction with Ed 330, 331. Prerequisite: Ed 325.
- Ed 335 The Kindergarten-Primary 3 credits** Principles, organization and methods of teaching.
- Ed 336 Fundamentals of Reading Instruction—Elementary 3 credits** Techniques in teaching reading in the elementary school; emphasis on primary grades. Prerequisite: Ed 325.
- Ed 337 Fundamentals of Reading Instruction—Secondary 3 credits** Techniques in analyzing, evaluating and improving reading in secondary schools. Prerequisite: Ed 325.
- Ed 338 Remedial Reading Techniques 3 credits** Analysis of and remedial techniques for reading problems. Prerequisite: Ed 325.
- Ed 340 Fundamentals of Mathematics Instruction—Elementary I 4 credits**
- Ed 341 Fundamentals of Mathematics Instruction—Elementary II 4 credits** (I) Study of number systems including basic operations and properties of numbers; principles of teaching these concepts in kindergarten through grade 6. Prerequisite: Ed 325. (II) Emphasis on geometry and measurement; principles of teaching these in kindergarten through grade 6. Prerequisite: Ed 340.
- Ed 370 Arts and Crafts in the School 3 credits (351)** A laboratory course for experience in artistic expression in basic art media in elementary and secondary schools.
- Ed 372 World Geography 4 credits** A survey of the world's land forms; climate; soils; minerals; plant and animal life; man's relation to his physical environment.
- Ed 373 Story Telling—Primary 2 credits** Selection and interpretation of kindergarten-primary grade literature. For kindergarten-primary grade teachers and elementary school librarians.
- Ed 374 Literature for Children 3 credits** Survey of the present field of literature for pre-school, primary and elementary grades.
- Ed 375 Literature for Youth 3 credits** Survey of junior books and an analysis of adult books suitable for the young adult.
- Ed 378 Children's Drama 3 credits** The use of drama in the classroom; creative drama techniques.
- Ed 401 Workshop in Elementary School Methods 3 credits**
- Ed 402 Workshop in Secondary School Methods 3 credits**
- Ed 403 Workshop in Improvement of Instruction 3 credits**
- Ed 404 Workshop in Elementary School Curriculum 3 credits**
- Ed 405 Workshop in Secondary School Curriculum 3 credits**
- Ed 406 Workshop in Audio-Visual Methods 3 credits**
- Ed 407 Workshop in Television Teaching 3 credits**
- Ed 408 Workshop in Business Education 3 credits**
- Ed 409 Workshop in Secretarial Studies 3 credits**
- Ed 410 Workshop in Elementary School Creative Writing 3 credits** Individualized study, research and development of specific curricular programs under the direction of a subject field specialist.
- Ed 411 Organization of Library Materials 3 credits** Principles and techniques of cataloging, organization, classification and subject heading assignment; study of Dewey decimal system.
- Ed 412 Library Reference Materials 3 credits** The school librarian's services related to information for classroom teachers; examination of the major reference sources such as encyclopedias, dictionaries, indexes, atlases and instructional aid files.

- Ed 415 Library Administration 3 credits**
Organization of the school library; study of standards, utilization, plans, selection of materials, equipment and personnel.
- Ed 420 Teaching Elementary School Subjects 4 credits**
General methods of teaching in specific subjects, areas and levels of the elementary school. Prerequisite: Ed 330.
- Ed 421 Teaching Elementary School (430-E) Language Arts 2 credits**
Adaptation of general methods of teaching to the area of language arts in the elementary school. Taken in same quarter with Ed 440. Prerequisite: Ed 330.
- Ed 422 Teaching Elementary School (430-S) Social Studies 2 credits**
Adaptation of general methods of teaching to the area of social studies in the elementary school. Taken in same quarter with Ed 440. Prerequisite: Ed 330.
- Ed 423 Teaching Elementary School Art (430-A) 2 credits**
Adaptation of general methods to the teaching of art in the elementary school. Taken in same quarter with Ed 440. Prerequisite: Ed 330.
- Ed 424 Teaching Elementary School Music (430-G) 2 credits**
Adaptation of general methods of teaching to the area of elementary school music. Taken in same quarter with Ed 440. Prerequisite: Ed 330.
- Ed 425 Teaching Elementary School Religion (430-R) 2 credits**
Adaptation of general methods of teaching to the area of elementary school religion. Taken in same quarter with Ed 440. Prerequisite: Ed 330.
- Ed 426 Special Education—(446) Teaching Trainables 2 credits**
Materials and techniques for educating the severely retarded child.
- Ed 427 Special Education—(447) Teaching Educables 2 credits**
Materials and techniques for educating the moderately retarded child.
- Ed 428 Montessori Method of Teaching (437) 3 credits**
History, philosophy, basic principles and teaching methods of Dr. Maria Montessori.
- Ed 429 Workshop in Montessori Education (487) 3 credits**
Demonstration and application of Montessori methods and materials in teaching preschool and primary levels. Prerequisite: Ed 428.
- Ed 430 Teaching Secondary School Subjects 4 credits**
General methods of teaching in specific subjects, areas and levels of the secondary school. Taken in same quarter with Ed 445. Prerequisite: Ed 330.
- Ed 431 Teaching Secondary School (431-E) English and Speech 2 credits**
Adaptation of general methods of teaching to the secondary school areas of English and speech. Taken in same quarter with Ed 445. Prerequisite: Ed 330.
- Ed 432 Teaching Secondary School (431-S) Social Sciences 2 credits**
Adaptation of general methods of teaching to the secondary school area of Social Sciences. Taken in same quarter with Ed 445. Prerequisite: Ed 330.
- Ed 433 Teaching Secondary (431-F) School Languages 2 credits**
Adaptation of general methods of teaching to the secondary school area of foreign languages. Taken in same quarter with Ed 445. Prerequisite: Ed 330.
- Ed 434 Teaching Secondary School Science (431-E) 2 credits**
Adaptation of general methods of teaching to the secondary school area of science. Taken in same quarter with Ed 445. Prerequisite: Ed 330.
- Ed 435 Teaching Secondary School (431-M) Mathematics 2 credits**
Adaptation of general methods of teaching to the secondary school area of mathematics. Taken in same quarter with Ed 445. Prerequisite: Ed 330.
- Ed 436 Teaching Secondary School (431-R) Religion 2 credits**
Adaptation of general methods of teaching to the secondary school area of religion. Prerequisite: Ed 330.
- Ed 438 Laboratory Experience—Elementary 6 credits**
Ed 439 Laboratory Experience—Secondary 6 credits
(434) Directed experience with pupils on the elementary
(435) or secondary school level. Prerequisite: Ed 330.
- Ed 440 Student Teaching—Elementary 12 credits**
- Ed 441 Student Teaching—Elementary 6 credits**
(432) One quarter of either full-day (12 credits) or part-day (6 credits) of supervised teaching experience on the elementary school level. Prerequisite: Ed 330.
- Ed 445 Student Teaching—Secondary 12 credits**
Ed 446 Student Teaching—Secondary 6 credits
(433) One quarter of either full-day (12 credits) or part-day (6 credits) of supervised teaching experience on the secondary school level. Prerequisite: Ed 330.
- Ed 451 Art Education—Beginning Media 3 credits**
Ed 452 Art Education—Intermediate Media 3 credits
Ed 453 Art Education—Advanced Media 3 credits
Teaching of art media which can be utilized by the general classroom teacher in the elementary school and junior high school general art programs. For experienced teachers with majors other than art.
- Ed 460 Speech Correction 3 credits**
Analysis of more common speech problems of the classroom and demonstration of remedial techniques.
- Ed 461 Speech Training for the Retarded (448) 3 credits**
Teacher's course in special techniques of speech development for the mentally retarded.
- Ed 467 Educational Sociology (Sc 467) 3-4 credits**
(Ed 564) Social nature of education, interrelationship of society and education, cultural and social media and agencies.
- Ed 471 Geography of the Pacific Northwest 3 credits**
A regional survey emphasizing natural resources, their use and role in urban and rural developments.
- Ed 472 Geography of the Western Hemisphere 3 credits**
Natural resources of the Western hemisphere and their effect upon world trade and international relations.
- Ed 473 Geography of Asia 3 credits**
A survey of countries and regions; their resources, economic activities, settlement patterns and international relations.

- Ed 474 Geography of the Pacific Rim 3 credits**
Physical geography of the areas bordering the Pacific, trade and international relations.
- Ed 475 Geography of North America 3 credits**
Physical geography of North America with emphasis on the cultural and economic results of resources.
- Ed 476 Geography of South America 3 credits**
Physical geography of South America with emphasis on the cultural and economic results of resources.
- Ed 497 Investigation of Special Topics 1-4 credits**
Ed 498 Investigation of Special Topics 1-4 credits
Ed 499 Investigation of Special Topics 1-4 credits
Supervised research work. Open to seniors in education with the approval of their adviser and the dean.

Graduate Courses

- Ed 500 Educational Research 3 credits**
Basic types and techniques of research; analysis of graduate research; submission of tentative research project. Required of all candidates for the master's program.
- Ed 501 Educational Statistics 3 credits**
Basic measures of central tendency, variability, correlation, reliability and methods of graphic presentation. Required of all candidates for the master's degree.
- Ed 510 Introduction to Guidance 3 credits**
An overview of the philosophy, principles and services of school guidance for classroom teachers and beginning guidance specialists.
- Ed 511 Organization and Administration of Guidance Services 3 credits**
Consideration of the various guidance services offered in schools with particular reference to their organization and administration as well as the ethics and legality involved. Prerequisite: Ed 510.
- Ed 512 Informational Services in Guidance 3 credits**
Study of the occupational, educational and social information necessary for the effective guidance of students; supplemented with appropriate field visits. Prerequisite: Ed 510.
- Ed 513 Principles and Practices in Counseling 3 credits**
Study of the various theories of counseling with opportunities for in-class practice in simulated counseling interview situations of the type encountered in schools. Prerequisite: Ed 510.
- Ed 514 Seminar in Counseling Interview 4 credits**
Development for advanced students of clinical counseling techniques, including supervised interviewing experience. Prerequisite: Ed 513 or Psy 427.
- Ed 522 Child Psychology Seminar 4 credits**
Investigation and reporting on original studies in child psychology; includes a personal report on an investigation of some specific phase or problem. Prerequisites: Ed 322 or 323; Ed 501.
- Ed 523 Adolescent Psychology Seminar 4 credits**
Investigation and reporting on original studies in adolescent psychology, including a personal report on an investigation of some specific phase or problem. Prerequisites: Ed 322 or 324, Ed 501.

- Ed 524 Psychology of the Exceptional Child 4 credits**
A study of the atypical child who deviates from the normal to well below or above the average; tests for evaluation; consideration of remedial techniques.
- Ed 525 Psychology of Learning Seminar 4 credits**
Investigation, analysis and reporting on original studies in the field of learning; includes a report on an investigation of some specific phase or problem. Prerequisites: Ed 325, Ed 501.
- Ed 526 Measurement and Evaluation for Classroom Teachers 3 credits**
Nature, uses and limitations of various measurement instruments used in school testing programs; exposure to representative standardized test materials. Not interchangeable with Ed 527 or Ed 528. Prerequisite: Ed 501.
- Ed 527 Measurement in Psychology and Education 3 credits**
Theoretical foundations of modern measurement practices in education and related fields; taught with the co-operation of the Psychology Department for prospective guidance specialists. Prerequisite: Ed 501.
- Ed 528 Psychological Tests 3 credits**
Application of principles of psychological measurement in the critical examination of representative standardized tests used in schools with opportunities for scoring and interpretive practice. Prerequisite: Ed 527.
- Ed 529 Character Education 3 credits**
Psychological foundations of character development, will-training, values, nature of morality, the relation of character to education, and studies in character education. Prerequisite: Ed 325.
- Ed 530 Seminar in Elementary Methods—Subject Area 3 credits**
Investigation, analysis and reporting on original studies in teaching methods; includes a personal report of an intensive nature on some phase.
- Ed 531 Seminar in Secondary Methods—Subject Area 3 credits**
Investigation, analysis and reporting on original studies in teaching methods, including a personal report of an intensive nature on some phase.
- Ed 536 Seminar in Teaching of Reading 3 credits**
Development of reading skills at all levels; evaluation of current reading practices and research findings in reading; construction of a developmental reading program.
- Ed 538 Supervision of Instruction 3 credits**
Improvement of instruction through supervisory leadership.
- Ed 540 Fundamentals of Curriculum Development 3 credits**
Historical, philosophical foundations, principles, types and methods of curriculum development and organization.
- Ed 541 Elementary Curriculum Seminar 3 credits**
Investigation and analysis of changes and trends, including a personal intensive report on some phase of curriculum on the elementary school level. Prerequisite: Ed 540.
- Ed 542 Junior High School Curriculum Seminar 3 credits**
Investigation and analysis of changes and trends, including a personal intensive report on some phase

- of curriculum on the junior high school level. Prerequisite: Ed 540.
- Ed 543 Senior High School Curriculum Seminar** **3 credits**
Investigation and analysis of changes and trends, including a personal intensive report on some phase of curriculum on the senior high school level. Prerequisite: Ed 540.
- Ed 544 Seminar: The Gifted Child—Elementary** **3 credits**
Principles, curricula and methods appropriate to teaching the gifted child in the elementary school. Prerequisite: Ed 540.
- Ed 545 Seminar: The Gifted Child—Secondary** **3 credits**
Principles, curricula and methods appropriate to teaching the gifted youth in the secondary school. Prerequisite: Ed 540.
- Ed 546 Special Education Seminar** **3 credits**
Investigation, analysis and reporting on original studies and trends in education of the mentally retarded. Prerequisite: Ed 524.
- Ed 550 Practicum in Group Processes** **3 credits**
Supervised off-campus experience with youth in a group dynamics situation oriented toward the school guidance function. Offered summer quarter with limited enrollment approved by practicum supervisor. Prerequisite: Ed 513.
- Ed 551 Counseling Practicum** **3-6 credits**
Supervised counseling experience wherein the counselor candidate is responsible for actual counseling cases and small group guidance situations. Prerequisite: Ed 513.
- Ed 552 Field Experience in Guidance** **3 credits**
Supervised on-the-job participation in guidance activities in a regular school setting. Three clock hours per school week during one full semester required; also permission in advance. Prerequisites: Ed 512, 513, 528.
- Ed 560 Philosophy of Education** **3 credits**
Philosophical foundations of education.
- Ed 561 History of Education** **3 credits**
Great educators, theories and systems from the Hebrews, Greeks and Romans to the present.
- Ed 562 Jesuit Education** **3 credits**
History, principles and methods of the Jesuit system of education; analysis of the Ratio Studiorum. Prerequisite: Ed 561.
- Ed 563 Comparative Education** **3 credits**
Investigation and comparison of the leading national and cultural systems of education of the world. Prerequisite: Ed 560.
- Ed 565 Seminar in Education Classics I** **3 credits**
Ed 566 Seminar in Educational Classics II **3 credits**
Ed 567 Seminar in Educational Classics III **3 credits**
(I) Ancient writers: Plato, Aristotle, Plutarch, Cicero, Quintilian; (II) Middle writers: New Testament, Augustine, Aquina, Tertullian, Clement, Maurus, Erasmus, Comenius; (III) Modern writers: Rousseau, Locke, Pestalozzi, Nerbart, Froebel. Prerequisites: Ed 560, 561.
- Ed 583 School Finance** **3 credits**
Historical development; balanced taxation; school support program; budgets; problems and controversies.
- Ed 584 School Law** **3 credits**
Federal and state laws regarding education; liability and protection of schools; legal status of personnel; case precedents.
- Ed 585 School Plant Planning** **3 credits**
Plant requirement projections; site selections; staff and patron planning; leadership of principal.
- Ed 586 School Personnel** **3 credits**
Recruitment, selection, orientation, induction and retention of certificated and non-certificated personnel.
- Ed 577 Seminar in Contemporary World Problems** **4 credits**
Location, use and organization of resources and materials in building background information for social studies courses.
- Ed 579 Writing for Publication** **3 credits**
Advanced course in the preparation and composition of articles for learned and professional journals in education. Prerequisite: Permission of adviser.
- Ed 580 Seminar in School Administration** **3 credits**
Contemporary problems and trends; analysis and evaluation.
- Ed 581 Seminar in Elementary School Administration** **3 credits**
Duties of administrators; criteria; administrative process; case studies. Prerequisite: Ed 541 or permission.
- Ed 582 Seminar in Secondary School Administration** **3 credits**
Duties of administrators; criteria; administrative process; case studies. Prerequisites: Ed 542 or 543 or permission.
- Ed 587 School Public Relations** **3 credits**
Purposes and media for informing the general public and school patrons about school programs and needs; public relations roles of teacher and administrative officers.
- Ed 588 Administrative Internship I** **3 credits**
Ed 589 Administrative Internship II **3 credits**
Supervised experiences in the administration of a school. Prerequisite: Course work in school administration and permission the spring prior to year of internship. Required for credentials.
- Ed 590 Graduate Research Readings** **1-3 credits**
Intensive library research. Approximately 30 hours of reading and allied assignments for each credit. Completion reports will include analysis and critical appraisal of materials read. Prerequisite: Permission of adviser.
- Ed 592 Field Study for Administrative Internship** **3 credits**
A research report of a problem in school administration. Prerequisite: Ed 500, 501 and permission.
- Ed 593 Graduate Project** **3 credits**
A scholarly graduate project employing a conventional research method. For non-thesis degrees. Prerequisites: Ed 500 and 501. Permission and completion of basic courses in major.
- Ed 599 Thesis** **10 credits**
A contribution to the body of essential knowledge in the fields of teaching and specialized education. Required of M.A. in Ed. candidates. Prerequisites: Ed 500 and 501; permission and completion of basic courses in major.

Health and Physical Education

Joseph T. Page, Ph.D., Head

Objectives

The Health and Physical Education department has as its prime objectives the physical and neuromuscular skill development and the recreational welfare of all students. The department fulfills three major functions at Seattle University. These are:

The professional preparation of young men and women as teachers of health and physical education.

The conduct of a wide variety of intramural sports activities for recreational and social benefit of all students.

The sponsorship of a broad range of physical education instructional service programs designed to meet the physical activity needs of college men and women.

Degree Offered

Bachelor of Arts in Education

General Degree Requirements

Students in the fields of health and physical education must satisfy University core curriculum requirements as given on page 24 of this bulletin as well as those of the School of Education.

All students planning to receive a teaching certificate must be accepted by the School of Education but such acceptance does not imply that the student will be permitted to pursue this teaching field. Students may indicate their interest in this area at the time of application for admission to the School of Education.

During the succeeding months their aptitude and promise for the field of physical education will be evaluated. Counseling, designed to assist the student to develop in ways requisite for successful teaching and leadership in the field, will be offered. Candidates must demonstrate superior physical skills, intellectual competency, and desirable personality and character traits before they will be accepted.

Candidates for teaching certificates will complete the required courses in teacher education. Upon graduation, certified teachers will have, in addition to the general and professional education requirements, a total major area of 40 credit hours and, for the minor, 20 credit hours in health and physical education.

PE 155	First Aid and Safety	2 credits
	A basic course in emergency procedures leading to the Standard American Red Cross certificate.	
PE 160	Badminton	1 credit
PE 161	Bowling	1 credit
PE 162	Golf	1 credit
PE 163	Gymnastics	1 credit
PE 164	Swimming	1 credit
PE 165	Tennis	1 credit
PE 166	Volleyball	1 credit
PE 167	Flycasting	1 credit

Departmental Requirements

BACHELOR OF ARTS IN EDUCATION (Health and Physical Education)—40 hours of health and physical education courses which must include PE 155, 200, 220, 230, 308 or 309, 400, 440, 450 and 460, 4 hours selected from PE 318, 319, 320, 330, or 340, and 8 hours of physical education activities.

