



COLLEGE OF LIBERAL ARTS AND SCIENCES

The mission of the College of Liberal Arts and Sciences is to:

1. Provide an environment for students to develop an awareness of the great issues facing humanity.
2. Encourage students to be imaginative, critical, intellectually curious individuals, who will aspire to lifelong learning.
3. Develop career interests and abilities appropriate to the needs of students.
4. Foster in students communicative and evaluative competencies.
5. Develop self-renewing people in a value-centered interdisciplinary, intercultural, and humanistic context that puts career goals of students into a societal context in ways that will have significant impact on contemporary and future society, and will bring continuing personal satisfaction to them.

Thus students are

- Assisted in effectively relating their learning to the world.
- Helped in establishing an individual identity that is rewarding.
- Prepared to adapt beneficially to change.

In fulfilling its mission, the College of Liberal Arts and Sciences accomplishes several major functions. In conveying what it means to be a scientist — artist — scholar — human being, it offers a wide variety of courses and subjects to the student interested in a liberating education; it provides programs leading to degrees with specialization in over 20 areas of study; and it functions as a service unit for other colleges offering specialized professional curricula. The College confers two degrees, the Bachelor of Arts (which requires a foreign language) and the Bachelor of Science (no foreign language requirement); the degree received depends upon the course of study of the individual student.

As part of a medium-sized university, the College is large enough to provide diversity in curricula while retaining a tradition of individual attention for its students. The faculty of the College consists of a group of carefully selected teacher-scholars interested in students.

Curricula

The College of Liberal Arts and Sciences offers curricula leading to majors in over twenty areas of study. The major consists of not fewer than 24 semester hours of courses taken in one department, or in an approved interdepartmental program, including not fewer than 20 semester hours in courses above the freshman level. All of the departmental and interdepartmental curricula require a nucleus of general education courses in humanities, social sciences, and sciences. Each student in the College must declare a major in one of the following fields: administration of criminal justice (interdepartmental); biochemistry; biology; molecular biology; chemistry; computer science; computer information systems; economics; English; foreign languages (French, German, Spanish); environmental science (with options in biology, chemistry, geological sciences and physics); geological sciences; history; individualized major program; international studies; mathematics; medical technology (interdepartmental, biology and chemistry); philosophy; physics; political science; psychology; religious studies; social work; sociology.

Secondary Education Curricula

Students who wish to prepare for a teaching career in the secondary schools may fulfill the requirements for a teaching certificate while working on a degree program in the College of Liberal Arts and Sciences. Certification requirements are independent of graduation requirements; students may graduate, as long as they have met the graduation requirements of the University, the College, and their department, without being certified. Requirements for certification are added to those for graduation, but, in most cases, the student may meet certification requirements through planned use of elective hours. Secondary education requirements are outlined in detail in the College of Education and Health Sciences section of this catalog.

Preprofessional Preparation for the Health Professions

The College has long prepared preprofessional students interested in the health professions. For example, the department of biology offers a specific curriculum leading to a preprofessional baccalaureate degree; the departments of chemistry and physics also offer preprofessional curriculum options. However, experience has shown that virtually any major is acceptable for professional education provided the student is careful to select, as electives, those courses necessary for admission to the professional school of his or her choice. Biology, chemistry, psychology, and physics are appropriate majors, but students majoring in the social sciences or the humanities have also been admitted to medical or dental school. Preprofessional students who prefer to design their own major or to obtain a general background in the College without concentrating their courses in a major, may do so under the liberal arts and sciences individualized major program.

Pre-Law Curriculum

Most American law schools desire their students to have a broad educational background and do not generally recommend any particular undergraduate major. Courses emphasized as effective preparation include those which contribute to organized and precise thought, to the proper use of English, and to an expanded perspective of one's social environment. Of basic importance is the ability to communicate competently in oral and written form; facility in this respect should be cultivated through both appropriate course work and independent effort.

While virtually any major is acceptable, breadth of knowledge is vital. The academic program should, therefore, provide significant coverage of the humanities, social sciences, and physical sciences. In addition, students will further benefit by undertaking, on their own initiative, a reading plan to supplement their formal study.