UNDERGRADUATE MINOR (Health and Physical Education)—24 hours of health and physical education which must include PE 155, 220, 308 or 309, 460, 4 hours selected from PE 318, 319, 320, 330, 340 and 6 hours of physical education activities.

Bachelor of Arts in Education Secondary

Freshman year

English 110, 160, and 180 or 190	12 hours
History 101, 102, 103	12 hours
Minor teaching area	4 hours
Philosophy 125, 150, 175	12 hours
Physical Education 353 and activities	6 hours
Social Science	4 hours

Sophomore year

Biology 200	4 hours
Education 200, 201, 322	8 hours
Minor teaching area	12 hours
Philosophy 225, 250	8 hours
Physical Education 155, 200, 220, 230	12 hours
Physical Education activities	3 hours
Theology 120	4 hours

Junior year

Education 325, 330, 331, 332, 337, 441	19 hours
Minor teaching area	4 hours
Physical Education 308 or 309, 400, 440 and electives	10 hours
Physical Education activities	2 hours
Science or mathematics	4 hours
Theology 220, 320	8 hours

Senior year

Education 445	12 hours
Minor teaching area	4 hours
Physical Education 450 and 460 and electives	10 hours
Science or mathematics and elective	8 hours
Social Science	4 hours
Speech 320	4 hours
Theology 420	4 hours

Total 190 hours

Health and Physical Education Courses

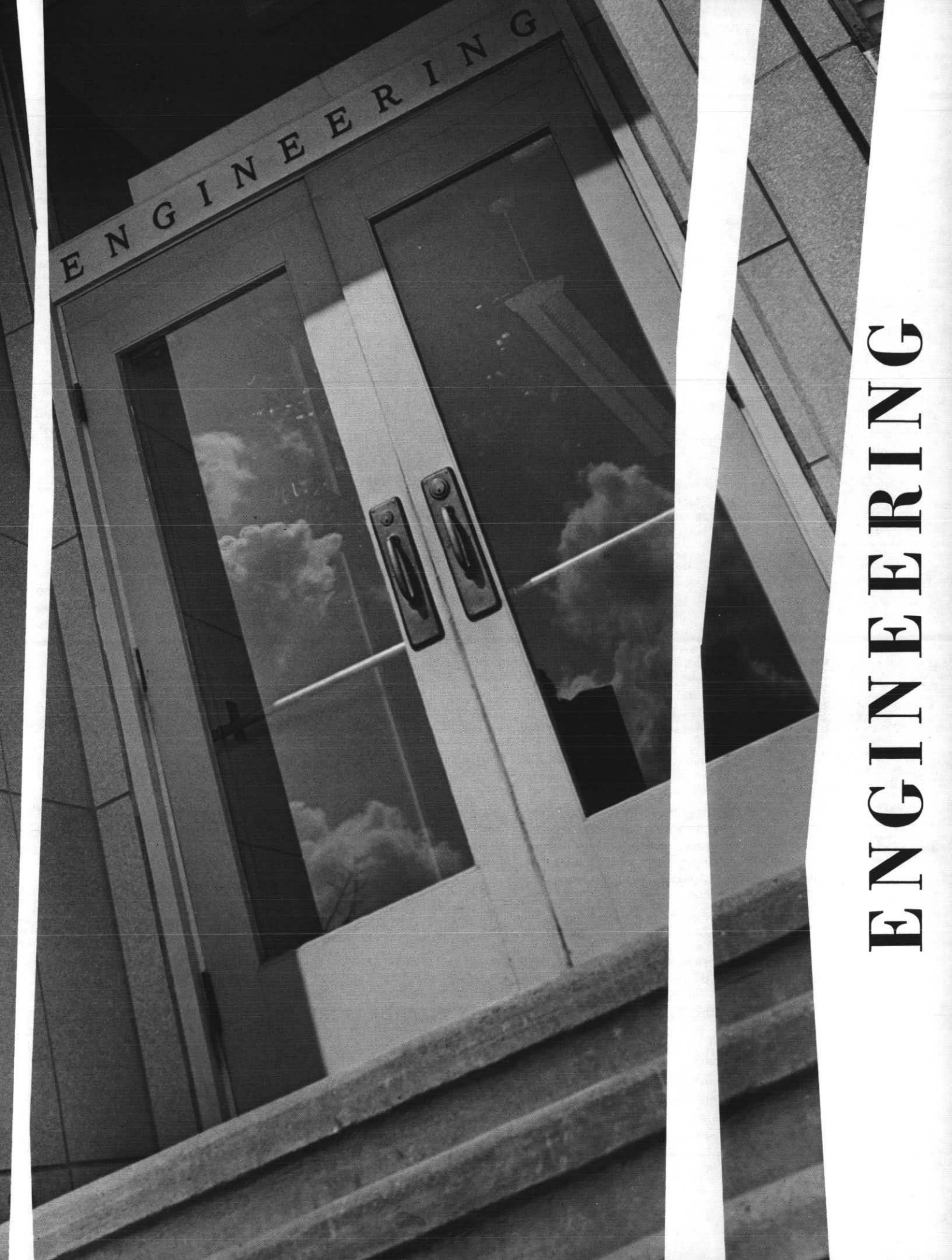
PE 168	Mountaineering	1 credit
PE 169	Skiing	1 credit
PE 170	Adapted Activities	1 credit
PE 171	Adapted Activities	1 credit
PE 180	Field Hockey (women)	1 credit
PE 181	Basketball (women)	1 credit
PE 182	Conditioning (women)	1 credit
PE 190	Basketball (men)	1 credit
PE 191	Touch Football (men)	1 credit
PE 192	Weight Training (men)	1 credit

- PE 193 Developmental (men) 1 credit**
Basic instructional course in activity indicated designed to meet the physical and recreational needs of college men and women.
- PE 200 Personal and Community Health 4 credits**
(150) A comprehensive course covering all basic aspects of health education; personal health problems; school health programs; community health agencies and problems.
(250)
- PE 220 Physiology of Exercise 4 credits**
Study of physical changes as the result of muscular activity; the muscular, circulatory and cardio-respiratory systems. Prerequisite: Bl 200.
- PE 230 Kinesiology 2 credits**
Study of muscular action and principles of motor movement. Prerequisites: Bl 200, PE 220.
- PE 308 Teaching Team Sports (women) 4 credits**
(120) A comprehensive course covering selected major team activities; includes coaching techniques, team strategies and related procedures. Women only. Prerequisites: Upper division standing. Departmental approval.
(121)
- PE 300 Teaching Team Sports (men) 4 credits**
(120) A comprehensive course covering selected major team activities; includes coaching techniques, team strategies and related procedures. Men only. Prerequisites: Upper division standing. Departmental approval.
(121)
- PE 318 Teaching Individual Sports (women) 2 credits**
(125) Comprehensive course covering individual and dual sports activities; teaching procedures and principles. Women only. Prerequisites: Upper division standing. Departmental approval.
(126)
- PE 319 Teaching Individual Sports (men) 2 credits**
(125) Comprehensive course covering individual and dual sports activities; teaching procedures and principles. Men only. Prerequisites: Upper division standing. Departmental approval.
(126)
- PE 320 Teaching Gymnastics 2 credits**
Procedures and techniques used in teaching basic gymnastic activities, including tumbling and apparatus. Men and women. Prerequisite: Gymnastics activities course.
- PE 330 Teaching Rhythmic Activities 2 credits**
A survey of and instruction in all fundamental rhythmic patterns; emphasis on teaching techniques and procedures.
- PE 340 Teaching Health Education 2 credits**
Techniques and methodology in health instruction; available community resources; audio-visual aids; voluntary agencies. Prerequisite: PE 200.
- PE 352 Orientation to Health and Physical Education—Elementary 3 credits**
Curriculum purposes, procedures and techniques. Includes legal liability, evaluation. Required of all elementary education majors.
- PE 353 Orientation to Health and Physical Education—Secondary 3 credits**
Objectives, content services and relationship to the total school program. Required of secondary education majors.
- PE 399 Adapted Physical Education 2 credits**
Analysis of common postural and functional deviations from the normal found in school children; modification of activity for the atypical child. Prerequisite: Bl 200.
- PE 400 Class Techniques in Physical Education 2 credits**
Procedures in teaching physical activity classes in secondary schools; administrative class details, including lesson planning grading, records, student leaders.
- PE 440 Tests and Measurement in Physical Education 2 credits**
The utilization of available testing procedures in physical education; evaluation of student achievement in terms of objectives. Prerequisite: Ed 201.
- PE 450 Principles and Practices in Physical Education 2 credits**
Concentrated analysis and study of the foundational principles and practices of physical education through historical development; present application and significance.
- PE 460 Organization and Administration of Physical Education 4 credits**
The summary professional course in physical education; includes service, intramural and interscholastic programs; stresses curriculum, scheduling, facilities. Prerequisites: Upper division standing. Departmental approval.



ENGINEERING

ENGINEERING



School of Engineering

David W. Schroeder, Ph.D., *Dean*

Objectives

The primary objective of Seattle University's School of Engineering is to teach those phases of engineering which can best be learned in school. These are principally the theoretical phases. Practical phases can be learned better through practice. The School aims to prepare the student for lifetime effectiveness. This means an emphasis on knowledge of slowest obsolescence which is most useful as a foundation for further education.

Accreditation

Engineering Council for Professional Development

Organization

The School of Engineering has three departments: Civil Engineering, Electrical Engineering and Mechanical Engineering. Students planning a career in aeronautical engineering are reminded that the great majority of persons employed in that industry are electrical and mechanical engineers.

Admission Requirements

Freshmen—Requirements for admission to the School of Engineering as a freshman are identical to those of the University. However, in addition to meeting the requirements set forth in the admission section of this bulletin, students applying for engineering must have completed basic and intermediate algebra and plane geometry. It is strongly recommended that trigonometry be taken in high school, otherwise more than a minimum time will be required to earn the bachelor's degree. The applicant who has not completed this subject should do so during the summer preceding his first registration at Seattle University.

Transfer Students—Students with advanced standing from another institution or from another school of Seattle University should consult the admission section of this bulletin. The applicant must have taken intermediate algebra, trigonometry and chemistry or physics either in high school or in college. The transfer student should specify the field of engineering he desires to enter.

Graduate Students—Applicants should have a bachelor of science degree in the same field as that in which they intend to study or in a closely related field. A grade point average of 2.75 or higher in the last two years work for the bachelor's degree is required.

Degrees Offered

Bachelor of Science in Civil Engineering
Bachelor of Science in Electrical Engineering
Bachelor of Science in Mechanical Engineering
Master of Science in Electrical Engineering (evening classes only)
Master of Science in Mechanical Engineering (evening classes only)

Two-degree Program—Students who add 12 hours in social science and 12 hours of electives to the prescribed curricula for the Bachelor of Science degree in civil, electrical or mechanical engineering, will have completed the requirements for the Bachelor of Science in General Science and may be awarded both degrees. The program for the two degrees can be completed in four calendar years if two summer sessions are attended. (See page 44.)

Students who add the 40 hours in military science (including four hours summer camp) to the prescribed curricula for the Bachelor of Science degree in civil, electrical or mechanical engineering, will be awarded the Bachelor of Science in Military Science degree in addition to their engineering degree. In some cases it will be possible to schedule these two degrees into a period of four calendar years by utilizing summer sessions, but in most cases attendance during a fifth calendar year will be required. (See page 60.)

Curriculum

In terms of subjects and curricula, the objectives of the School of Engineering lead to a knowledge of the basic sciences: chemistry, physics and mathematics, and the engineering sciences: mechanics of solids and fluids, properties of materials, thermodynamics, electric circuits and fields, and heat and mass transfer.

The first two years are devoted to such subjects. Approximately one-half of the last two years is concerned with more specialized study of the separate branches of engineering. Over-specialization is avoided. There is considerable laboratory work to acquaint the student with the experimental method of solving technical problems.

Distributed through all four years is a non-technical portion of the program designed to give some general, liberal and cultural education. Engineers study English literature, philosophy, theology and history with other students of Seattle University.

General Program Requirements

Students in the School of Engineering must satisfy the core curriculum requirements of the University given on page 24 of this bulletin and those of the School of Engineering which follow. The minimum time in which the bachelor's degree may be earned is four years of full-time study.

BACHELOR OF SCIENCE DEGREES—Each of the three engineering undergraduate curricula is tabulated below in the normal sequence in which it is taken by a full-time student. Most of the work of the first two years is common to all curricula. This makes it possible for a student to change his major during these two years with slight loss of credit. Students working full-time are limited to not more than 10 quarter hours of study per quarter.

To gain admission to junior and senior subjects the student must have completed within 10 quarter hours of all the science, mathematics and engineering subjects required in the first two years of his curriculum.

In special cases qualified students, with the approval of their major department, may substitute equivalent or more advanced courses in place of those listed.

Graduate Programs

MASTER OF SCIENCE DEGREES—These degrees require a minimum of 45 quarter hours of graduate study, including a thesis for which 10 quarter hours of

credit is given. There is no language requirement. Mathematics 461, 462, 463 are required and should be taken early for they are prerequisite to many of the other graduate courses. The program of study is subject to the approval of the student's mentor who is the head of the major department or his delegate.

Subjects required in the respective undergraduate curriculum may not be taken for credit toward a master's degree. Any student choosing a graduate major in a field different from his undergraduate major will generally be required to take some undergraduate courses in his new major field as determined by his mentor.

Objectives

The principal objectives of the Civil Engineering department are two-fold: to provide trained engineers to work in the various areas of the civil engineering profession and to provide a firm foundation for graduate study.

To accomplish these ends, analysis and design courses in the fields of hydraulic, structural, transportation and sanitary engineering are offered in addition to preparatory courses in sciences and basic mechanics. A broad base of theory is provided along with sufficient quantity of current practices of the profession.

Degree Offered

Bachelor of Science in Civil Engineering

General Program Requirements

Students in civil engineering must satisfy core curriculum requirements of the University given on page 24 and those of the School of Engineering.

Departmental Requirements

BACHELOR OF SCIENCE IN CIVIL ENGINEERING—In this degree program a total of 212 credits are required. Technical or nontechnical electives may be substituted for CE 400, 401, or 462, with the approval of the adviser. In special cases qualified students may substitute equivalent or more advanced courses for those listed with the approval of the adviser.

- CE 103 Plane Surveying** 3 credits
Introduction to plane surveying, including the use of surveying instruments, methods of computing traverses and their adjustment. Two lecture and four laboratory hours per week. Prerequisite: Mt 110.
- CE 121 Engineering Problems I** 1 credit
(101) Introduction to methods of attacking, analyzing and solving engineering problems; use of slide rule and the other engineering tools. One two-hour class session per week. Prerequisite: Mt 110.

Civil Engineering

Edward J. Baldinger, M.S., Head

Bachelor of Science in Civil Engineering

Freshman year

Civil Engineering 103, 121, 122, 123	6 hours
English 110, 160	8 hours
Mathematics 111, 114, 131, 132	17 hours
Mechanical Engineering 111, 112	6 hours
Philosophy 125, 150	8 hours
Physics 200	5 hours

Sophomore year

Civil Engineering 201, 202, 321, 351	15 hours
Mathematics 231, 232, 241	12 hours
Mechanical Engineering 271, 281	8 hours
Philosophy 175	4 hours
Physics 201, 202	10 hours
Theology 120	4 hours

Junior year

Chemistry 314, 315	8 hours
Civil Engineering 323, 331, 333, 335, 341, 343, 353	24 hours
Electrical Engineering 251, 253	8 hours
Philosophy 225	4 hours
Theology 220, 320, 420	12 hours

Senior year

Civil Engineering 400, 401, 407, 431, 433, 460, 461, 462, 498	29 hours
English core elective	4 hours
History 101, 102, 103	12 hours
Mechanical Engineering 321	4 hours
Philosophy 250	4 hours

Total 212 hours

Civil Engineering Courses

- CE 122 Engineering Problems II** 1 credit
(101) Application of the fundamental laws of physics and mathematics to solution of simple engineering problems in kinetics and statics of mechanics. One two-hour class session per week. Prerequisite: CE 121.
- CE 123 Engineering Problems III** 1 credit
(101) Elementary problems in mechanics, graphical solutions. One two-hour class session per week. Prerequisite: CE 122.

- CE 201 Advanced Surveying 4 credits**
(103) U. S. public land system, rural and urban surveying; precise leveling and triangulation; theory of errors and adjustments; engineering astronomy for determination of position, meridian, latitude and time; application of electronic digital computer to surveying problems. Three lecture and four laboratory hours per week. Prerequisite: CE 103.
- CE 202 Route Surveying 4 credits**
Theory of circular horizontal curves, transition curves and vertical curves; calculation of earthwork and mass diagram; application to highways, railroads, pipelines and power lines; application of electronic digital computers. Three lecture and four laboratory hours per week. Prerequisite: CE 103.
- CE 321 Strength of Materials I 4 credits**
Study of stress-strain relationships in tension, compression, bending and torsion; analysis of beams; shear and moment diagrams, beam deflections; further application to thin-walled cylinders and members loaded axially by thermal expansion; laboratory experiments in tension, torsion, bending, calibrations. One four-hour lab per week. Prerequisite: ME 271.
- CE 323 Strength of Materials II 4 credits**
Study of statically indeterminate beams, columns with axial and eccentric loads, combined stresses and strains including use of Mohr's circle, fatigue and non-homogeneous beams; use of mechanical and electrical devices for strain measurements; Castigliano's Theorem. Laboratory experiments correlated to subject matter. One two-hour lab per week. Prerequisite: ME 271.
- CE 331 Fluid Mechanics I 3 credits**
An introduction to fluid mechanics, including fluid properties, the continuity equation, stream functions and stream lines; Euler's equation for an ideal fluid, rotational and irrotational flow concepts; development and application of the Navier-Stokes equations, the energy and momentum equations; laminar and turbulent flow and an introduction to boundary layer theory, similarity parameters and dimensional analysis; vector and Cartesian tensor notation. Three lecture hours per week. Prerequisites: ME 281, Mt 232.
- CE 333 Fluid Mechanics II 3 credits**
Application of boundary layer theory to fluid flow, including a study of flow development; analysis of potential flow, open channel flow and an introduction to the theory of hydraulic machinery. Theory verified in laboratory study. One four-hour lab per week. Prerequisite: CE 331.
- CE 335 Hydraulic Application 3 credits**
Pipe-line and open channel analysis and elements of economical penstock design; hydrology, flood routing, spillway design and back water analysis; basic aspects of engineering similitude and model analysis; problems in surge water hammer and pressure waves. Three lecture hours per week. Prerequisite: CE 322.
- CE 341 Structural Analysis 4 credits**
Lectures and design laboratory treating statically determinate structures such as roofs and bridges; consideration of loads, reactions, moments, and stresses; algebraic and graphic methods. Three lecture hours per week. Prerequisite: CE 321.
- CE 343 Statically Indeterminate Structures 4 credits**
Slope and deflection of beams and trusses by elastic-weight and work-energy methods; variable-section beams, rings and elastic arches; slope-deflection and moment-distribution methods of solution. Four hours per week. Prerequisite: CE 341.
- CE 351 Engineering Geology 3 credits**
Elementary study of the material structure and internal condition of the earth and of the physical and chemical processes at work upon and within it as they influence engineering applications. Three lecture hours per week. Prerequisite: Sophomore standing.
- CE 353 Soil Mechanics 4 credits**
Soil as a structural material; physical properties, bearing capacity and current theories of stress distribution of different types of soil; compaction and behavior under short and long duration loading. Three lecture and four laboratory hours per week. Prerequisite: CE 323, 351.
- CE 400 Engineering Economy 3 credits**
Elements of immediate and long-term economy of design and maintenance; interest rates, present worth and prospective return on investment; depreciation and replacement studies. Three lecture hours per week.
- CE 401 Estimates, Contracts and Specifications 3 credits**
The elements of estimating; types and elements of contracts; specifications for material and construction. Three lecture hours per week.
- CE 407 Structural Design 5 credits**
Design of a wide variety of types of structures in steel and wood; structural details. Four lecture hours per week. Prerequisite: CE 343.
- CE 431 Solid and Liquid Waste Management 4 credits**
General principles of refuse and garbage collection and disposal and of sewage collection and treatment; physical, chemical and biochemical operations or processes of waste treatment; effect of effluents on receiving waters. Four lecture hours per week. Prerequisite: CE 335.
- CE 433 Water Supply and Treatment 3 credits**
Development of surface and subsurface water supplies; analysis of water quality and quantity requirements; determination of quantity and types of storage; design and hydraulic analysis of distribution facilities; fundamentals of water treatment, coagulation, sedimentation, rapid sand filtration and disinfection; analysis of water quality and treatment problem in laboratory. Two lecture and four laboratory hours per week. Prerequisite: CE 431.
- CE 460 Highway Engineering 3 credits**
Survey of the highway transportation field and the factors related to the design and construction of highways. Three lecture hours per week.
- CE 461 Reinforced Concrete I 4 credits**
Design of simply reinforced concrete beams, slabs, columns and footings; design of concrete mixes, together with methods of estimating volumes and cost of reinforced concrete structures. Three lecture and four laboratory hours per week. Prerequisite: CE 321, 341.