Pre-law students who prefer to design their own major or to obtain a general background in the College without concentrating their courses in a major, may do so under the liberal arts and sciences individualized major program.

Experiential Learning

The programs of the College provide opportunity for "hands on" learning through cooperative education/internships, practica in clinical settings, work/study opportunities, research participation, and undergraduate assistantships. These experiences link the world of the intellect and the world of work and practical affairs.

Cooperative Education/ Internship Program

The College participates with employers in an optional Cooperative Education/Internship Program. Students either alternate periods of full-time study with full-time employment or have part-time employment while attending classes. The program provides academic- or career-related work experiences. To be eligible, the

student must have sophomore standing and a 2.0 minimum overall gradepoint average at Bradley and in the College of Liberal Arts and Sciences.

LAS 301 Cooperative Education/Internship in LAS 0-9 hrs.

Cooperative education or internship experience. May be repeated for a total of 9 hours credit with a combined total of 9 hours available for all Cooperative Education & Internship work assignments. The number of hours awarded for the work assignment will be dependent upon the number of total hours worked during the semester. Pass/Fail. Prerequisites: sophomore standing in the College of Liberal Arts and Sciences, 2.0 Bradley overall gradepoint average and LAS cumulative gradepoint average, consent of LAS Co-op and internship coordinator and Co-op and internship faculty advisor.

Graduation Requirements

The College confers two degrees, the Bachelor of Arts (which requires a foreign language) and the Bachelor of Science (see University requirements for the B.S. degree). The requirements for the degrees are outlined below; the degree received depends upon the course of study of the individual student.

Students who maintain continuous enrollment and who complete work toward the baccalaureate degree within five years from the date of entry may graduate under either the catalog in effect at the time of entrance or under the catalog in effect at the time of graduation. A change in major could mean meeting new requirements in force at the time of the change as a condition for acceptance into that major. Students whose work has been interrupted for one or more semesters may be held to requirements in effect at the time of their re-enrollment.

All-University Requirements:

The student must satisfy the general university requirements as to residence, grade point average, and required courses. See "Academic Regulations" for these requirements.

1. Candidates for the Bachelor of Arts degree must present credit for two years of college-level foreign language or its equivalent. The foreign language requirement is outlined in detail under Department of Foreign Languages.
2. Candidates for the Bachelor of Science degree must successfully complete at least 6 hours of courses selected from physical and natural science, mathematics, computer science, or quantitative methods in addition to the hours used to fulfill the University general education requirements. See requirements for the B.S. degree.
3. Transfer students from another institution or from within the University who have successfully completed a minimum of 5 semester hours of English composition shall not be required to take additional hours of composition. CLEP composition credit may substitute for ENG 101, but not for the junior-level composition course.

College Requirements:

In addition to the University requirements, the student must satisfy the following requirements which are concurrent, not cumulative:

1. A minimum of 90 semester hours credit (toward the 124 required for graduation) in courses offered in the College. A **maximum** of 6 hours in art, music, communication (except 103), and theatre may be included in the 90 hours. Likewise, a **maximum** of 6 hours in economics and family and consumer sciences may be included in the 90 hours. Thus, a **maximum** of 12 hours from among certain courses offered outside of the College may be counted toward the 90 hours. CLAS/economics majors may count all of their major hours toward meeting the 90 hour requirement.
2. A minimum of 30 semester hours credit (toward the 40 required for graduation) in courses numbered 300 or above offered by the College.
3. A second course in the human values category of the University general education requirements. Thus each CLAS major must have credit for two human values courses – one in philosophical analysis and the other in literary analysis.