- CE 462 Reinforced Concrete II** **3 credits**
 Application of the elementary concepts of concrete design introduced in CE 461 to the design of retaining walls, footings, one-way slabs, two-way slabs, flat slabs and rigid frames; elementary concepts of ultimate-strength theory of design and prestressed concrete. Three lecture hours per week. Prerequisite: CE 461.
- CE 495 Advance Studies** **2-5 credits**
 Independent study or research under the direction of a member of the faculty, to be carried out in

one specific area of civil engineering: H—fluid mechanics; ST—structures; S—soils; R—highways; W—sanitary engineering. Prerequisite: Senior standing.

- CE 498 Seminar** **2 credits**
 Each student is required to prepare a technical paper and to present it orally to the class. Prerequisite: Senior standing.
- CE 499 Thesis** **2 credits**
 Problem in analysis or design at the level of undergraduate research. Prerequisite: Senior standing.

Objectives

Electrical engineering deals with the applications of electricity to the generation, transmission, distribution and utilization of electric power, to measurement, to control, to computation and to communication by wire and electromagnetic waves.

The specific objective of the department does not provide for undergraduate specialization in various fields but strives to provide a broad foundation based on mathematical and scientific principles that will prepare the graduate to take his place in any of the various fields of study.

The curriculum includes material in networks, electronics, radio, communication, and power apparatus and systems. Hence the student interested in electronics, in automatic control, or in any other specialty is given adequate scientific training in a well-balanced educational program.

Degrees Offered

Bachelor of Science in Electrical Engineering
 Master of Science in Electrical Engineering (evening classes only)

General Program Requirements

Students in electrical engineering must satisfy core curriculum requirements of the University given on page 24 and those of the School of Engineering.

Departmental Requirements

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING—
 In this program a total of 205 credits is required for the degree as listed in the following outline. Students exempted from the theology requirements will substitute electives from the humanities or commerce and finance courses, as approved by the department. In special cases, qualified students, with the approval of the department, may substitute equivalent or more advanced courses in place of those listed. As an example of the foregoing, qualified students may be allowed to substitute advanced courses in nuclear physics for regular electrical engineering courses.

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING —
 All graduate students must follow the requirements of the Graduate School as detailed under the Graduate School Bulletin of Information. Attention is here directed to some special procedures regarding graduate electrical engineering students.

Electrical Engineering

Francis P. Wood, S.J., M.S., *Head*

- (a) Graduate students in electrical engineering, with departmental approval, may substitute for their thesis additional course work, including three credits of EE 582.
- (b) All graduate students must successfully pass a written qualifying examination based on undergraduate mathematics and engineering courses. This examination should be taken as early as possible during the program. If needed, a second sitting will be permitted.
- (c) All graduate electrical engineering students must complete the following required courses: Mt 461, 462, 463, EE 507, 511, 512, 517.
- (d) Graduate credit may be allowed for the following undergraduate courses: EE 481, 483, 485, 487.
- (e) Unclassified fifth year students may be allowed to take only the following courses: Mt 461, 462, EE 511, 512, 513, 517.

Bachelor of Science in Electrical Engineering

Freshman year

Civil Engineering 121, 122, 123	3 hours
English 110, 160	8 hours
Mathematics 111, 114, 131, 132	17 hours
Mechanical Engineering 111	3 hours
Philosophy 125, 150, 175	12 hours
Physics 200	5 hours
Theology 120	4 hours

Sophomore year

Electrical Engineering 251, 253	8 hours
English core elective	4 hours
Mathematics 231, 232, 241	12 hours
Mechanical Engineering 271, 281	8 hours
Physics 201, 202	10 hours
Theology 220, 320	8 hours

Junior year

Chemistry 314, 315	8 hours
Electrical Engineering 254, 311, 321, 323, 351, 353, 355, 371, 373, 374	28 hours
Physics 320, 360, 361	13 hours
Theology 420	4 hours

Senior year

Electrical Engineering 356, 411, 421, 431, 433, 434, electives	30 hours
History 101, 102, 103	12 hours
Philosophy 225, 250	8 hours

Total 205 hours

Electrical Engineering Courses

- EE 251 Electric Circuits I** 4 credits
EE 253 Electric Circuits II 4 credits
(241) Fundamental concepts and units; energy and
(243) power; Kirchhoff's laws; nodal and mesh analysis;
(245) network theorems; complex algebra; sinusoidal
steady-state solutions; coupled circuits and trans-
formers; Fourier series and Fourier integral; tran-
sient response and Laplace transformation; poly-
phase circuits. Three lecture hours and one two-
hour quiz session per week. Prerequisites: Ph 200
for EE 251; EE 251 for 253.
- EE 254 Electric Circuits Laboratory** 2 credits
(246) Experiments on material of EE 251 and EE 253.
One lecture and one four-hour laboratory per
week. Prerequisite: EE 253.
- EE 311 Seminar** 0 credits
Attendance required for junior year Electrical
Engineering students.
- EE 321 Linear Systems I** 3 credits
Laplace transform techniques; functions in the
complex frequency plane; analytic functions; the
complex inversion integral; expansion of functions
in series; inversion integral evaluation by residues;
conformal field mapping. Three lecture hours per
week. Prerequisite: Mt 341. Corequisite: EE 243.
- EE 323 Linear Systems II** 4 credits
Application of the frequency plane analysis to
electronic networks and filter networks; introduc-
tion to non-linear analysis; introduction to network
synthesis. Three lecture hours and one two-hour
quiz session per week. Prerequisite: EE 321.
- EE 351 Elementary Electromagnetic Fields** 4 credits
Vector analysis; Gauss' theorem; curl; Stokes' the-
orem; scalar potential; vector potential; the electro-
static field; electric current; the magnetic field;
Maxwell's hypothesis; plane waves. Three lecture
hours and one two-hour quiz session per week.
Prerequisites: Ph 201, Mt 232.
- EE 353 Electromagnetic Fields and Lines** 3 credits
Lumped circuit and field concepts; quasi-static
fields and distributed circuits; steady-state waves
on lossless transmission lines; transient waves on
lossless transmission lines; traveling waves on dis-
sipative transmission lines. Three lecture hours per
week. Prerequisites: EE 321, 351.
- EE 355 Advanced Electromagnetic Fields** 4 credits
(471) Natural Oscillations; standing waves; resonance;
waves in lossless media; waves in dissipative
media; guided waves; elements of radiation. Three
lecture hours and one two-hour quiz session per
week. Prerequisite: EE 353.
- EE 356 Electromagnetic Fields Laboratory** 2 credits
(354) Experiments on material of EE 351, EE 353 and
EE 355. One lecture and one four-hour laboratory
per week. Prerequisite: EE 355.
- EE 361 Special Studies in
Electrical Engineering** 1-3 credits
Special studies for qualified students, under the
direction of a faculty member. A written report
will be required. By arrangement with the depart-
ment.
- EE 371 Electronics I** 3 credits
Fundamental electrical properties of semiconductor
diodes and transistors; vacuum and gas tubes and
other basic electron devices; model approxima-
tions; biasing; applications of electron devices in
simple rectifier and amplifier circuits. Three lec-
ture hours per week. Prerequisites: EE 253, 254.
- EE 373 Electronics II** 3 credits
(421) Applications of transistors and vacuum tubes in
practical amplifiers; broadband small-signal and
power amplifiers; tuned amplifiers in linear and
large-signal ranges; amplifiers employing feedback.
Three lecture hours per week. Prerequisites: EE
321, 371.
- EE 374 Basic Electronics Laboratory** 2 credits
(422) Laboratory problems based on characteristics of
fundamental electron devices and simple amplifier
and rectifier circuits. Based on material of EE 371.
One lecture and one four-hour laboratory per
week. Prerequisites: EE 254, 371.
- EE 411 Seminar** 2 credits
Each student is required to prepare a technical
paper and to present it orally to the class. Pre-
requisite: Senior standing in Electrical Engineer-
ing.
- EE 421 Electronics III** 3 credits
(423) Oscillators employing electron devices; electronic
power supplies and measurement circuits; introduc-
tion to amplitude, and frequency and phase mod-
ulation concepts and a study of basic modulators
and demodulators and simple communication sys-
tems. Three lecture hours per week. Prerequisite:
EE 373.
- EE 423 Electronics IV** 3 credits
(425) Non-linear electron device applications. Wave-
shaping, clipping, limiting, gating, dc-restoring
circuits; waveform and sweep generation, trigger
and switching circuits; bistable, monostable and
astable multivibrators; basic counting and digital
computer circuits. Three lecture hours per week.
Prerequisite: EE 421.
- EE 424 Advanced Electronics Laboratory** 2 credits
Laboratory problems demonstrating applications
of electron devices in tuned and broadband am-
plifiers, power amplifiers, oscillators; sweep gen-
erators and multivibrators. One lecture and one
four-hour laboratory per week. Prerequisites: EE
373, 421.
- EE 431 Electromechanical
Energy Conversion I** 4 credits
**EE 433 Electromechanical
Energy Conversion II** 4 credits
Electromechanical energy conversion principles;
transformers, rotating machines, electromechanical
energy conversion devices such as electro-magnets,
loud speakers. Three lectures and one two-hour
quiz session each week. Prerequisites: EE 323,
ME 281; EE 431 for 433.
- EE 434 Electromechanical Energy
Conversion Laboratory** 2 credits
Experiments based on material of EE 431 and
EE 433. One lecture and one four-hour laboratory
per week. Corequisite: EE 433.

EE 461 Control Systems **3 credits**
Analysis and design of closed-loop control systems with emphasis on stability and transient response using Nyquist, Bode and s-plane analysis. Three lecture hours per week. Prerequisites: EE 323, 433, 434.

EE 462 Systems Laboratory **2 credits**
A comprehensive systems laboratory utilizing components from electronics, energy conversion devices, filters and magnetics; emphasis on integration of components into a complete system. One lecture and one four-hour laboratory per week. Prerequisites: EE 374, 421 and 461 (concurrently).

EE 481 Solid State Theory **4 credits**
Review of elementary quantum physics; energy bands and carrier statistics; theory of junction devices; periodic structures and energy bands; transport theory; semiconductor parameters. Three lecture and one two-hour quiz session per week. Prerequisites: Ph 361, EE 355, 421.

EE 483 Non-Linear Analysis **4 credits**
An introductory course treating numerical, graphical and analytical solutions; analysis of singular points, differential-difference equations. Three lecture and one two-hour quiz session per week. Prerequisites: EE 321, Mt 341.

EE 485 Modulation and Noise **4 credits**
Signal transmission through electrical networks; amplitude modulation; phase modulation; frequency modulation; periodic sampling and pulse modulation; characterization of noise; noise sources; effects of noise on electronic systems; comparative analysis of information transmission systems. Three lecture and one two-hour quiz session per week. Prerequisites: EE 321, 421.

EE 487 Pulse and Digital Circuits **4 credits**
Relationships between pulse shape and transmission characteristics of systems; pulse amplifiers and shapers; timing circuits; counters and registers; Boolean Algebra; digital computer circuits; memory devices. Three lecture and one two-hour quiz session per week. Prerequisite: EE 425.

EE 489 Special Topics **1-4 credits**

EE 490 Special Topics **1-4 credits**
Current topics in Electrical Engineering not normally covered in the undergraduate curriculum. Prerequisite: Senior standing.

Graduate Courses

EE 501 Control Systems I **3 credits**
A broad coverage of the analysis and design of linear systems; a review of mathematical tools including Laplace transforms, block diagrams and signal flow graphs; performance criteria; stability criteria including Nyquist, Bode, s-plane and root locus methods; statistical design. Prerequisites: EE 323, EE 461 or equivalent.

EE 502 Control Systems II **3 credits**
A continuation of EE 501: a continuation of statistical design; non-linear system analysis and design including describing functions, phase-plane and state-space methods. Prerequisite: EE 501.

EE 503 Control Systems III **3 credits**
A continuation of EE 502: sampled-data systems and z-transform theory; an introduction to optimal and adaptive systems. Prerequisite: EE 502.

EE 507 Introduction to Engineering Analysis **3 credits**
Matrices, determinants, integral solution of boundary value problems, approximate evaluation of integrals, sampling theorem, introduction to probability; set theory, set functions, probability measure, probability distributions, joint and conditional probability, random variables and functions, error analysis in engineering measurements. Prerequisite: Mt 461 or permission.

EE 508 Engineering Analysis II **3 credits**
Spectral analysis, correlation, autocorrelation, moments and statistical averaging, characteristic functions, noise generation in electronic components, treatment of noise in electronic systems, fundamental concepts of information transmission, Shannon's theorem and channel capacity. Prerequisite: EE 507.

EE 511 Advanced Networks I **3 credits**
Basic network analysis concepts: matrix representation of network functions for n-port and n-terminal networks, terminated and combined networks, basic network topology and solution techniques, recognition and synthesis of simple driving-point functions. Prerequisite: Graduate standing.

EE 512 Advanced Networks II **3 credits**
Fundamentals of network synthesis; mathematical techniques of synthesis, positive real functions and matrices, realizability conditions, realization of driving-point functions for two-element-kind networks. Prerequisite: EE 511.

EE 513 Advanced Networks III **3 credits**
Synthesis of general driving-point functions; methods of approximation, Butterworth, Bessell, Chebyshev polynomials applied to filter design; transfer function synthesis, elements of time-domain synthesis. Prerequisite: EE 512.

EE 515 Physical Electronics I **3 credits**
Atomic structure and introduction to quantum mechanics, electronic conduction in solids, electron emission, semi-conductor devices, conduction in vacuum and gas, plasmas and media breakdown. Prerequisite: Graduate standing.

EE 516 Physical Electronics II **3 credits**
Dielectric and optical properties of insulators, ferroelectrics, diamagnetism, paramagnetism, ferromagnetism, antiferromagnetism, ferrimagnetism, relaxation and resonance phenomena. Prerequisite: EE 515 or permission.

EE 517 Electromagnetic Fields **3 credits**
Fundamental concepts: Maxwell's equations, generalized currents, energy and power, circuit concepts and elements, boundary conditions. Wave theory: scalar wave equation, waves in dielectrics and conductors, boundary effects, waveguide and resonator concepts, radiation and antenna concepts. Fundamental source theorems and uniqueness concepts. Construction of solutions by generating function techniques, applications in different geometries.

- EE 521 Mathematical Techniques of Electromagnetic Theory I** 3 credits
- EE 522 Mathematical Techniques of Electromagnetic Theory II** 3 credits
Problems selected from areas of propagation and diffraction of electromagnetic waves of current interest. Wiener-Hopf technique, asymptotic forms, the Sommerfeld problem of the radiation from a short dipole over a conducting earth. Prerequisite: EE 517 for 521; 521 for 522.
- EE 523 Mathematical Techniques of Electromagnetic Theory III** 3 credits
Seminar on mathematical papers in electromagnetic theory in the recent literature which employ modern techniques. Prerequisite: EE 522.
- EE 526 Wave Generation and Shaping** 3 credits
Analysis of active circuits which contain energy storage and significant non-linearities. Applications selected from various circuit design problems as diode wave shaping, logic gates, timing and sweep circuits, memory elements, and oscillators. Emphasis on techniques that are useful for a variety of active elements, vacuum tubes, transistors, various semi-conductor diodes, controlled rectifiers while also considering device limitations. Prerequisite: Graduate standing.
- EE 532 The Theory of Random Signals and Noise** 3 credits
The course includes thorough treatment of smoothing and prediction in optimum linear systems, least-mean-square error criterion, maximizing of signal-to-noise ratio, matched filters, envelope detectors, square-law detectors and optimum time-variable filters. Prerequisite: EE 508.
- EE 535 The Statistical Theory of Signal Detection** 3 credits
The course begins with a review of some basic concepts associated with filters, signals and noise. Next, the statistical detection of signals of known phase and arrival time is studied and followed by an investigation of detection of signals of random phase and arrival time. The concepts of false alarm rate, multiple observation, maximum likelihood ratio, Bayes criterion, Neyman-Bearson criterion, and the theory of estimation will be treated. Prerequisites: Elementary network theory and Mt 462 or equivalent.
- EE 541 Microwave Circuits and Techniques** 3 credits
Microwave circuit theory developed from transmission line viewpoint. Waveguide discontinuities and equivalent circuits, ferrites and crystals as circuit elements. Mathematical techniques, Green's function, variational principle, Ritz method and perturbation developed as they arise. Prerequisite: EE 517.
- EE 543 Antennas and Radio Wave Propagation** 3 credits
Continuation of EE 541 and basic properties of antennas and linear arrays, radio propagation in plasma and atmosphere. Fresnel integrals, saddle point and stationary phase methods. Prerequisite: EE 541.
- EE 545 Microwave Electronics** 3 credits
Electron devices at microwave frequencies; formation and control of electron beams and interaction with time-varying fields, space charge waves, traveling-wave interactions in one-dimensional systems. Basic concepts of klystron and traveling-wave devices. Prerequisite: Graduate standing.
- EE 547 Measurements Laboratory** 3 credits
Selected laboratory problems to illustrate quantitative techniques and precision in electrical measurements with particular emphasis on microwave frequencies. One three-hour laboratory and one and one-half lecture hours per week. Prerequisite: Graduate standing.
- EE 580 Special Studies in Electrical Engineering** 3 credits
- EE 581 Special Studies in Electrical Engineering** 3 credits
Special studies under the direction of a faculty member, for which academic credit may properly be granted. By arrangement.
- EE 582 Special Studies in Electrical Engineering** 3 credits
Special studies under direction of a faculty member. Master candidates who are not writing a thesis must register for this course and submit an acceptable paper.
- EE 590 Master's Thesis** 10 credits
Research in electrical engineering culminating in the writing of a thesis. Prerequisite: Admission to candidacy for degree M.S. in E.E.



Mechanical Engineering

Harry Majors, Jr., M.S., Head

Objectives

The mechanical engineer is concerned with the fundamental properties of solids, liquids and gases related to the creative design and manufacture of machines, heat engines, electro-mechanical devices and control systems. He is concerned with the broad area of energy conversion as related to the design of machines. This requires working with the processes of combustion, nuclear and chemical reactions, solar radiations, propulsion systems for sea, land and space and all types of materials under a vast array of conditions.

A mechanical engineer may enter positions in research and development, design engineering, salesmanship, and, with experience, executive positions in industry.

Degrees Offered

Bachelor of Science in Mechanical Engineering
Master of Science in Mechanical Engineering (evening classes only)

General Program Requirements

Students in mechanical engineering must satisfy core curriculum requirements of the University given on page 24 of this bulletin and those of the School of Engineering.

Departmental Requirements

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING—In this program a total of 211 hours is required for the degree. In special cases, qualified students with the approval of the major department may substitute equivalent or more advanced courses for those listed in the curriculum.