Baccalaureate Articulation: Associate in Arts or Associate in Sciences Graduates

A transferring student who has completed an Associate in Arts or an Associate in Science degree in an Illinois public community college may expect to earn a baccalaureate degree from a College of Liberal Arts and Sciences program upon the completion of two additional years of course work (normally 60-64 semester hours) provided that the following qualifications are met:

1. that the transferring student does not change his or her intended major or area of specialization
2. that the College has a program in the transferring student's intended major or area of specialization
3. that the 60-64 semester hours of course work represented in the associate degree include only baccalaureate-oriented, college-level courses which appear in the ICCB master course file

Major Requirements:

The student must complete a major of not fewer than 24 semester hours in one department or in an approved interdepartmental program, including not fewer than 20 hours in courses numbered 200 or above. Because some curricula require more than these minima and/or collateral work in other subject areas, students are urged to check requirements carefully with advisors for their major programs. The student must have a grade point average **exceeding 2.0** in all courses numbered 200 or above in the department.

Transfer students who enter the College with 16 or more hours of the major already completed and are candidates for a degree must earn at Bradley at least nine hours in the major field with a grade point average exceeding 2.00. The department or program chair shall have the privilege of waiving some or all of these required nine hours but may not reduce the overall total for the major below 24 hours, 20 of which must be above the freshman level.

Secondary Teacher Preparation:

Students who wish to prepare to teach in the secondary schools may seek to fulfill the requirements for a teaching certificate while they are working for the baccalaureate degree in the College of Liberal Arts and Sciences. Bradley University will recommend students for a teaching certificate if they have obtained their degree at Bradley and have fulfilled the requirements listed in the College of Education and Health Sciences section of this Catalog. Recommendation for a certificate is, however, considered a privilege and **is not automatically granted** simply because a student has fulfilled the technical requirements. The student must also receive approval from the faculty of the field in which he or she plans to teach, the Dean of the College of Liberal Arts and Sciences, the chair of the Department of Teacher Education and the Dean of the College of Education and Health Sciences.

Certificate requirements are completely independent of graduation requirements. It should be noted that the State, for certification purposes, counts all course work, regardless of level, taken in the academic area. Our requirements for a 24-hour major are thus usually more demanding than the State's, and the student may be able to reach 32 hours by counting all course work in that area.

Secondary education requirements are outlined in greater detail in the section of this catalog under College of Education and Health Sciences.

LAS M.B.A. Program

The College of Liberal Arts and Sciences and the Foster College of Business Administration have approved an intercollegiate five-year program leading to the baccalaureate degree in LAS **and** a Master of Business Administration. This cooperative arrangement enables a student through careful use of elective credit to obtain a degree in a field of personal academic interest **and** to prepare for a career as a professional manager within just five years. Special academic advisement is available to anyone interested in this program.

Engineering Physics

This intercollegiate program is sponsored jointly by the Department of Physics and the College of Engineering and Technology. Students in this program choose an advisor from a committee of physics and engineering faculty charged with overseeing the program. The degree is conferred through the College of Engineering and Technology. Further details are provided in the appropriate section of this catalog.

Washington Semester

Bradley University has a cooperative arrangement with American University for well-qualified students to study in one of these programs: the Washington Semester in American Politics, the Foreign Policy Semester, the Economic Policy Semester, the Justice Semester, and the Journalism Semester. A package of seminars with public and private officials, internships, research, and coursework provides students with a first-hand view of their area of interest. A full semester of credit is earned through the program.

Interdisciplinary Courses

LAS 101 Arts and Ideas Seminar

1 hr.

Seminar on selected intellectual and artistic topics which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic. Maximum of three hours credit may be earned.

SCI 101 Topics in Investigative Science for Educators 4 hrs. (Gen. Ed. FS)

Laboratory-based biological and physical science. Content developed along interdisciplinary themes. Course taught in an inquiry/investigative format and provides an introduction to investigate science applications in Pre K-12 classroom settings. Course may be repeated once under different topic. Prerequisite: 12 hours of college-level courses.

Administration of Criminal Justice

FACULTY COORDINATING COMMITTEE *Curtis (Political Science), Hall (Political Science), Robertson (History), Salamini (Sociology), Zant (Sociology) Director; Adjunct Instructors DeFranco, Wyant.*

The major in administration of criminal justice is an interdepartmental program of the faculties of history, political science, and sociology. Illinois Central College cooperates by offering lower-division courses in criminal justice on the Bradley campus.