NUCLEAR ENGINEERING OPTION—Students who desire to work in the field of nuclear engineering or to pursue graduate study in that area may with the permission of the head of the department substitute appropriate undergraduate courses in physics

for some of the required mechanical engineering courses.

MASTER OF SCIENCE IN MECHANICAL ENGINEERING—Graduate students in mechanical engineering will find specific requirements in the introductory section of the School of Engineering and also under the Graduate School.

Bachelor of Science in Mechanical Engineering

Freshman year

Civil Engineering 121, 122, 123	3 hours
English 110, 160 and core elective	12 hours
Mathematics 111, 131, 132	14 hours
Mechanical Engineering 111, 112	6 hours
Philosophy 125, 150, 175	12 hours
Physics 200	5 hours

Sophomore year

Civil Engineering 321	4 hours
Electrical Engineering 251	4 hours
Mathematics 231, 232, 241	12 hours
Mechanical Engineering 269, 270, 271, 281, 291	13 hours
Philosophy 225	4 hours
Physics 201, 202	10 hours
Theology 120, 220	8 hours

Junior year

Chemistry 314, 315	8 hours
Civil Engineering 323, 331, 333	10 hours
Electrical Engineering 253, 254	6 hours
History 101, 102, 103	12 hours
Mathematics 114	3 hours
Mechanical Engineering 321, 322, 371, 380	15 hours

Senior year

Mechanical Engineering 425, 426, 430, 431, 472, 473, 481, 484, 485, 496, 497, 498	38 hours
Philosophy 250	4 hours
Theology 320, 420	8 hours

Total.....211 hours

Mechanical Engineering Courses

- ME 111 Engineering Drawing I** **3 credits**
Development of the theory of projection as applied to orthographic, oblique and perspective drawing forms; emphasis on freehand and instrument drawing, lettering; introduction to procedures in writing the graphic language for use in engineering. Six laboratory hours per week.
- ME 112 Engineering Drawing II** **3 credits**
(113) Abstract space problems; introduction to alignment charts graphical calculus and empirical equations; use of freehand sketching techniques and an understanding of the role of graphics as a way of communicating. Six laboratory hours per week. Prerequisites: ME 111, CE 121.
- ME 269 Production Processes I** **1 credit**
ME 270 Production Processes II **1 credit**
A study of the processes used in forming and shaping engineering materials; lectures, demonstrations and laboratory work on machining processes. One

- lecture and three laboratory hours per week. Prerequisite: Sophomore standing, ME 269 for 270.
- ME 271 Mechanics I, Statics** **4 credits**
Principles of statics with application to elementary machine design and structural problems; composition and resolution of force systems; theory of static equilibrium, work-energy methods; principle of virtual work; mass centers, centers of gravity and centroids; area moments and products of inertia; Mohr's circle; applications to fluid statics, friction in machine elements, trusses and beams; introduction to deformable bodies; methods of vector algebra. Three lectures and one two-hour problem session per week. Prerequisites: ME 112, Ph 200. Corequisite: Mt 231.
- ME 281 Mechanics II, Dynamics** **4 credits**
Principles of dynamics; the kinematics and kinetics of a particle, system of particles and rigid bodies; relative motion, the equations of motion, impulse-

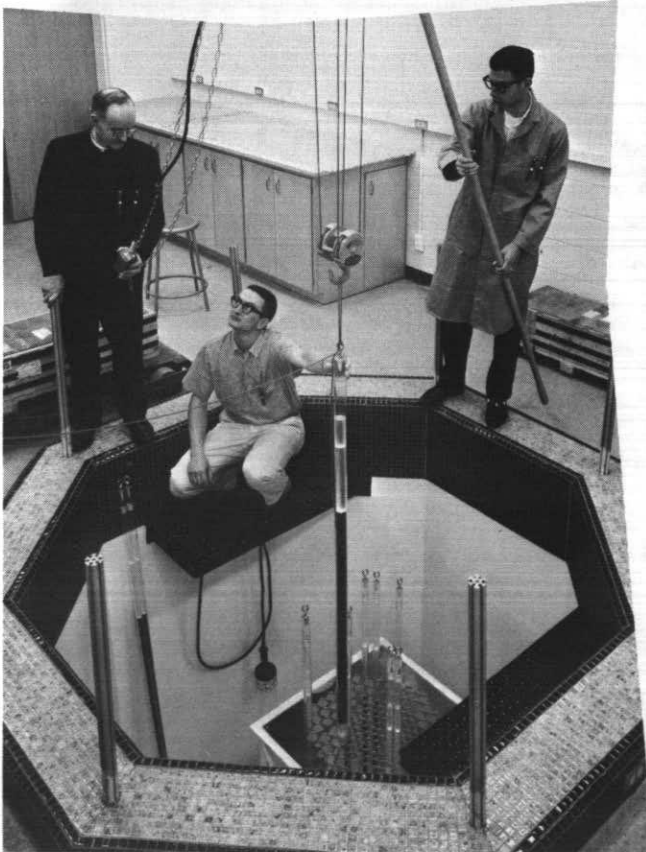
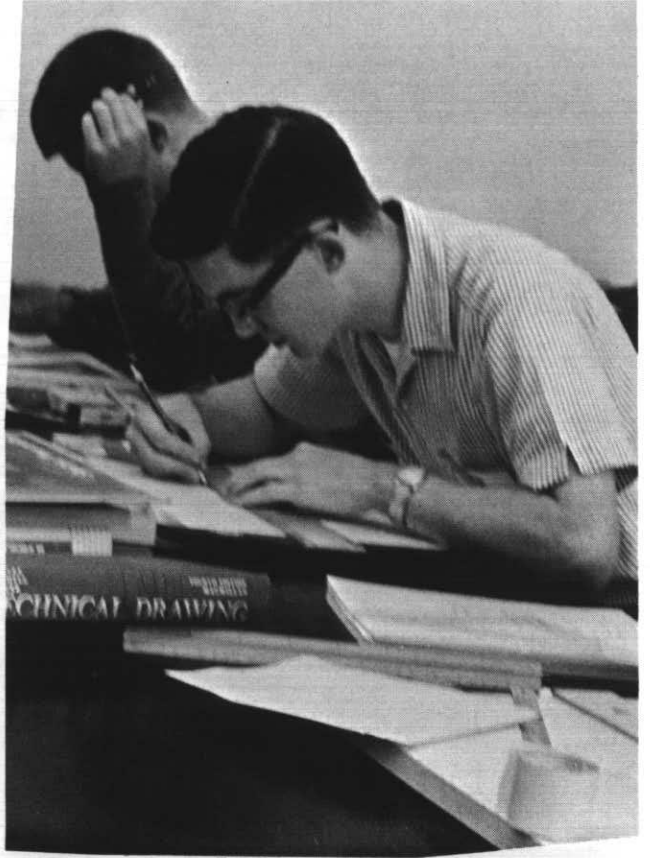
momentum and work-energy; conservative force fields and potential energy; the inertia tensor, principal axes and moments of inertia; Euler's equations of motion of a rigid body, Euler's angles, Lagrange's equations; methods of vector calculus. Applications will be drawn from mechanical vibrations planetary and satellite motion, rocket and jet propulsion and the symmetrical gyroscope. Three lecture and one two-hour problem session per week. Prerequisite: ME 271. Corequisite: Mt 232.

- ME 291 Mechanics III, Dynamical Analysis 3 credits**
Application of first principles of the kinematic analysis of mechanisms and the dynamic analysis of machines; rolling and sliding bodies in contact, mechanism trains, linkages and principles of dynamic balancing; introduction to kinematic synthesis. Three lectures per week. Prerequisite: ME 281. Corequisite: Mt 341.
- ME 321 Engineering Thermodynamics I 4 credits**
Heat, work, the laws of thermodynamics; entropy and absolute temperature; properties of liquids, vapors, perfect gases and mixtures of gases and vapors; application to heat cycles. Four lecture hours per week. Prerequisites: CE 331, Mt 341, Ph 202.
- ME 322 Engineering Thermodynamics II 4 credits**
Equations of state, thermodynamic relations, study of processes and cycles; flow of fluids, heat transfer, chemical reactions, combustion, equilibrium. Four lecture hours per week. Prerequisite: ME 322.
- ME 371 Machine Design I 4 credits**
Relation of engineering fundamentals and properties of materials to the design, layout and details of specific machines; computation techniques and use of digital and analogue computers. Four lecture hours per week. Prerequisites: ME 291, CE 323, 333.
- ME 380 Heat and Mass Transfer I 3 credits**
Introduction to the theory of heat flow by conduction; convection and radiation; dimensional analysis. Three lecture hours per week. Prerequisites: ME 321, CE 333.
- ME 425 Power Plants I 4 credits**
Application of thermodynamic theory and heat transfer to the economic design of modern central station power plants and auxiliaries. Three lecture and four laboratory hours per week. Prerequisites: ME 481, 322.
- ME 426 Power Plants II 4 credits**
Thermodynamic analysis of internal combustion engines and rotating machinery. Three lecture and four laboratory hours per week. Prerequisite: ME 425.
- ME 427 Power Plants III 4 credits**
Propulsion systems. Three lecture and four laboratory hours per week. Prerequisite: ME 426.
- ME 428 Environmental Engineering 4 credits**
Man-machine systems; psychological and physiological principles of the interrelation between a human and his surroundings; environmental requirements for equipment and human habitation; engineer's approach to the multi-disciplinary aspects of environmental control. Three lecture and four laboratory hours per week. Prerequisite: ME 426.
- ME 430 Principles and Properties of (330) Materials I 3 credits (331)**
Stoichiometric relations, reactive systems introduction to homogeneous equilibrium; theories of bonding as related to the physical, mechanical, electrical and chemical properties of metals, ceramics and organic materials. Three lecture hours per week. Prerequisites: Ch 312, 315, ME 322.
- ME 431 Principles and Properties of (332) Materials II 4 credits**
Elastic and plastic deformation; multiphase materials; equilibrium relations and phase diagrams; reactions in the solid state; isothermal transformation curve, microstructure related to properties; corrosion. Three lecture and four laboratory hours per week. Prerequisite: ME 430.
- ME 432 Principles and Properties of Materials III 4 credits**
Emphasis on the metallic state. Imperfections in crystalline phases; kinetics of nucleation, diffusion and phase transformations; quench aging and strain aging; engineering alloy systems; heat treatment and hardenability. Three lecture and four laboratory hours per week. Prerequisite: ME 431.
- ME 472 Machine Design II 4 credits**
Emphasis upon philosophy of design, a creative approach, and a comprehensive design project. An introduction to other aspects of design such as planning, organizing, leading an engineering project, exercising judgment and considering economic factors. Four lecture hours per week. Prerequisite: ME 371.
- ME 473 Machine Design III 4 credits**
Instruction and experience in the integrated aspects of creative design and analysis; case studies; design of a novel device or systems; electro-mechanical systems; hydraulic and pneumatic systems; energy conversion. Four lecture hours per week. Prerequisite: ME 472.
- ME 474 Machine Design IV 4 credits**
Project work. Prerequisite: ME 473.
- ME 477 Experimental Mechanics 3 credits**
Study of experimental methods; instrumentation; use of sensing devices; measurements by means of mechanical, electrical, magnetic and optical methods; control systems; vibrations; shock and impact measurements; emphasis on the interpretation of results. Two lecture and four laboratory hours per week. Prerequisites: CE 333, ME 371.
- ME 478 Compressible Flow I 3 credits**
Review of concepts of fluid dynamics and thermodynamics; introduction to the concepts of compressible flow; one-dimensional gas dynamics including flow in nozzles and diffusers, normal shocks, frictional flows and flows with heat transfer and energy release. Three lecture hours per week. Prerequisites: CE 333, ME 322.
- ME 481 Heat and Mass Transfer II 4 credits (431) (481)**
Use of analogue and digital computer; numerical methods; mass transfer; diffusion. Three lecture and four laboratory hours per week. Prerequisite: ME 380.
- ME 484 Linear Systems Analysis 4 credits (324) (484)**
Application of Laplace transforms to linear systems. Three lecture and four laboratory hours per week. Prerequisites: ME 322, 371, CE 333.

- ME 485 Control Systems I** 4 credits
Analysis and design of linear control systems with emphasis on transient and frequency response. Three lecture and four laboratory hours per week. Prerequisite: ME 484.
- ME 491 Special Studies in Mechanical Engineering** 2-4 credits
- ME 492 Special Studies in Mechanical Engineering** 2-4 credits
- ME 493 Special Studies in Mechanical Engineering** 2-4 credits
Selected subjects of current interest in mechanical engineering. Assigned reading and/or experiments will be arranged on an individual basis in consultation with the instructor. Written report and oral delivery are required. Prerequisite: Senior standing.
- ME 496 Seminar** 1 credit
- ME 497 Seminar** 1 credit
- ME 498 Seminar** 1 credit
Prerequisite: Senior standing.
- ME 499 Thesis** 2 credits
In special cases a thesis may be substituted in place of seminar with the approval of the department head. Prerequisite: Senior standing.

Graduate Courses

- ME 521 Advanced Fluid Mechanics I** 3 credits
Incompressible flow; continuity and equations of motion; irrotationality; velocity potential and stream function; sources, sinks, vortex flow; speed of sound. Prerequisites: Graduate standing and an undergraduate course in Fluid Mechanics (such as CE 303).
- ME 522 Advanced Fluid Mechanics II** 3 credits
Compressible flow continued; one-dimensional flow; wave propagation; oblique shock waves; flow in ducts and wind tunnels; two-dimensional flow; small-perturbation theory; airfoils; Prandtl-Glauert rules. Prerequisite: ME 521.
- ME 523 Advanced Fluid Mechanics III** 3 credits
Topics in two-dimensional compressible flow; methods of characteristics; effects of friction and conductivity; boundary layer theory; unsteady flow. Prerequisite: ME 522.
- ME 531 Elasticity and Mechanics of Materials I** 3 credits
Mathematical theory of elasticity; stress and strain tensor; Hooke's generalized law; experimental techniques; stress concentration; strain energy methods.
- ME 532 Elasticity and Mechanics of Materials II** 3 credits
Applications of theory to beams, wedges, disks and curved bars; photo-elasticity; strain energy methods; rotating parts. Prerequisite: ME 531.
- ME 533 Elasticity and Mechanics of Materials III** 3 credits
Failure theories; brittle fracture; introduction to the laws of plasticity; comparison of plasticity theory with elasticity; introduction to elastic stability. Prerequisite: ME 532.
- ME 534 Elasticity and Mechanics of Materials IV** 3 credits
Elastic theory and stability of beams, columns, plates and shells; dynamic loads on structures. Prerequisite: ME 533.
- ME 535 Elasticity and Mechanics of Materials V** 3 credits
Plastic buckling; numerical methods. Prerequisite: ME 534.
- ME 541 Heat Transfer I** 3 credits
- ME 542 Heat Transfer II** 3 credits
Mathematical theory of heat conduction in one, two and three dimensions; unsteady state; fundamentals of convection; heat transfer by radiation. Prerequisites: ME 523 for 541, 541 for 542.
- ME 543 Heat Transfer III** 3 credits
Heat transfer with change in phase; interrelationship between flow of heat and fluids; mass transfer; extreme temperatures and pressures; high-speed air flow. Prerequisite: ME 542.
- ME 551 Thermodynamics I** 3 credits
Review of thermodynamic relations; kinetic theory of an ideal gas; distribution of molecular velocities; introduction to statistical thermodynamics; probability. Prerequisite: ME 523.
- ME 552 Thermodynamics II** 3 credits
Maxwell-Boltzman statistics; quantum mechanics and statistics; partition functions and relationship to thermodynamic properties. Prerequisite: ME 551.
- ME 553 Thermodynamics III** 3 credits
Spectroscopic measurements; specific heat of gases; compressed gases and liquids; the solid phase; chemical systems; fluctuations; irreversible processes. Prerequisite: ME 552.
- ME 561 Dynamics I** 3 credits
Review of the foundations of classical mechanics; Hamilton's principle; Lagrange's equation of motion; vibration problems in engineering; numerical procedures.
- ME 562 Dynamics II** 3 credits
Vibration problem in engineering; gyroscopic action; equivalent systems; theory of measurements; numerical procedures. Prerequisite: ME 561.
- ME 563 Dynamics III** 3 credits
Propagation of waves in solids; instrumentation for studies in dynamics; numerical procedures; non-linear systems. Prerequisite: ME 562.
- ME 580 Special Studies in Mechanical Engineering** 1-3 credits
- ME 581 Special Studies in Mechanical Engineering** 1-3 credits
Special studies, under the direction of a faculty member, for which academic credit may be properly granted. By arrangement.
- ME 582 Special Studies in Mechanical Engineering** 3 credits
Special studies under direction of a faculty member. Master's degree candidates who are not writing a thesis must register for this course and submit an acceptable paper.
- ME 590 Master's Thesis** 10 credits
Research in mechanical engineering or applied mechanics culminating in the writing of a thesis. Prerequisite: Admission to candidacy for the Master of Science in Mechanical Engineering.





NURSING

School of Nursing

Sister Mary Ruth, O.P., M.Ed., Dean

Objectives

The aim of Seattle University's School of Nursing is to provide the educational preparation for the professional nurse who appreciates both the heritage and responsibilities in nursing and her role in the community; is able to apply to patient care the basic facts and principles of the humanities, the natural and social sciences and upholds the ethical principles of Christianity; is able to assume nursing responsibility for the promotion, maintenance and restoration of health.

Accreditation

National League for Nursing

Organization

The School of Nursing is formally organized within the University structure but is under the direction of its own dean and has a separate faculty. The School is a distinct and independent degree recommending unit responsible directly to the Academic Vice President of the University.

Admission Requirements

High school graduates entering the nursing field and registered nurses who wish to complete requirements for the Bachelor of Science degree in Nursing must meet University entrance requirements described in the admissions section of this bulletin. Additional requirements for registered nurses are:

- Graduation from an approved school of professional nursing
- Current nursing licensure in at least one State or Canadian Province
- Report of complete physical examination within six months before entrance
- Results National League for Nursing Graduate Nurse Examination
- Reference from three former employers

Registered nurses may be granted limited credit for lower division nursing courses completed in an approved nursing program by following Seattle University's procedure for Credit by Examination.

Degree Offered

Bachelor of Science in Nursing

Curriculum

The baccalaureate degree program is designed for high school graduates and registered nurses who wish to complete requirements for the degree. The program is planned to provide the student with a foundation in the liberal arts and to stimulate her to assume responsibility for self-directed education and professional development, and as a basis for graduate education and research.

In the fifth quarter, the student begins the professional portion of the nursing program. Student experience is provided through cooperating teaching units which include Providence Hospital, Mount St. Vincent, Veterans Administration Hospital, Public Health Service Hospital and Children's Orthopedic Hospital. Community nursing practice is provided through selected public health agencies throughout the State. The professional portion of the curriculum includes foundations of nursing, medical-surgical nursing, maternal child nursing, psychiatric nursing, advanced clinical nursing and community health nursing.

General Program Requirements

Students in the School of Nursing must satisfy core curriculum requirements of the University given on page 24 of this bulletin and those of the School which follow. For additional required sequences see the program of study which follows. A minimum of 194 credit hours is required for the Bachelor of Science in Nursing degree.

Living expenses and cost of laboratory tests, X-rays, medications, surgery and hospitalization are the responsibility of the student through the program. Transportation costs to, from and while in cooperating teaching units are the responsibility of the student. A current driver's license and car (covered by insurance as prescribed by the state law) are required for community health nursing, which practice assignment may be anywhere in the State of Washington.

Bachelor of Science in Nursing

Freshman year

Chemistry 101, 102	8 hours
English 110, 160, 170	12 hours
History 101, 102, 103	12 hours
Philosophy 125, 150, 175	12 hours
Theology 120	4 hours

Sophomore year

Biology 200, 210, 220	12 hours
Home Economics 221	2 hours
Nursing 205, 206, 207	10 hours
Philosophy 225	4 hours
Psychology 310	4 hours
Sociology 101	4 hours
Theology 220, 320, 420	12 hours

Junior year

Nursing 305, 306, 315, 316, 325	52 hours
Philosophy 250	4 hours
Psychology 322	4 hours

Senior year

Nursing 405, 406, 407, 415, 416, 430, 431	38 hours
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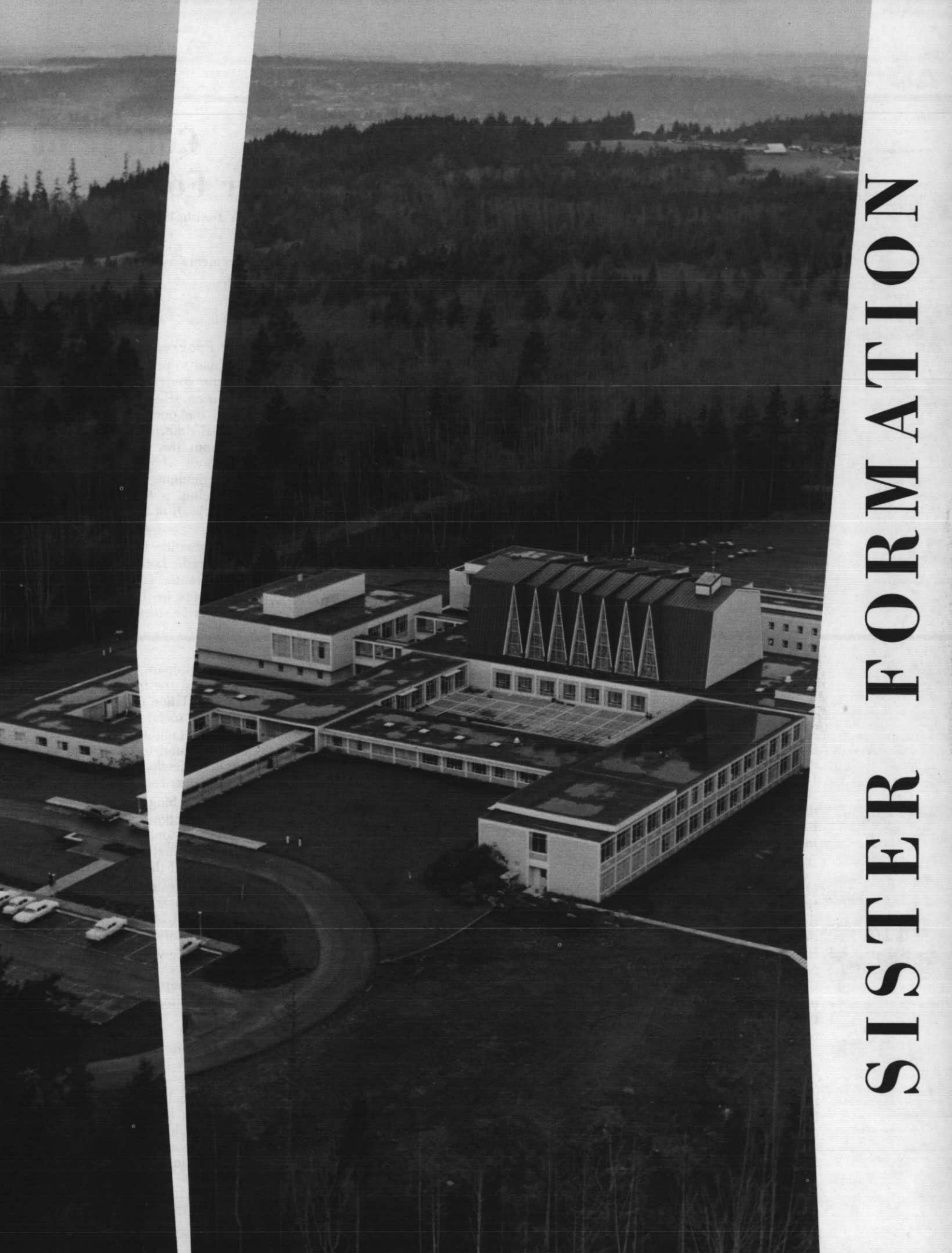
Total 194 hours

Nursing Courses

- N 205 Foundations of Nursing 4 credits**
N 206 Foundations of Nursing 4 credits
(200) Sequential courses in the beginning study of the nurse's role in patient care based on scientific principles. Supervised clinical experience provides for the application of these principles. (First offered winter 1966.)
(201)
(202)
- N 207 Elementary Pharmacology 2 credits**
(203) Study of the basic pharmacological principles, including drugs and solutions. (First offered winter 1966.)
- N 300 Medical and Surgical Nursing 10 credits**
N 301 Medical and Surgical Nursing 10 credits
 Study of pathophysiological conditions of the body. Selected learning experience provided for application of principles in meeting nursing needs of patients. (Last offered winter 1966.)
- N 302 Medical and Surgical Nursing 10 credits**
 Continuation of N 300-301 with increased depth and breadth of nursing knowledge with emphasis on the problem-solving approach to meeting patients' nursing needs. (Last offered winter 1967.)
- N 305 Medical Surgical Nursing 12 credits**
N 306 Medical Surgical Nursing 12 credits
(300) Study of pathophysiological conditions of the body. Selected learning experience provided for application of principles in meeting nursing needs of patients. (First offered fall 1966.)
(301)
(302)
- N 310 Maternal Child Nursing 10 credits**
N 311 Maternal Child Nursing 10 credits
 Study of mother and infant in all phases of the reproductive cycle and of the child in health and disease. Concurrent clinical experience. Prerequisite: N 206. (Last offered winter 1967.)
- N 315 Maternal Child Nursing 12 credits**
N 316 Maternal Child Nursing 12 credits
(310) Study of mother and infant in all phases of the reproductive cycle and of the child in health and disease. Concurrent clinical experience. Prerequisite: N 206 (First offered winter 1967.)
(311)
- N 325 Public Health Organizations and Programs 4 credits**
(435) Study of the fundamental concepts of health and the control of disease as applied to communities, and of the governmental and other organizations and programs, from local to international levels, designed to apply these concepts.
- N 401 Psychiatric Nursing 10 credits**
 Study of psychodynamics and psychopathology with clinical experience in the care of mentally ill patients. Emphasis on communication psychiatric therapies and community mental health trends. Prerequisite: N 302. (Last offered fall 1966.)
- N 405 Psychiatric Nursing 12 credits**
(401) Study of psychodynamics and psychopathology with clinical experience in the care of mentally ill patients. Emphasis on communication, psychiatric therapies and community mental health trends. Prerequisite: N 305. (First offered winter 1967.)
- N 406 Special Topics 2 credits**
N 407 Special Topics 2 credits
- *N 412 Scientific Principles in Nursing Care 3 credits**
 An undergraduate seminar devoted to a critical analysis of nursing situations, with emphasis on the identification and utilization of the inherent social and natural science principles. Concurrent with N 415, 416.
- N 413 Nutrition in Family Health 2 credits**
 Study of normal and therapeutic nutrition in family health. Registered nurses only. (Last offered winter 1966.)
- *N 415 Community Health Nursing Principles 3 credits**
 Concepts and principles of public health nursing used in analyzing and implementing health programs in family and community settings.
- *N 416 Community Health Nursing Practice 5 credits**
 Application of public health principles and skills in family and community health situations. Problem solving and interpersonal relationship skills emphasized. Concurrent with N 415.
- N 420 Professional Development 3 credits**
 Responsibilities of the registered nurse to her profession and community. Study of professional status in relation to legislation, accreditation, organizations, etc. Prerequisite: Senior status. (Last offered summer 1966.)
- N 421 Principles of Administration in Clinical Nursing 10 credits**
 Study of principles of administration in management of nursing care for groups of patients. Emphasis on leadership role of nurse. Concurrent clinical experience. Prerequisite: Senior status. (Last offered summer 1966.)
- N 424 Health Teaching 3 credits**
 Study of nurse's role as health teacher. Emphasis on the learning-teaching situations for patients, families and nursing personnel. Registered nurses only. (Last offered fall 1965.)
- N 430 Advanced Nursing 12 credits**
(302) Management of care for groups of patients with complex nursing problems. Emphasis on leadership role of the nurse. Concurrent clinical experience. Prerequisite: Senior status. (First offered fall 1966.)
(421)
(424)
(432)
- N 431 Special Topics 2 credits**
 Seminars for presentation and discussion of concepts from related disciplines as they influence and apply in nursing. Prerequisite: Senior status (First offered fall 1967.)
- N 432 Principles of Administration 4 credits**
 Study of the principles of administration and supervision as related to clinical nursing. Registered nurses only. (Last offered fall 1965.)
- N 433 Clinical Nursing 6 credits**
 Experience in providing patient care within the total administrative pattern. Emphasis on changing patterns in nursing care. Registered nurses only. (Last offered fall 1965.)

*University of Washington
 *Quoted from: University of Washington Bulletin 1964-65.





SISTER FORMATION

College of Sister Formation

Sister Judith, F.C.S.P., Ph.D., *Dean*

Objectives

The College of Sister Formation, an integral unit of Seattle University, bases its program of studies on the now nationally known Everett Curriculum which has a three-fold objective:

SPIRITUAL—to develop an intellectual grasp of the spiritual life. The theology program is based on the conviction that the spiritual and intellectual life reinforce each other;

INTELLECTUAL—to educate the individual sister for the fullness of human living and to imbue her with a deep love of truth and appreciation of her Christian heritage;

PROFESSIONAL-APOSTOLIC—to give the sister student an understanding of her special role in the Church as a religious dedicated to the works of mercy.

These objectives are sought first through a strong philosophy and theology sequence which serves as a frame of reference for ordering and synthesizing subject matter and provides a foundation for spiritual formation. Secondly, courses in literature, the arts, mathematics, and the biological and physical sciences are of importance as contributing in a special way to the development of the individual as a whole and integrated person and as introducing the student to the various modes of knowing.

A third means of attaining the goal of Sister Formation is a concentration in the social sciences in order that she may approach her apostolic-professional work with a basic and sympathetic understanding of the complexities of human nature and society. Finally, the professional courses taken during the senior year lay the foundation for the particular field in which she will exercise her apostolate. It is here that the sister's vocation will influence the lives of others.

Organization

One of Seattle University's seven major academic units, the College of Sister Formation has a main campus conducted by the Sisters of Charity of Providence at Providence Heights, Issaquah, and cooperating campuses at the novitiate houses of the Sisters of St. Joseph of Newark in Bellingham, of the Sisters of St. Dominic Congregation of St. Thomas Aquinas in Tacoma, and of the Sisters of St. Dominic Congregation of the Holy Cross in Edmonds. The faculty of the college consists of sisters from the four cooperating communities, faculty members from Seattle University's main campus and guest faculty. The student body is comprised of members of the religious communities conducting the four campuses together with guest students from religious communities in Uganda and Peru.

Admission Requirements

Sisters entering the College of Sister Formation fulfill

the same admission requirements as other students applying to Seattle University.

Degree Offered

Bachelor of Arts in Social Science

General Program Requirements

Since the curriculum is planned to provide a basic education common to all the sister students without regard to their apostolic specialization, the students pursue a common program through the postulancy, novitiate, and the juniorate. Professional differentiation occurs in the last year. Graduation from the College of Sister Formation is reserved for those who have completed the essentials of the basic curriculum. What constitutes the completion of this curriculum is to be decided by the dean of the college on the basis of both quantitative and qualitative achievement.

Ordinary requirements for graduation from the College of Sister Formation are 180 credit hours as prescribed by Seattle University and substantial completion of the sequence in philosophy, 24 hours in theology, and an area major in the social sciences (history, social science, and psychology).

Education

Professional courses needed to prepare the student for teaching are offered at the end of the four-year college program and are built on a foundation of liberal education including a major in the social sciences. Since much of the content sometimes taught in professional education courses has been relocated to the parent sciences in this program, basic professional requirements have been developed in two sequences.

The Curriculum and Cadet Teaching sequence is an integrated approach to the preparation for the teaching internship. Foundations of Education, an interdisciplinary course, represents the culminating point of the student's preparation in educational theory.

Application to the Washington State Department of Education for teacher certification is made by Seattle University on the recommendation of the dean of the College of Sister Formation for students who have fulfilled the requirements. Concomitant with a teaching internship of two years is a fifth year of studies which includes professional courses, completion of a major teaching area, and electives according to need.

Nursing

Students preparing to enter the program of nursing will follow the basic Sister Formation liberal arts curriculum. During their senior year they will take pre-professional courses according to the School of Nursing requirements. They will receive the Bachelor of Arts degree on the completion of their liberal arts program, and the Bachelor of Science in Nursing degree on the completion of the nursing program.

Bachelor of Arts

Freshman year

Biology 100, 141, 142	6-12 hours
English 121	4 hours
Fine Arts 105, 125, 130	6 hours
Philosophy 120, 140, 160	12 hours
Psychology 190	4 hours
Theology 170, 271	8 hours

Canonical year

Fine Arts 130, 151, 152	7 hours
Language 121, 122, 123, 124	12 hours
Philosophy 220	4 hours
Physical Education 135	2 hours
Theology 281, 282, 283	9 hours

Sophomore year

English 260, 264, 265	12 hours
History 201, 202, 203	12 hours
Mathematics 221, 222	8 hours
Social Science 205, 240, 335	12 hours

Junior year

English 300	3 hours
History 342, 343, 425	9 hours
Physical Science 301, 302	8 hours
Psychology 314, 375, 435	12 hours
Social Science 350, 410, 450	12 hours
Theology 272, 380	5 hours
Elective	4 hours

Senior year

Philosophy 435	4 hours
Theology 450	2 hours

Total 180 hours

The remainder of the senior year is given to professional requirements. Professional requisites beyond degree requirements:

For teaching: Education 437, 447, 450, 448, 449, Hs 347. Total 39 hours
For nursing: Biology 331, 332, 335; Ch 106; N 226. Total 18 hours
 exclusive of off-campus courses.
For other professions, courses according to need.

Biology Courses

BI 100	General Biology	3-4 credits
	Introduction to biologic systems and relationships. Two to three lecture and two laboratory hours per week.	
BI 141	Human Biology I	3-4 credits
BI 142	Human Biology II	3-4 credits
	Development, structure and function of the human body; introduction to cell biology; inheritance. Two to three lecture and two laboratory hours per week.	
BI 155	Plant Biology	3-4 credits
	Plant structure and physiology; classification of major groups; identification of common local flora. Two to three lecture and two laboratory hours per week.	
BI 331	Anatomy-Physiology I	4 credits
BI 332	Anatomy-Physiology II	4 credits
	Human structure, histology, and physiology. Designed to supplement BI 141-142 for nursing students. Others by permission. Three lecture and two laboratory hours per week.	
BI 335	General Microbiology	4 credits
(221)	Microorganisms and their relation to health; introduction to bacteriology techniques. Three lecture and four laboratory hours per week.	
BI 345	Topics in Biology	4 credits
	Selected topics in biology, developed on the foundation of previous science courses. Three lecture and two laboratory hours per week.	

Chemistry Courses

Ch 105	General Chemistry for Nurses	4 credits
(103)	A survey of general chemistry treating the basic principles and descriptive material requisite for nursing. Three lecture and three laboratory hours per week.	

Ch 106	Organic Chemistry for Nurses	4 credits
(104)	A survey of organic and biologic chemistry treating the basic principles and descriptive material requisite for nursing. Three lecture and three laboratory hours per week.	
Ch 141	General Inorganic Chemistry I	4 credits
	Principles of chemistry, atomic structure, weight relations, states of matter, solutions, kinetics, equilibrium. Three lecture and three laboratory hours per week.	
Ch 142	General Inorganic Chemistry II	4 credits
	Electrochemistry, aqueous solutions, systematic treatment of alkali metals, alkaline earths, hydrogen, oxygen, the halogens, elements of group IV, V, and VI. Three lecture and three laboratory hours per week.	
Ch 143	General Inorganic Chemistry III	4 credits
	Detailed treatment of atomic structure, group III elements, transition metals, covalent compounds of carbon, nuclear structure and radioactivity. Three lecture and three laboratory hours per week.	

Education Courses

Ed 350	Religious Education	1-4 credits
	Kerygmatic approach to religious education.	
Ed 376	Children's Literature	2-4 credits
	A general survey of children's books and reading preferences; historical backgrounds and development; types of children's literature; levels of interest; criticism and evaluation; illustrations; book selection; storytelling.	
Ed 416	The School Library	2-4 credits
	A general survey of elementary and secondary school libraries; emphasis on the function, organization, services, materials, planning and equipment of school libraries in relation to the modern school.	

Sister Formation Courses

- Ed 437 Laboratory Experience: Secondary** 5 credits
(445) Directed experience with children on the secondary school level. Prerequisite: Junior standing.
- Ed 447 Curriculum** 10 credits
(490) Curriculum and methods; an integrated approach to teaching.
- Ed 448 Foundations of Education I** 4 credits
(441) Application of the theoretical disciplines basic to the teaching and learning process; aims and values in education. Prerequisite: Senior standing.
- Ed 449 Foundations of Education II** 4 credits
(442) The learner and the school: the learner; the learning process; differential characteristics of pupils; evaluation. The school: as an educational institution; in its cultural setting. Prerequisite: Ed 448.
- Ed 450 Cadet Teaching** 12 credits
(490) Supervised teaching experience on elementary school level.

English Courses

- En 121 Communication I** 4 credits
Practice in the correct and effective use of the English language with emphasis on writing; study of the mechanics of the research paper.
- En 122 Communication II** 2-4 credits
Practice in the correct and effective use of the English language with emphasis on speech.
- En 131 English as a Foreign Language I** 1-4 credits
En 132 English as a Foreign Language II 1-4 credits
En 133 English as a Foreign Language III 1-4 credits
Introduction to idiomatic English including phonetics, vocabulary and sentence structure; practice in oral and written English.
- En 260 World Literature** 4 credits
Intensive reading in selected texts of masterpieces of literature in translation with emphasis on the classics of Greek, Roman and Italian literature.
- En 264 English Literature I** 4 credits
Beowulf to Wordsworth.
- En 265 English Literature II** 4 credits
Wordsworth to the present. Intensive reading in selected texts of English literature.
- En 300 Principles of Oral Communication** 2-4 credits
Principles and practice of oral exposition.
- En 302 Principles of Literary Criticism** 4 credits
Study of the various principles of literary criticism in order to formulate standards of taste and to arrive at foundations of aesthetic judgment.
- En 308 History of the English Language** 4 credits
Historical development of the English language from its beginnings to the present.
- En 309 English Etymology** 2-4 credits
Origins, developments and meanings of English words with emphasis on derivations from Greek and Latin.
- En 325 Shakespeare** 4 credits
Shakespeare's period, theater and works; study of representative tragedies, comedies and histories.
- En 405 American Literature** 3-4 credits
Selected readings in American literature.
- En 491 Special Studies in Literature** 4 credits
Tutorial readings in literature for advanced students.

Fine Arts Courses

- FA 105 Music Fundamentals** 1-4 credits
(124) Rudiments of music with emphasis on elementary school needs; beginning theory, harmony, form, keyboard harmony.
- FA 125 Art Fundamentals** 1-4 credits
(104) Art principles and their application; principles of color and design; experience with art forms and materials.
- FA 130 Choral** 1-4 credits
Training in the technical skills of ensemble singing and the performance of sacred and secular choral music.
- FA 151 Christian Art and Music** 1-4 credits
FA 152 Christian Art and Music 1-4 credits
(151) Sacred art in relation to the art of the period using the historical approach; formal study of Gregorian Chant and other sacred music.
(152)
(153)
(154)
- FA 160 Creative Experience in Art** 1-4 credits
(161) Guided laboratory experiences in creative design, painting, sculpture and other forms.
- FA 171 Harmony I** 2-4 credits
Intensive course in ear training, music dictation, transposition and melody writing.
- FA 172 Harmony II** 2-4 credits
Four-part writing with the use of principal triads and inversions. Prerequisite: FA 171.
- FA 173 Harmony III** 2-4 credits
Using dominant ninth chords and inversions; secondary seventh chords and inversions; diminished seventh chords and inversions; modulations. Prerequisite: FA 172.
- FA 221 Harmony IV** 2-4 credits
Chromatic harmony and modulations; altered chords; suspensions; melodic figuration; figured chords. Prerequisite: FA 175.
- FA 222 Counterpoint** 2-4 credits
Study of two- and three-part counterpoint in all five species. Prerequisite: FA 221.
- FA 250 Instrumental Music** Arranged
Private lessons.
- FA 270 Techniques of Choral Conducting** 2-4 credits
(141) Practical experience in directing choral groups.