The mission of the administration of criminal justice program at Bradley University is to provide our students with a thorough understanding of the institutions, structures, and processes through which society defines, perceives, and responds to deviance. Graduates of our program will have numerous career options, including graduate study in the discipline; pursuit of a career in the law; attainment of a professional degree in cognate disciplines such as public administration, social work, and correctional counseling; responsible careers in the growing private security industry; and line and specialist positions in service delivery organizations within the various criminal justice systems.

Transfer Students

Transfer students who have earned the Associate of Arts degree in criminal justice will have fulfilled the **designated ACJ** course work required for the degree.

Students who elect the academic exploration program or another major may change to administration of criminal justice if they have a cumulative GPA exceeding 2.0 and a GPA exceeding 2.0 in previously taken administration of criminal justice major requirements (see list).

Major Requirements

Lower Division Courses (21 hours)

ACJ 110 Introduction to Criminal Justice	3
ACJ 225 Criminal Law	3
ACJ 250 Police Organization and Administration	3
PLS 105 Introduction to American Government	3
PLS 202 State and Local Government	3
SOC 100 The Sociological Perspective	3
HIS 201 American History: Social	3
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	21

Research Requirement (3 hours)

PLS 209 Scope and Methods of Political Science or	
SOC 240 Research Methods	3
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	3

Upper Division Courses (21 hours)

PLS 360 Judicial Politics	3
PLS 419 Introduction to Public Administration or	
PLS 420 Public Management	3
SOC 430 Perspectives on Deviance	3
SOC 331 Correctional Policies and Society	3
SOC 332 Juvenile Delinquency	3
SOC 312 Social Inequality or	
SOC 313 Race, Ethnicity and Minority Relations or	
SOC 342 Social Policy	3
HIS 309 History of U.S. Law Enforcement	3
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	21

Internship Requirement (3 hours)

PLS 480 Internship in Political Science or	
SOC 391/392 Internship in Applied Sociology	3
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	3
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	48

Strongly Recommended Electives (not required)*

ACJ 130 Introduction to Investigation
 HIS 303 American Urban History
 PLS 440 Public Policy Analysis
 PLS 422 Urban Politics
 PLS 459 Constitutional Law
 PLS 460 Constitutional Law
 SOC 322 Socialization and Society
 SOC 340 Demography and Urban Studies

* Recommended electives also include any of the alternative courses noted above which were not taken as a requirement.

Please note: To graduate, ACJ majors must have a cumulative g.p.a. exceeding 2.0 for all courses numbered 200 or above in the ACJ major requirement.

Course Descriptions

ACJ 110 Introduction to the Criminal Justice System 3 hrs.

An introduction to the criminal justice systems in America, including policy making, law enforcement, prosecution, adjudication, and corrections. In addition to the institutions of the various systems, the major theoretical perspectives for explaining deviance and the societal response to deviance will be explored.

ACJ 130 Introduction to Investigation 3 hrs.

An exploration of the principles of criminal investigation, including crime scene analysis, collection and analysis of physical evidence, the use of physical evidence in prosecution of crime, and the rules governing the introduction of physical evidence in court. Social and political issues affecting criminal investigations will also be covered.

ACJ 225 Criminal Law 3 hrs.

An analysis of the history and development of the criminal law as a system of social control. Coverage includes the scope, purposes, and general principles of the criminal law as well as the elements of specific crimes. Prerequisite: ACJ 110.

ACJ 250 Police Organization and Administration 3 hrs.

An introduction to the principles of organization and management of law enforcement bureaucracies, with an emphasis on the tasks faced by managers and the guiding principles used to complete these tasks. Students will consider the unique problems of managing a police bureaucracy in a democratic society. Prerequisite: ACJ 110.

African-American Studies

FACULTY Professors Gill (Political Science), Lermack (Political Science) Maga (History); Associate Professors Conley (English), Gorin (Sociology), Kasambira (Education), Penelton (Education); Smallwood (History), Director; Worley (English).

The African-American studies program at Bradley is the scholarly pursuit of knowledge about the history, philosophies, ethics, psychologies, attitudes, religious experiences, and cultural manifestations as they exist within the context of African-American people in American society, i.e., the African-American experience. African-American studies also has a subsidiary, yet corollary, focus on African and Caribbean ideologies as they influence the progression and development of the African-American community.

In addition, African-American Studies at Bradley has a multidisciplinary approach with a two-fold emphasis: (1) to investigate the African-American experience from within the context of criteria established by Afrocentric scholars; and (2) to investigate the African-American experience from a comparative basis, i.e., the established criteria of Eurocentric scholars. Inherent in that approach is one of the primary objectives of an institution of higher learning: to develop the critical and analytic skills of all students in assessing factual and subjective information. A subsidiary objective is to provide students with the skills to understand, carefully and adequately, the particulars of "race" as they extend to universal (national and international) implications. Further, African-American studies is also an approach to understanding self, community, and nation through concrete examples taken from the African-American experience. Since universal ideas are equally implicit in all humans, regardless of social status, gender, sexual preference, religious persuasion or race, African-American studies is an attempt to illustrate how African-Americans are the "same but different" in terms that transcend time, place and generic differences. Although African-American studies will use the context of the African Diaspora as a means to explore predispositions about gender, status, religion or race, the overall objective is to help students become critical thinkers.

Minor in African-American Studies (18 Credit Hours)

Required Courses (9 Credit Hours)

AAS 210 African-American History: From Slavery to 1877	3
AAS 211 African-American History: From 1877 to Present	3
AAS 300 Contemporary Issues in African-American Studies	3
	9

Elective Courses (9 Credit Hours)

Category I (select two) 6

Approximately one-half of the course reading and instruction in these courses will focus on issues pertaining to Black people, i.e. African-Americans, Africans or West Indians.

IS 275 Problems of the Developing World

IS 420 Caribbean States in the

International System

IS 440 Problems in African Development

ENG 129 African American Literature

SOC 313 Race, Ethnicity and Minority Relations

ENG 329 Studies in African American Literature

Category II (select one) 3

Approximately one-quarter of the course reading and instruction in these courses will focus on issues pertaining to Black people, i.e. African-Americans, Africans or West Indians.

PLS 360 Judicial Politics

PLS 422 Urban Politics

ECO 313 American Economic History

Total Hours

18

A 2.0 grade point average in African-American studies courses is required for satisfactory completion of the African-American studies minor. It is expected that each African-American studies minor will have a knowledge of a language other than English.

Course Descriptions

AAS 210 African-American History: From Slavery to 1877

3 hrs. (Gen. Ed. SF)

The African Diaspora and the African-American experience from slavery to emancipation and reconstruction. Issues of major importance to African Americans in the context of American history.

AAS 211 African-American History

3 hrs. (Gen. Ed. SF)

Black reconstruction; the rise of the KKK; the black exodus; 30 years of lynchings; the civil rights movement; major African-American leaders; current issues of major importance. Prerequisite: AAS 210.

AAS 300 Contemporary Issues in African-American Studies

3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. Prerequisite: consent of instructor.

American Studies

FACULTY COORDINATING COMMITTEE *Conley (English) Director; Felder (Economics); Fuller (Philosophy and Religious Studies); Gill (Political Science); Robertson (History); Smallwood (African-American Studies).*

This interdisciplinary minor offers students a comprehensive introduction to the history, literature, art, and politics of American culture.

Minor in American Studies

Curriculum and Requirements

The minor consists of five three-hour courses, two of which are required: AMS 200 Critical Issues and AMS 400 Senior Project. The remaining three courses will be chosen from electives which must deal with aspects of the American experience and must complement one another. To assure that this is done, students must have their American studies program approved by the advisor. Students must earn a minimum grade of C in all courses taken for the American studies minor.

Nine of the 15 hours required by the minor must be taken at the junior-senior level. Students may not use as electives courses needed for their majors. No more than two electives may be from a single department.