History Courses

- Hs 201 World Cultures I** 4 credits
A survey of the political, economic and cultural formation of Europe, the Middle East and the Far East from earliest times to 1000 A.D.
- Hs 202 World Cultures II** 4 credits
Europe, the Middle East, Far East, and the Americas from 1000 to 1789.
- Hs 203 World Cultures III** 4 credits
Europe, the Middle East, the Far East, the Americas, and Africa from 1789 to the present.
- Hs 342 Problems in United States History:**
(344) **Discovery to 1865** 3-4 credits
Critical and analytical study of colonial, revolutionary confederation, constitutional and early national problems in United States history, including social, economic, political and cultural developments through the Civil War period.

- Hs 343 Problems in United States History:**
(345) Reconstruction to the Present 3-4 credits
 Problems relating to reconstruction, economic revolution and urbanization, progressivism, war and peace.
- Hs 347 History of the Pacific Northwest 3-4 credits**
 Exploration; settlement; social, cultural, political and economic development; period of statehood; contemporary social and economic problems.
- Hs 425 History of the Twentieth Century 3-4 credits**
(321) Origin and nature of modern social-economic problems in their political background; historical development of the culture of Europe, Africa, Asia and the Western Hemisphere.
(322)
- Hs 495 Special Topics in History 3-4 credits**
 Directed reading and lectures at the advanced undergraduate level.

Language Courses

- Fr 121 Elementary French I 3-4 credits**
Fr 122 Elementary French II 3-4 credits
Fr 123 Elementary French III 3-4 credits
Fr 124 Elementary French IV 3-4 credits
 Intensive work on pronunciation; conversation and functional grammar based on readings in text. Graded readers introduced in F 122-
- Fr 201 Intermediate French I 3-4 credits**
Fr 202 Intermediate French II 3-4 credits
Fr 203 Intermediate French III 3-4 credits
 Further development of reading, writing and speaking skills with stress on French culture through use of appropriate readings, records, tapes. Prerequisite: Fr 124.
- Fr 291 Readings in French Literature I 3-4 credits**
Fr 292 Readings in French Literature II 3-4 credits
 Directed reading of French masterpieces.
- Lt 121 Latin I 4 credits**
Lt 122 Latin II 4 credits
Lt 123 Latin III 4 credits
 Latin grammar; reading and writing of simple Latin prose; selections from Latin literature.
- Lt 301 Introduction to Latin Prose and Poetry I 4 credits**
Lt 302 Introduction to Latin Prose and Poetry II 4 credits
 Selected texts from classical authors.
- Sp 121 Elementary Spanish I 3-4 credits**
Sp 122 Elementary Spanish II 3-4 credits
Sp 123 Elementary Spanish III 3-4 credits
Sp 124 Elementary Spanish IV 3-4 credits
 Intensive work on pronunciation; conversation and functional grammar based on readings in text. Graded readers introduced in Sp 122.
- Sp 201 Intermediate Spanish I 3-4 credits**
Sp 202 Intermediate Spanish II 3-4 credits
Sp 203 Intermediate Spanish III 3-4 credits
 Further development of reading, writing, and speaking skills with stress on Spanish culture through use of appropriate readings, records and tapes. Prerequisite: Sp 124.
- Sp 291 Readings in Spanish I 3-4 credits**
Sp 292 Readings in Spanish II 3-4 credits
 Directed reading of Spanish masterpieces.

Mathematics Courses

- Mt 221 Foundations in Mathematics I 4 credits**
Mt 222 Foundations in Mathematics II 4 credits
(301) Sets, relations, functions, number systems, graphs, basic concepts of arithmetic, algebra, geometry and trigonometry; special topics in analytic geometry, introductory calculus, vector algebra, theory of rings, groups and fields, probability, statistical inference or combinatorial analysis.
(302)
(303)
- Mt 281 Calculus and Analytic Geometry I 4 credits**
 Introductory analytic geometry; functions, limits, continuity, the derivative, elementary differentiation formulae and applications. Prerequisite: Mt 222 or equivalent.
- Mt 282 Calculus and Analytic Geometry II 4 credits**
 Integrals, the fundamental theorem of the calculus; definite integral as a limit of a sum; exponential, logarithmic and trigonometric functions and their derivatives, partial derivatives. Prerequisite: Mt 281.
- Mt 283 Calculus and Analytic Geometry III 4 credits**
 Integration and applications; basic properties of continuous and differentiable functions; infinite series; special topics selected from three dimensional analytic geometry; plane curves, vectors and polar coordinates. Prerequisite: Mt 282.

Nursing Courses

- N 226 Nutrition 2 credits**
 Relation of food to health and individual needs; food requirements; composition of foods; utilization of foods in human nutrition. Prerequisite: Ch 106.

Philosophy Courses

- Pl 120 Introduction to Philosophy 4 credits**
 Introduction to philosophical problems through a study of the Pre-Socratics, Plato, Aristotle, Plotinus and St. Augustine.
- Pl 140 Metaphysics of St. Thomas Aquinas 2-4 credits**
 A typical Christian medieval synthesis seen in its historical perspective; the themes of Thomistic metaphysics and the philosophy of God.
- Pl 160 Philosophy of Man 4 credits**
 A systematic study of man, his nature and his powers. Prerequisite: Pl 140.
- Pl 220 Philosophy of Morality 2-4 credits**
 A general theory of moral behavior of man as an individual and as a member of society. Prerequisite: Pl 160.
- Pl 435 Modern and Contemporary Philosophies 4 credits**
 Study of modern and contemporary philosophies with emphasis on the Continental Rationalists, the English Empiricists, German Idealists, American Pragmatists and European Existentialists.
- Pl 493 Selected Topics in Philosophy 4 credits**
 For advanced students.

Physical Education Courses

- PE 135 Orientation to Health and Physical Education 1-2 credits**
 Elements of personal and community health, with special attention to health problems encountered to health teaching.
 by teachers; physical education activities related

Physical Science Courses

- PhS 301 Physical Science I** 4 credits
PhS 302 Physical Science II 4 credits
(301) Introductory course in the physical sciences for liberal arts majors. Special emphasis on physics and astronomy during the first quarter and on chemistry during the second. Introduces a limited number of topics in each discipline basic to an understanding of the discipline itself with a further view to presenting science as a human activity; Prerequisite: Mt 221 for PhS 301.
(302)
(303)

Psychology Courses

- Psy 190 General Psychology** 4 credits
 Introduction to the data of scientific psychology including its nature, scope and method.
Psy 200 Statistics 2-4 credits
 Basic principles and methods for compiling and interpreting data statistically; sampling measures of central tendency; dispersion; correlation.
Psy 314 Psychology of Human Growth and Development 4 credits
 The physical, intellectual, emotional and social development of the human individual; evaluation of recent findings and theories. Prerequisites: Psy 190, Bl 142.
Psy 317 Psychology of Learning 2-4 credits
 Nature, scope and problems; theories of learning.
Psy 375 Psychology of the Individual 3-4 credits
 Behavior of individuals including both normal and abnormal aspects; personality theory; learning theory; perception and motivation. Prerequisite: Psy 314.
Psy 435 Social Psychology 4 credits
 Interaction of the individual and the group with emphasis upon the interpersonal processes, attitudes, leadership. Experience in group dynamics. Prerequisites: SS 250, Psy 375.
Psy 491 Special Studies in Psychology 4 credits
 Supervised reading and research. Prerequisite: Senior standing and approval.

Social Science Courses

- SS 205 Introduction to Geography** 4 credits
 Major concepts and methods in the field; analysis of selected problems and types of regions.
SS 240 Sociological Foundations 4 credits
(200) Basic concepts of the science of sociology; social forces which weaken or strengthen social groups; conditions which stimulate or retard social change.
SS 300 Introduction to Anthropology 4 credits
 Introductory study of man in diverse geographic and cultural settings.
SS 335 Economic Institutions and Principles 4 credits
(250) Introduction to the structure, function and operation of the economic system; analysis of American economic institutions; significance of economic theory; social thought of the Church.
SS 350 Problems in American Government 4 credits
(325) Problems approach to the study of American government, with special emphasis on institutional and behavioral issues arising from the federal system, the presidential system, representation and civil liberties. Prerequisites: Hs 342, 343.

- SS 410 Social Geography** 4 credits
 Geographical study of society; regional studies with a strong emphasis on social content of the regions; critical examination of these regions in the light of international ethics.
SS 450 International Relations 3-4 credits
(420) Examination of the theories, scope and methods in the study of international relations; assessment of the dynamic forces of international politics; critical analysis of international political institutions.
SS 493 Special Topics in the Social Sciences 2-4 credits
 Supervised research in sociology, economics or political science. Open to seniors with the approval of the dean.

Theology Courses

- Th 101 The Liturgy** 1-4 credits
 Meaning of the corporate worship of the Mystical Body and its historical development; the liturgical renewal; the Constitution on the Sacred Liturgy.
Th 170 The Old Testament 1-4 credits
(170) The origin and unfolding of God's plan for man's salvation, as seen through an historical, literary and doctrinal study of the Old Testament.
Th 171
Th 271 The New Testament: Gospels 1-4 credits
(172) The good news of salvation, proclaimed in the words and deeds of Christ: historical, literary and theological study of the gospels.
(173)
Th 272 The New Testament: Epistles 1-4 credits
(273) The early Christian Church as it continued and developed the mission of Christ: a study of Acts and Epistles in their historical context.
(274)
(275)
Th 281 God and Creation 3-4 credits
(181) Historical and systematic study of God's revelation of Himself in the world and in history: His nature; creation and the historical condition of man.
Th 282 Theology of the Redemption 3-4 credits
(182) The mystery of the Incarnate Word and His redemptive activity; the Mystical Christ, the Church; Mary in the Church; the divine life of grace.
Th 283 Sacramental Theology 3-4 credits
(183) The sacramentality of the Christian life; historical and theological study of the sacraments; eschatology and the end of history.
Th 380 Contemporary Moral Problems 2-4 credits
(361) Application of the principles of Moral Theology to modern problems, individual and social.
Th 450 Theology of the Spiritual Life 2-4 credits
(451) A study of Christian perfection, its sources, nature and obligations; the general and particular means of striving for perfection.
(452)
Th 460 Liturgical Theology 2-4 credits
 A doctrinal study of the sacred liturgy as prolongation of the mystery of Christ; incorporation and assimilation to Christ within the Mystical Body.
Th 465 Survey of Contemporary Theology 2-4 credits
 The challenge of contemporary thought and attitudes; their influence on theologians, Catholic and Protestant.
Th 485 Selected Questions in Dogmatic Theology 2-4 credits
Th 495 Selected Questions in Scripture 2-4 credits

The Graduate School

Rev. Edmund W. Morton, S.J., Ph.D., Dean

Graduate studies directed toward the master's degree were first offered at Seattle University in 1901 in a division of its College of Arts and Sciences. In 1935 graduate courses became an integral part of the University's teaching education program. In the fall of 1958 Seattle University began a program of graduate study leading to the Master of Science degree in electrical or mechanical engineering for students in evening classes. The Graduate School now is a separate school of the University with three divisions: arts and sciences, education and engineering. Offerings in arts and sciences are given in biology, English, history, and programs in chemistry, mathematics and physics under the National Science Foundation.

Objectives

Graduate School programs are not merely *more* courses in undergraduate study; they involve courses advancing by gradation into greater complexity and profundity. The content of graduate courses is of a more advanced nature, the requirements in terms of bibliography, quantity and quality of thinking and writing are higher, and the degree of initiative, the organizing ability and originality expected is greater. Only a limited number of undergraduate courses may be accepted for credit. Graduate students should not consider the mere literal fulfillment of requirements as conferring the right upon them to continued registration. Academic advancement and eligibility for degrees are contingent also upon recommendation and approval of the Graduate Council.

Organization

Administration of the Graduate School lies with the Dean of the Graduate School and the Graduate Council appointed by the President and directly responsible to him and the Advisory Council. The Graduate School is subject, however, to the general academic administration of the Academic Council. All programs in Seattle University beyond the bachelor's degree or the first professional degree are under the academic administration of the Graduate School.

The Dean of the Graduate School and his Council establish and maintain requirements for degrees according to the recommendations of the Graduate Committee of each school of the University.

The component schools and various departments provide courses of instruction for graduate students, direct their studies, conduct examinations, maintain requirements and make recommendations. Academic transactions involving admission, registration and awarding of degrees are supervised by the University's Registrar. Actual admission to graduate study is granted through the Dean of the Graduate School in consultation with the appropriate department head involved in the counseling of the applicant.

Classification of Students

Basically there are two classes of students in the Graduate School: (1) those who intend to pursue the degree and who therefore wish to become candidates. These are termed classified students. (2) those who are qualified to enroll in graduate courses but do not intend to apply for the master's degree. These are termed unclassified.

Classified graduate students may be either *applicants* who have been admitted to the Graduate School but not to candidacy, or *candidates* who have completed 20 quarter hours of an approved program of studies with no grade less than B in their major area.

Unclassified graduate students may be either (1) credential candidates who intend to qualify for initial or further certification as teachers in the public or private schools, particularly those with a baccalaureate or higher degree but with unfulfilled undergraduate requirements in education; (2) other students who are admitted to take work beyond the requirements of the bachelor's degree.

While unclassified students are not held to the specific requirements of a particular graduate program, they must, however, follow the required admission procedures and perform satisfactory work in the courses for which they enroll. Ordinarily no credits earned by an unclassified student will count toward a degree except with approval at the time candidacy is granted.

Admission Requirements

Admission to the degree program is granted to applicants who have received the bachelor's degree from an approved college or professional school, and whose scholarship records and credentials indicate ability to pursue graduate work.

An undergraduate major and an undergraduate minor or their fair equivalents are required in the same departments or areas from which the student selects his graduate work.

Application for admission should be submitted as early as possible, before the opening of the term in which the student wishes to begin his work. Prospective students must file with the Office of Admissions:

An official application form properly filled in. This form may be obtained from the Registrar's Office.

Two official transcripts of academic credits to be sent directly from each institution attended. Failure to file complete records of previous school attendance renders the student liable to dismissal or cancellation of credit.

A student is not regarded as a duly qualified graduate student until he has received a letter of acceptance from the Dean of the Graduate School.

Since most graduate programs are conducted on an evening and summer basis only, admission is not granted to foreign students.

For specific advanced degree requirements consult the graduate publications of the department concerned.

Admission to Candidacy

Admission to candidacy for the master's degree is granted after the student has completed 20 quarter hours of his approved program of studies with no grade less than B in his major area.

Degrees Offered

Graduate degrees offered by the University are:

ARTS AND SCIENCES

Master of Arts—Specialized work in the departmental majors of English and history (summer only).

Master of Science—Specialized work in biology.

Master of Science in Natural Science—A degree with no required research, especially designed for and restricted to high school teachers of science and mathematics (summer only).

EDUCATION

Master of Arts in Education (evening and summer).

Master of Education (evening).

ENGINEERING

Master of Science in Electrical Engineering—(evening only).

Master of Science in Mechanical Engineering—(evening only).

General Program Requirements

The candidate for the master's degree must present a minimum of 35 quarter hours of credit beyond the bachelor's degree. He must satisfy any additional requirements imposed by the major department and the Graduate Council.

All work must be of distinctly advanced character but, with the approval of the department and the Graduate Council, 15 credits may be earned in courses numbered 300 to 499, if the subjects be suitable to the student's program. An exception to this rule is in the Master of Science in Natural Science degree which is a terminal degree program where no 300 numbered courses are acceptable, but the program may be made up of courses numbered 400 or above. A maximum of 10 quarter hours may be transferred from another institution if they are earned with a grade of "A" or "B" and approved by the Council.

Distribution of course work will be according to a program recommended by the department and approved by the Dean of the Graduate School.

Every candidate for a master's degree must take a comprehensive examination in the major field of study. This examination shall be written and/or oral at the judgment of the department and the approval of the Graduate Council. A "B" average is required for work done toward the master's degree.

The student may be required to complete a thesis on a topic approved by his major department and the Graduate Council. For this work, no more than 10 quarter hours of credit are granted. The thesis is not necessarily a work of original research but it must, however, demonstrate the candidate's ability to collect facts, interpret them in a critical manner and organize and express them in an original, lucid way.

The topic of the thesis is to be approved by the student's mentor and filed with the Graduate School when 30 quarter hours of the graduate program have been completed.

Four unbound copies of the approved thesis are to be filed in the Office of the Dean four weeks before the date of graduation. Two of these copies will be bound and placed in file in the Seattle University library.

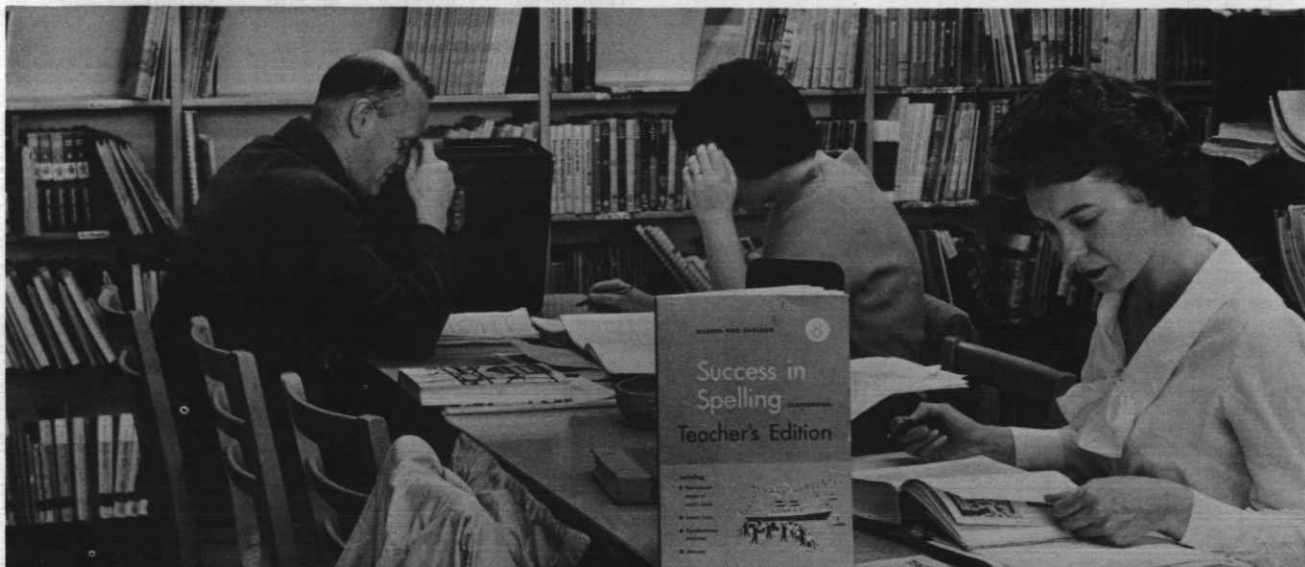
An oral examination on the content of the thesis, cognate literature and available source material may be held before a board approved by the Graduate Council.

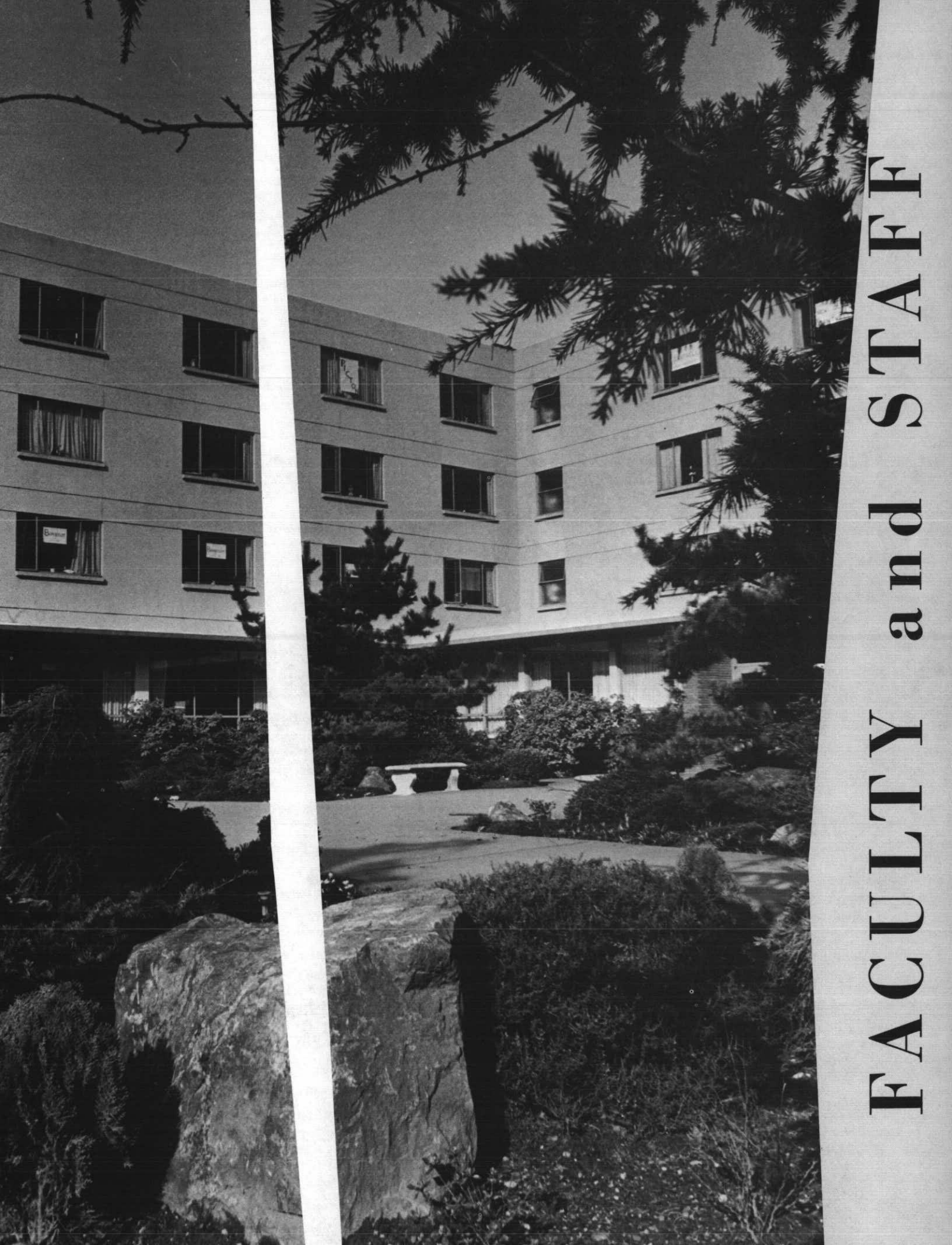
The course work for the master's degree must be completed within 5 years (6 consecutive summer sessions) after the candidate has been accepted for graduate study. This time limit also applies to courses to be transferred from other institutions. The comprehensive examination, the thesis, and thesis examination must be completed within one year after the course of studies is finished. Application for the degree is to be filed with the University Registrar by February 15 of the year in which the degree is to be awarded.

Each candidate for the Master of Arts degree will give evidence of a reading knowledge of a foreign language. Application for this examination must be made with the departmental office not later than April 15 preceding the June in which the degree is expected.

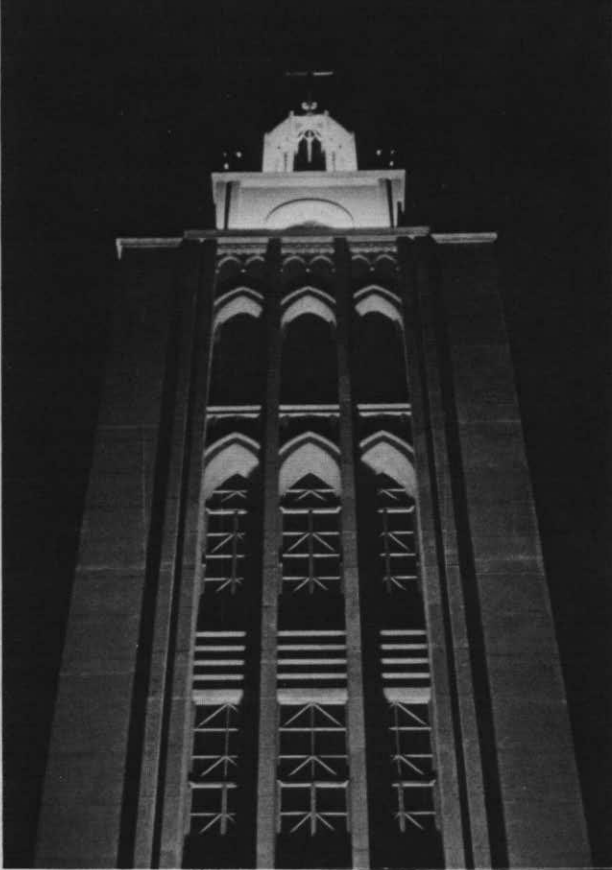
The Graduate School alone has the power to recommend a candidate for a master's degree.

All candidates for degrees must be present at the Commencement Exercises to receive their diplomas.





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Margaret W. Sullivan,
Executive Secretary

The University Faculty

The dates following faculty names indicate initial and subsequent appointments to the University faculty. Asterisks preceding names denote faculty members on leave of absence.

Clarence L. Abello, B.Econ. (1953)

Assistant Professor of Spanish
B.Econ., 1933, University of London; Contador Publico Nacional, 1937, Universidad Nacional de Buenos Aires, Facultad de Ciencias Economicas.

William M. Agnew, S.J., M.A., Ph.L. (1960; 1965)

Instructor in Philosophy
B.A., 1940, M.A., 1944, Gonzaga University; Ph.L., 1960, Gregorian.

Walter M. Aklin, A.B. (1935)

Acting Head, Music Department
Associate Professor of Music (Piano)
Absolutorial, 1924, Zurich, Switzerland; A.B., 1942, Seattle College.

Norman E. Andrie, Maj., B.A. (1963)

Assistant Professor of Military Science
B.A., 1954, Michigan State University.

William E. Armstrong, S.J., Ph.D. (1957)

Assistant Professor of Modern Languages
A.B., 1944, M.A., 1945, Gonzaga University; S.T.L., 1952, Alma College; Diplome de l'Institut de Phonetique Francaise de la Sorbonne, Universite de Paris, 1954; Ph.D., 1955, Catholic University of Paris.

Engelbert M. Axer, S.J., Ph.D. (1941; 1955)

Associate Professor of Philosophy
A.B., 1930, Valkenburg, Holland; S.T.L., 1940, St. Louis University; M.A., 1941, Gonzaga University; Ph.D., 1949, Georgetown University.

Sister Mary Diana Bader, O.P., Ph.D. (1961)

Assistant Professor of Theology
B.Ed., 1957, Seattle University; Ph.D., 1961, St. Mary's College, Notre Dame.

Edward J. Baldinger, M.S. (1957)

Head, Civil Engineering Department
Professor of Civil Engineering
B.S., 1940, Notre Dame University; M.S., 1951, University of Michigan; Registered Professional Engineer.

Eddie Barrett, Sp./5 (1964)

Armorer, Military Science

Mary C. Bartholet, M.S.N.E. (1958; 1965)

Assistant Professor of Nursing
B.S., 1949, College of St. Teresa; M.S.N.E., 1958, St. Louis University.

Elbert M. Beamer, M.A. (1965)

Instructor in Philosophy
B.A., 1952, University of Puget Sound; M.A., 1964, University of Washington.

Bruce G. Beezer, M.A. (1965)

Instructor in Education
B.A., 1954, M.A., 1965, Seattle University.

Richard H. Berg, M.S.C.E. (1966)

Assistant Professor of Civil Engineering
B.S.C.E., 1959, M.S.C.E., 1961, University of Washington.

Marilyn A. Berglund, M.A. (1964)

Instructor in Latin
B.A., 1961, Seattle University; M.A., 1963, University of California.

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Head, Chemistry Department
Associate Professor of Chemistry
A.B., 1944, M.A., 1945, Gonzaga University; S.T.L., 1952, Alma College; Ph.D., 1957, University of Notre Dame.

Francis X. Bisciglia, S.J., M.A. (1963)

Assistant Professor of Classical Languages
A.B., 1938, M.A., 1939, Gonzaga University; S.T.L., 1947, St. Louis University; M.A., 1952, Fordham University.

Sister Mary Charlotte Borthwick, F.C.S.P., Ph.D. (1961)

Assistant Professor of English
B.A., 1951, College of Great Falls; M.A., 1957, Seattle University; Ph.D., 1965, Fordham University.

Robert I. Bradley, S.J., Ph.D. (1961)

Dean, College of Arts and Sciences
Associate Professor of History
A.B., 1947, M.A., 1948, Gonzaga University; S.T.L., 1956, Facultes Saint Albert, Louvain University; M.A., 1958, Ph.D., 1963, Columbia University.

Alfred T. Brady, S.J., M.A. (1951)

Associate Professor of Theology
A.B., 1939, M.A., 1940, Gonzaga University; S.T.B., 1948, Alma College.

Sister Mary Scholastica Brink, C.S.J., B.M. (1960)

Acting Instructor in Art and Music
B.Mus., 1943, Seattle University.

Norma Jean Bushman, M.N. (1960)

Assistant Professor of Nursing
B.S.N., 1959, M.N., 1960, University of Washington.

J. Gerard Bussy, S.J., Ph.D. (1948)

Professor of Philosophy
L.Ph., 1933, S.T.L., 1937, Gregorian; M.A., 1952, Seattle University; Ph.D., 1957, University of Washington.

***Sister Mary Annette Buttimer, O.P., Ph.D. (1962)**

Instructor in Social Science
B.A., 1957, M.A., 1958, National University of Ireland at Cork; Ph.D., 1965, University of Washington.

Louis G. Cancienne, Capt., B.S. (1964)

Assistant Professor of Military Science
B.S., 1959, Louisiana State University.

Robert J. Carmody, S.J., Ph.D. (1943)

Professor of English
A.B., 1931, M.A., 1932, Gonzaga University; S.T.L., 1939, Alma College; Ph.D., 1949, University of Washington.

Walter R. Carmody, Ph.D. (1947)

Professor of Chemistry
B.S., 1923, University of Washington; M.S., 1924, Ph.D., 1926, Catholic University.

- George J. Cetinich, M.A. (1965)**
Instructor in German
 B.S., 1953, University of Oregon; Zertifikat, 1958, Diplom, 1959, University of Heidelberg; M.A., 1964, University of Washington.
- Chu Chiu Chang, M.A. (1956)**
Assistant Professor of Mathematics
 A.B., 1942, Central Political Institute, Chungking, China; M.A., 1956, University of Washington.
- Theodore S. Chihara, Ph.D. (1955)**
Head, Mathematics Department
Professor of Mathematics
 B.S., 1951, Seattle University; M.S., 1953, Ph.D., 1955, Purdue University.
- Janet Sue Christensen, M.N. (1963)**
Instructor in Nursing
 B.S., 1959, Pacific Lutheran University; M.N., 1963, University of Washington.
- Louis K. Christensen, Ph.D. (1965)**
Associate Professor of Music
 B.A., 1954, M.A.(Mus.) 1956, Ph.D., 1961, University of Washington.
- Virginia S. Clayton, M.S. (1961)**
Assistant Professor of Home Economics
 B.S., 1959, University of Miami (Fla.); M.S., 1961, University of Washington; Cert. Dietitian, American Dietetics Association.
- Woodrow R. Clevinger, Ph.D. (1960)**
Associate Professor of Marketing
 B.A., 1938, M.A., 1940, Ph.D., 1955, University of Washington.
- William J. Codd, S.J., Ph.D. (1947)**
Professor of Education
 A.B., 1936, M.A., 1938, Gonzaga University; Ph.D., 1958, University of Washington.
- Richard C. Collins, Ph.D. (1963)**
Assistant Professor of Political Science
 B.A., 1960, Wisconsin State College; Ph.D., 1963, University of Colorado.
- James V. Connors, S.J., M.A. (1961)**
Assistant Professor of Speech
 B.A., 1952, Ph.L., 1953, Gonzaga University; S.T.B., 1958, University of Santa Clara; M.A., 1961, San Francisco State College.
- Vincent M. Conway, S.J., M.A., S.T.L. (1940)**
Professor Emeritus
 A.B., 1934, M.A., 1935, Gonzaga University; M.A., 1937, Loyola University, Chicago; S.T.L., 1946, Alma College.
- Paul P. Cook, Ph.D. (1962)**
Assistant Professor of Biology
 B.A., 1951, M.A., 1952, University of Kansas; Ph.D., 1962, University of California.
- William W. Cooley, M.S. (1964)**
Assistant Professor of Electrical Engineering
 B.S., 1954, M.S., 1961, University of Washington; Registered Professional Engineer.
- Anne M. Corcoran, M.A. (1961)**
Instructor in Office Management
 B.A., 1928, M.A., 1935, Washington State University.
- A. Barrett Corrigan, S.J., Ph.D. (1944; 1965)**
Associate Professor of Education
 A.B., 1935, M.A., 1936, Gonzaga University; Ph.D., 1954, Fordham University.
- John L. Corrigan, S.J., Ph.D. (1948)**
Professor of Industrial Relations and Personnel Management
 A.B., 1933, M.A., 1934, Gonzaga University; S.T.L., 1941, Alma College; Ph.D., 1948, Catholic University.
- Sister Mary Germaine Corwin, O.P., M.A. (1964)**
Librarian, Edmonds Campus
Instructor in Languages
 B.A., 1962, Seattle University; M.A., 1964, Rosary College, River Forest.
- Frank B. Costello, S.J., Ph.D. (1959)**
Executive Vice President
Associate Professor of Political Science
 A.B., 1945, M.A., 1946, Gonzaga University; M.A., 1949, Fordham University; S.T.L., 1953, Alma College; Ph.D., 1959, Georgetown University.
- James J. Cowgill, S.J., Ph.D. (1950; 1953)**
Head, Physics Department
Professor of Physics
 B.S., 1938, M.S., 1939, Gonzaga University; S.T.L., 1946, Alma College; Ph.D., 1957, University of Notre Dame.
- Robert J. Cross, M.L. (1963)**
Librarian
 B.A., 1947, Carleton College; M.L., 1955, University of Washington.
- Thomas W. Cunningham, Ph.D. (1959)**
Head, Psychology Department
Assistant Professor of Psychology
 B.A., 1956, Seattle University; M.S., 1959, Ph.D., 1966, University of Portland.
- Nikolas J. Damascus, M.F.A. (1951)**
Associate Professor of Art
 B.F.A., M.F.A., 1947, Art Institute of Chicago.
- Margaret Mary Davies, Ph.D. (1955)**
Associate Professor of Economics
 A.B., 1938, Ph.D., 1960, University of Washington.
- Richard A. Davison, Ph.D. (1963)**
Assistant Professor of English
 B.A., 1956, Middlebury College; M.A., 1958, University of Rochester; Ph.D., 1963, University of Wisconsin.
- Rosario J. DeGracia, M.S. (1963)**
Instructor in Nursing
 B.S.N., 1954, University of the Philippines; M.S., 1959, Western Reserve University.
- Walter J. DeLong, Lt. Col., B.S. (1962)**
Assistant Professor of Military Science
 B.S., 1946, United States Military Academy.
- Khalil (Charles) Dibee, Ph.D. (1964)**
Associate Professor of Finance
 B.S., 1956, University of Detroit; M.B.A., 1958, Ph.D., 1962, University of Texas.
- Sister Victor Dobyns, F.C.S.P., Ph.D. (1964)**
Assistant Professor of Chemistry
 B.S., 1958, College of Great Falls; Ph.D., 1964, University of Notre Dame.
- Barbara A. Dollard, M.A. (1963)**
Assistant Professor of Education
 B.Ed., 1958, Seattle University; M.A., 1963, Stanford University.
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Dean of Men
Director of Student Activities
Instructor in Theology
 B.A., 1953, Gonzaga University; B.A. University of Santa Clara; M.Ed., 1964, Seattle University.
- William J. Dore, Jr., M.A. (1963)**
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Assistant Professor of Speech
 B.A., 1954, M.A., 1957, University of Washington.
- David A. Downes, Ph.D. (1953)**
Head, English Department
Professor of English
 A.B., 1949, Regis College; M.A., 1950, Marquette University; Ph.D., 1956, University of Washington.

- Thomas E. Downey, Ph.D. (1957)**
Professor of History
A.B., 1932, M.A., 1934, Loyola University, Chicago;
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- Sister Charles of the Cross d'Urbal, F.C.S.P., B.A. (1960)**
Instructor in French
B.A., 1938, Seattle University.
- Arthur C. Earl, S.J., M.A. (1944)**
Associate Professor of Accounting
B.S., 1929, Creighton University; M.A., 1937, Gonzaga University.
- Robert J. Egan, S.J., M.A., S.T.L. (1964)**
Instructor in Theology
B.A., 1955, Gonzaga University; S.T.L., 1963, College Immaculee Conception; M.A., 1963, St. Mary's University.
- Sister M. Anne Patrice Eilers, O.P., M.A. (1964)**
Instructor in Art
B.A.Ed., 1957, M.A.Ed., 1962, Seattle University.
- John Fearon, O.P., B.A., S.T.P. (1963)**
Assistant Professor of Theology
B.A., 1943, St. Albert's College, Oakland; S.T.L., 1947, S.T.Lr., 1947, Dominican House of Studies, Washington, D. C.; S.T.P., 1962, Dominican House of Studies, River Forest.
- Sister Mary Jean Frances Fiffe, O.P., M.A. (1960)**
Assistant Dean, Edmonds Campus
Assistant Professor of Theology
B.A., 1944, Holy Names College; M.A., 1954, Dominican College, San Rafael.
- Lewis Filler, D. Eng. Sci. (1962)**
Associate Professor of Mechanical Engineering
B. Aero Eng., 1953, M. Aero. Eng., 1954, D. Eng. Sci., 1958, New York University.
- Alice L. Fisher, M.S.P.H. (1950)**
Associate Professor of Nursing
B.S.N., 1930, University of Minnesota; M.S.P.H., 1936, University of Michigan.
- John A. Fitterer, S.J., M.A., S.T.L. (1956)**
President of the University
Associate Professor of Classical Languages and Philosophy
A.B., 1945, M.A., 1947, St. Louis University; S.T.L., 1955, Gregorian.
- Virginia E. FitzGerald, M.S.N. (1960)**
Assistant Professor of Nursing
B.S.N., 1953, Georgetown University; M.S.N., 1959, Catholic University.
- Winfield S. Fountain, Ed.D. (1957)**
Dean, School of Education
Professor of Education
B.A., 1940, Gonzaga University and North Idaho College of Education; M.Ed., 1953, Ed.D., 1956, University of Washington.
- Thomas C. Gabisch, O.P., Ph.D. (1960)**
Assistant Professor of Theology
B.A., 1920, Catholic University; S.T.L., 1921, Colegio Angelico, Rome; Ph.D., 1923, University of Louvain.
- Louis Gaffney, S.J., Ph.D. (1956)**
Associate Professor of Psychology
Director of Counseling and Testing Center
A.B., 1942, M.A., 1943, Gonzaga University; S.T.L., 1950, Alma College; Ph.D., 1956, University of Minnesota.
- Byron P. Gage, M.S. (1959)**
Assistant Professor of Electrical Engineering
B.S., 1959, University of Washington; M.S., 1961, Seattle University; Registered Professional Engineer.
- *Joseph J. Gallucci, Jr., M.A. (1961)**
Instructor in Music
A.B., 1957, Seattle University; M.A., 1959, Harvard University.
- Joseph T. Gardiner, MSg. (1964)**
Supply Sergeant, Military Science
- William J. Gill, S.J., M.A. (1958)**
Assistant Dean of Students
B.A., 1938, M.A., 1939, Gonzaga University.
- Thomas M. Grant, M.A. (1964)**
Instructor in English
A.B., 1961, Gonzaga University; M.A., 1964, Rutgers University.
- Sister Mary Emmanuel Gray, O.P., B.A. (1960)**
Assistant Dean, Tacoma Campus
Assistant Professor
B.A., 1955, Central Washington State College
- Catherine Green, M.S. (1964)**
Assistant Professor of Physical Education
B.S., 1954, Skidmore College; M.S., 1958, University of Colorado.
- Thomas M. Green, Ph.D. (1965)**
Assistant Professor of Physics
A.B., 1950, A.M., 1955, Dartmouth University; Ph.D., 1959, University of California.
- *Francis J. Greene, S.J., M.A. (1958)**
Assistant Professor of Journalism
A.B., 1947, M.A., 1948, Gonzaga University; S.T.L., 1954, Alma College; M.A., 1965, University of Missouri.
- Esther M. Gregory, B.S. (1961)**
Assistant Librarian
B.S., 1931, University of Washington; B.S., 1940, University of Southern California.
- Nancy Gross, M.L. (1962)**
Assistant Librarian
A.B., 1954, Bryn Mawr College; M.L., 1962, University of Washington.
- William A. Guppy, Ph.D. (1952)**
Associate Professor of Psychology
Clinical Psychologist
Ph.B., 1950, Seattle University; M.A., 1953, Ph.D., 1959, Loyola University, Chicago.
- Thomas B. Hamilton, M.A. (1963)**
Instructor in Psychology
B.A., 1961, Seattle University; M.A., 1963, University of Portland.
- Darel W. Hardy, M.S. (1964)**
Instructor in Mathematics
B.S., 1962, M.S., 1964, New Mexico State University.
- Vernon J. Harkins, S.J., B.A., S.T.L. (1958; 1963)**
Assistant Professor of Philosophy
B.A., 1951, Gonzaga University; S.T.L., 1957, Alma College.
- Charles R. Harmon, M.A. (1953)**
Assistant Professor of History
B.S.S., 1950, Seattle University; M.A. 1957, University of Washington.

- Shirley M. Harrell, M.N. (1962)**
Assistant Professor of Nursing
B.S.N., 1945, Seattle University; M.N., 1962, University of Washington.
- John S. Harrington, S.J., M.A. (1951)**
Assistant Professor of Sociology
A.B., 1941, M.A., 1942, Gonzaga University; S.T.B., 1949, Alma College; M.A., 1951, St. Louis University.
- Frederick P. Harrison, S.J., M.A. (1938; 1959)**
Assistant Professor of English
A.B., 1937, M.A., 1938, Gonzaga University; S.T.B., 1945, Alma College.
- William P. Harthill, M.S. (1964)**
Instructor in Electrical Engineering
B.S., 1960, M.S., 1962, University of Washington; Registered Professional Engineer.
- Eugene A. Healy, S.J., Ph.D. (1952)**
Associate Professor of Biology
A.B., 1936, M.A., 1937, B.S., 1945, Gonzaga University; S.T.L., 1944, Alma College; M.S., 1948, Fordham University; Ph.D., 1952, Columbia University.
- *Timothy J. Healy, M.S.E.E. (1960)**
Assistant Professor of Electrical Engineering
B.S.E.E., 1958, Seattle University; M.S.E.E., 1959, Stanford University
- James M. Hefner, B.A. (1965)**
Acting Instructor in Physical Education
B.A., 1964, California Western University.
- Sally Ann Heick, M.S. (1965)**
Assistant Librarian
B.A., 1962, M.L., 1965, University of Washington.
- Marvin T. Herard, M.F.A. (1960)**
Acting Head, Art Department
Assistant Professor of Art
B.A., 1954, University of Washington; M.F.A., 1960, Cranbrook Academy of Art.
- Helon E. Hewitt, M.N. (1965)**
Instructor in Nursing
B.S., 1959, M.N., 1961, University of Washington.
- Richard P. Hickey, Ph.D. (1947)**
Professor Emeritus
A.B., 1922, Dayton University; Ph.D., 1927, University of Fribourg, Switzerland.
- Sister Marianne Hickman, O.P., B.S.E. (1960)**
Acting Instructor in Art
B.S.E., 1954, Marylhurst.
- Lee Hodson, M.L.S. (1957)**
Education Librarian
B.A., 1939, University of Redlands; M.L.S., 1942, University of California.
- David J. Holston, SMaj. (1964)**
Administrative Staff, Military Science
- Jeanette A. Hulburt, M.A. (1964)**
Assistant Librarian
B.A., 1950, Seattle University; M.L., 1964, University of Washington.
- Gladys M. Hunter, M.Ed. (1955)**
Professor Emeritus
B.A., 1936, Valley City Teachers College; M.Ed., 1947, Teachers College, Columbia University.
- Elizabeth Y. Hwang, M.L. (1965)**
Assistant Librarian
B.A., 1962, National Taiwan University; M.L., 1965, University of Washington.
- Dolly Ito, M.A. (1959)**
Assistant Professor of Nursing
B.S., 1951, Gonzaga University; M.A., 1958, University of Washington.
- Dolores M. Johnson, M.A. (1964)**
Instructor in English
B.A., 1960, M.A., 1964, University of Washington.
- Leonard J. Kaufer, S.J., Ph.D. (1962)**
Head, Philosophy Department
Assistant Professor of Philosophy
B.A., 1948, M.A. 1949, Gonzaga University; S.T.L., 1956, Alma College; Ph.D., 1962, Gregorian.
- George F. Keough, Ed.D. (1954)**
Associate Professor of Education
A.B., 1924, Campion College, Wisconsin; J.D., 1930, Loyola University, Chicago; M.A.Ed., 1952, Western State College of Colorado; Ed.D., 1961, Stanford University.
- Sister Mary Thomas Kessing, C.S.J., Ph.D. (1961)**
Assistant Professor of English
B.A., 1939, University of California; M.A., 1959, Seattle University; Ph.D., 1963, St. John's University, Jamaica.
- David P. Killen, B.A. (1964)**
Acting Instructor in Theology
B.A., 1961, Seattle University.
- John G. Kirk, Capt., B.S. (1963)**
Assistant Professor of Military Science
B.S., 1956, Seattle University.
- James W. King, S.J., M.A., S.T.B. (1959)**
Assistant Professor of Theology
Diploma, Voice, 1942, Sherwood Music School, Chicago; M.A., 1952, Gonzaga University; S.T.B., 1957, Alma College; Diplome, 1958, Institut Gregorien de Paris.
- Barney Koch, M.S. (1962)**
Assistant Professor of Physical Education
B.S., 1947, M.S., 1965, University of Oregon.
- *Michael J. Kohl, M.A. (1955)**
Assistant Professor of Education
A.B., 1939, Georgetown University; M.A., 1953, University of Washington.
- Charles S. LaCugna, Ph.D. (1947)**
Head, Political Science Department
Professor of Political Science
A.B., 1937, Manhattan College; M.A., 1944, Fordham University; Ph.D., 1960, University of Washington.
- Sister Judith Lang, F.C.S.P., Ph.D. (1957; 1964)**
Dean, College of Sister Formation
Associate Professor of Education
B.S., 1932, College of St. Catherine; M.A., 1937, University of Washington; Ph.D., 1950, Catholic University.
- Silvia P. Lange, M.N. (1962)**
Assistant Professor of Nursing
B.S., 1955, University of Colorado; M.N., 1959, University of Washington.
- Martin F. Larrey, Ph.D. (1965)**
Assistant Professor of History
B.A., 1960, M.A., 1962, University of Santa Clara; Ph.D., 1965, University of California.
- James Robert Larson, Ph.D. (1952)**
Head, Sociology Department
Associate Professor of Sociology
A.B., 1949, Seattle University; Ph.D., 1958, University of Washington.

- Sister Maurille Leblanc, F.C.S.P., B.A. (1962)**
Acting Instructor in Music
B.A., 1962, Portland University.
- Mary Alice Lee, A.B. (1957)**
Registrar
A.B., 1949, Saint Louis University.
- Phyllis L. Leonard, M.N. (1961)**
Assistant Professor of Nursing
B.S.N., 1958, M.N., 1960, University of Washington.
- William F. LeRoux, S.J., M.A., S.T.D. (1958)**
Associate Professor of Theology
Director, Pre-Major Program
B.A., 1946, M.A., 1947, Gonzaga University; S.T.D., 1959, Gregorian.
- Francis J. Lindekugel, S.J., M.A., S.T.L. (1946)**
Associate Professor of Theology
A.B., 1937, M.A., 1938, Gonzaga University; S.T.L., 1945, Alma College.
- Francis J. Logan, S.J., M.A. (1939)**
Assistant Professor of Modern Languages
A.B., 1925, M.A., 1926, Gonzaga University; Diplome, 1955, de l'Institut de Phonetique de l'Universite de Paris.
- Henrietta Loudon, M.L. (1961)**
Assistant Librarian
A.B., 1959, M.L., 1961, University of Washington.
- Anthony Low, Ph.D. (1965)**
Assistant Professor of English
A.B., 1957, M.A., 1959, Ph.D., 1965, Harvard University.
- Paul P. Luger, S.J., M.S. (1937; 1946; 1957)**
Assistant Professor of Physics
A.B., 1935, M.A., 1936, Gonzaga University; M.S., 1946, Fordham University.
- Dougald A. MacFarlane, Ph.D. (1965)**
Assistant Professor of Economics
B.A., 1949, University of St. Francis Xavier; M.A., 1957, McGill University; Ph.D., 1965, University of Washington.
- Kenneth D. MacLean, M.A. (1962)**
Assistant Professor of English
B.A., 1952, M.A., 1957, University of Washington.
- Joseph A. Maguire, S.J., M.A. (1965)**
Assistant to the President for Development
B.S., 1950, A.B., 1956, M.Ed., 1962, Gonzaga University.
- Harry Majors, Jr., M.S. (1958)**
Head, Mechanical Engineering Department
Professor of Mechanical Engineering
B.S., 1935, University of California; M.S., 1939, California Institute of Technology; Registered Professional Engineer.
- Albert B. Mann, M.A. (1960)**
Assistant Professor of History
A.B., 1951, Gonzaga University; M.A., 1957, University of Washington; Fulbright Scholar, 1953, University of Paris.
- Georgette L. Marchand (1960)**
Associate Professor of French
Diplome, 1926, de l'Ecole Normale d'Angouleme, Certificat d'Aptitudes Pedagogiques; Officier de l'Instruction Publique de la France; Professeur au "Cours de Civilisation Francaise a la Sorbonne," Paris.
- R. Maxime Marinoni, M.A. (1964)**
Instructor in French
Licence, 1961, Universite de Grenoble; M.A., 1965, University of Washington.
- Clair A. Marshall, S.J., M.S. (1933; 1941; 1944; 1950)**
Assistant Professor of Chemistry
Student Loan Officer
Veterans Coordinator
A.B., 1932, M.A., 1933, Gonzaga University; S.T.B., 1941, Alma College; M.S., 1950, Fordham University.
- Eunice M. Martin, M.A. (1948)**
Head, Home Economics Department
Associate Professor of Home Economics
B.S., 1944, M.A., 1952, University of Washington.
- Robert A. Matter, Col., B.S. (1965)**
Professor of Military Science
B.S., 1939, U.S. Military Academy.
- Sister Rose Amata McCartin, F.C.S.P., Ph.D. (1960)**
Assistant Professor of Education
B.A., 1955, College of Great Falls; M.A., 1960, Immaculate Heart College; Ph.D., 1964, University of Southern California.
- Francis J. McGarrigle, S.J., Ph.D. (1937)**
Professor Emeritus
A.B., 1913, M.A., 1914, Gonzaga University; Ph.D., 1923, S.T.D., 1923, Valkenburg, Holland; Mag. Ag., 1927, Gregorian.
- James B. McGoldrick, S.J., Ph.D. (1931)**
Professor of Educational Psychology
A.B., 1923, M.A., 1924, Gonzaga University; S.T.D., 1931, Gregorian; Ph.D., 1935, University of Washington.
- James T. McGuigan, S.J., M.A., S.T.L. (1946)**
Associate Professor of Philosophy
A.B., 1929, M.A., 1930, Gonzaga University; S.T.L., 1937, Alma College.
- Thomas J. McInerney, Ph.D. (1948; 1964)**
Associate Professor of English
A.B., 1946, Dartmouth University; M.A., 1948, Boston College; Ph.D., 1959, University of Washington.
- J. W. McLelland, M.A. (1947)**
Associate Professor of Finance
Director of Admissions
B.S., 1941, Seattle University; M.A., 1949, University of Washington.
- Sister Mary Roberta McMahon, O.P., Ph.D. (1962)**
Assistant Professor of Philosophy
B.A., 1936, M.Ed., 1953, University of Washington; Ph.D., 1963, St. Louis University.
- Sister M. Damian McNeil, O.P., M.A. (1963)**
Instructor in Music
B.A., 1961, M.A., 1964, University of Washington.
- Edmund B. McNulty, S.J., M.S. (1941; 1946)**
Vice President for Finance
A.B., 1931, M.S., 1933, B.S., 1942, Gonzaga University.
- Cruz M. Mendizabal, Ph.D. (1962)**
Assistant Professor of Spanish
B.A., 1952, M.A., 1954, Ph.D., 1965, Universidad Javeriana, Bogota, Colombia.
- Sister Mary Rosarii Metzgar, C.S.J., B.A. (1960)**
Acting Instructor in Music
B.A., 1936, University of Washington.
- Dale C. Meyer, M.A. (1964)**
Instructor in English
A.B., 1961, Gonzaga University; M.A., 1962, University of Washington.

- *Joseph B. Monda, M.A. (1955; 1961)**
Assistant Professor of English
 A.B., 1949, St. Martin's College; M.A., 1950, Marquette University.
- Edmund W. Morton, S.J., Ph.D. (1961)**
Academic Vice President
Professor of Philosophy
 A.B., 1940, M.A., 1941, Gonzaga University; Ph.D., 1954, University of Toronto.
- Sister Mary Alma Nagel, O.P., M.L.S. (1960)**
Librarian, Tacoma Campus
 B.A., 1938, Central Washington State College; B.L.S., 1952, Rosary College, Forest River; M.L.S., 1961, University of Portland.
- Richard A. Neve, Ph.D. (1962)**
Head, Biology Department
Associate Professor of Biology
 B.S., 1948, Loyola University, Los Angeles; M.S., 1941, University of San Francisco; Ph.D., 1956, University of Oregon Medical School.
- Sister Mary Ruth Niehoff, O.P., M.Ed. (1951)**
Dean, School of Nursing
Associate Professor of Nursing
 B.S.N.Ed., 1952, M.Ed., 1955, Seattle University.
- Edward J. O'Brien, B.C.S. (1958)**
Director of Athletics
Baseball Coach
 B.C.S., 1953, Seattle University.
- Ralph K. O'Brien, Ed.D. (1953)**
Professor of Education
 B.S., 1939, Cortland State Teachers College; M.S.Ed., 1941, Syracuse University; Ed.D., 1954, University of Washington.
- Thomas L. O'Brien, S.J., M.A., S.T.L. (1958)**
Director, Honors Program
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- Gary A. Zimmerman, Ph.D. (1964)**
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Lecturer in Physics
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Jesuit Educational Association

Colleges and Universities in the United States Conducted by the Society of Jesus

ALABAMA	Spring Hill College (Mobile)	NEBRASKA	The Creighton University (Omaha)
CALIFORNIA	Loyola University (Los Angeles) University of San Francisco University of Santa Clara	NEW JERSEY	St. Peter's College (Jersey City)
COLORADO	Regis College (Denver)	NEW YORK	Canisius College (Buffalo) Fordham University (New York) Le Moyne College (Syracuse)
CONNECTICUT	Fairfield University	OHIO	John Carroll University (Cleveland) Xavier University (Cincinnati)
ILLINOIS	Loyola University (Chicago)	PENNSYLVANIA	St. Joseph's College (Philadelphia) University of Scranton
LOUISIANA	Loyola University (New Orleans)	WASHINGTON	Gonzaga University (Spokane) Seattle University
MARYLAND	Loyola College (Baltimore)	WASHINGTON, D.C.	Georgetown University
MASSACHUSETTS	Boston College (Chestnut Hill) Holy Cross College (Worcester)	W. VIRGINIA	Wheeling College
MICHIGAN	University of Detroit	WISCONSIN	Marquette University (Milwaukee)
MISSOURI	Rockhurst College (Kansas City) St. Louis University		

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The Seattle University Seal

The letters *IHS* at the top of the design are from the Greek spelling of Jesus and are especially significant to the Society of Jesus, which conducts the University. The American eagle and shield symbolize the relationship of the University to the nation it serves.

At the upper left of the shield proper, the two wolves over the pot are traditional symbols of the generosity of the house of Loyola, family of the founder of the Jesuits. The seven diagonal stripes at the right are awards for valor made to the family.

In the lower portion of the shield, the crescent is the sign of the Immaculate Conception, patroness of the school; the evergreen tree represents the State of Washington and is a traditional symbol of knowledge; and the Indian tepee commemorates Chief Seattle, whose name the University and the city in which it is located both bear.

There is a central mail room on the campus to which all mail addressed to Seattle University, Seattle, Washington 98122, is delivered. Mail for student residence halls must be addressed to their respective locations. It will expedite delivery on the campus to specify the following as indicated:

Where to Write

Correspondence relating to the general interest of the university: <i>Very Reverend Father President</i>	Diplomas and Graduation: <i>Registrar</i>	Public Information, Publicity: <i>University Relations</i>
Communications regarding curriculum, scholastic problems, degree programs: <i>The Dean of the particular school or the Academic Vice President</i>	Residence Accommodations and Student Housing: <i>Men: Dean of Students Women: Dean of Women</i>	Readmissions: <i>Registrar</i>
Admission Blanks and Entrance Requirements: <i>Director of Admissions</i>	Foreign Students: <i>Director of Admissions or Foreign Student Adviser</i>	Scholarships: <i>Committee on Scholarships</i>
Alumni Affairs: <i>Director, Seattle University Alumni Association</i>	Gifts, Grants and Bequests: <i>Director of Development</i>	Placement and Student Employment: <i>Placement Office</i>
Athletic Program: <i>Director of Athletics</i>	Graduate Study: <i>Dean of the Graduate School</i>	Student Loans: <i>Director of Student Loans</i>
Bulletins and Catalogs: <i>Director of Admissions</i>	Jesuit Faculty Residence: <i>Father Minister</i>	Teachers' Certification and Placement: <i>Dean of the School of Education</i>
Counseling and Testing: <i>Director, Counseling and Testing Center</i>	Late Afternoon and Evening Classes: <i>Director, Graduate Evening Classes</i>	Transcripts, Student Records, Grades: <i>Registrar</i>
	Personal Welfare and Health of Students: <i>Dean of Students</i>	Tuition, Payment of Bills, Refunds: <i>Treasurer</i>



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