The Program:

AMS 200 Critical Issues in American Studies 3

Three electives from among the following 9

ENG 329 Studies in African American Literature

ENG 330 Studies in Native American Literature

ENG 332 Early American Literature

ENG 334 19th Century American Literature

ENG 336 20th Century American Literature

HIS 203 United States History to 1877

HIS 303 American Urban History

HIS 304 Women in American History

HIS 305 American Indian History

PLS 301 Topics in American Politics

PLS 311 Political Parties: Electorate and Politics

PLS/PHL 407 American Political Philosophy

PLS 421 The Politics of Regulation

PLS 459, 460 Constitutional Law

RLS 200 Contemporary Religion in the United States

SOC 211 Contemporary Social Problems

SOC 312 Social Inequality

SOC 313 Race, Ethnicity, and Minority Relations

SOC 314 Native Americans

One elective from among the following 3

All courses listed above plus

AAS 210 African-American History: From Slavery to 1877

AAS 300 Contemporary Issues in African-American Studies

ECO 313 American Economic History

ECO 400 Economics Colloquium for Seniors

ECO 499 Senior Seminar in Economics, Part II

ETE 115 Schools and Schooling in American Society

ENG 233 American Literature to 1865

ENG 235 American Literature 1865 to Present

ENG 495 Independent Study

ENG 480 Senior Project

HIS 300 The United States Since 1945

HIS 301 Topics in American History: Intellectual

HIS 302 Topics in American History: Diplomatic

HIS 306 The United States Civil War Era

HIS 308 Topics in American History: Political

HIS 309 The History of U.S. Law Enforcement

HIS 505, 506 Seminar in Directed Reading

HIS 507, 508 Area Study in Directed Reading

PLS 310 Political Behavior

PLS 360 Judicial Politics

PLS 419 Introduction to Public Administration

RLS 350, 351 Topics in Religious Studies

RLS 387 Contemporary Trends in Religious Thought

SOC 390 Topics in Sociology

WMS 200 Introduction to Women's Studies

WMS 400 Directed Research in Women's Studies

AMS 400 Senior Project 3

Total Hours 18

Course Descriptions

AMS 200 Critical Issues in American Studies

3 hrs.

Examination of key configurations of ideas, values, material conditions, institutions, and cultural manifestations in selected historical periods in the geographical area that is now the United States. Required of all American studies minors; open to others.

AMS 400 Senior Project

3 hrs.

Topics selected in consultation with the advisor. May be satisfied by independent study under supervision of approved faculty or by a project conducted in an approved research seminar.

Asian Studies

FACULTY COORDINATING COMMITTEE: *Getz (Religious Studies), Director; Goodnow (International Business); Guzman (History); Hwang (International Studies); Maga (History); Palakeel (English).*

The program in Asian studies is designed to provide a broad understanding of the political, social, economic, and cultural forces that have influenced and continue to shape Asia. The Asian studies area is defined to include South Asia, Southeast Asia, Inner Asia, and East Asia. Students with an interest in Asia who are majoring in international studies, international business, and relevant liberal arts disciplines will especially benefit from this program.

Minor in Asian Studies

A minor in Asian studies will require completion of 18 credit hours from the list of approved courses. There will be six hours of required courses. The remaining twelve hours will be made up of elective courses, with no more than six elective hours taken from any one discipline. Courses in Asian languages are recommended. A student may transfer up to six semester hours in an approved Asian language. Students are strongly encouraged to take advantage of study abroad programs at Bradley University in areas listed above.

Required Courses 6

Choose two

HIS 336 Early Non-Western History
IS 182 Fundamentals of Contemporary Asian Civilization
RLS 331 Religions of the Eastern World

Electives 12

Choose four

ART 243 Survey of World Art III
HIS 107 Modern Japan, 1860-Present
HIS 324 Barbarians in History
HIS 337 Modern Non-Western History
IS 285 East Asia in the Modern World
IS 381 East Asian International Relations
IS 385 Problems of Contemporary Asia
RLS 338 China: Religion and Culture
RLS 340 Japan: Religion and Culture
SOC 311 Comparative Family Systems
SOC 410 Sociology of the World System
FLJ 101, 102 Elementary Japanese
FLJ 201, 202 Intermediate Japanese
ENG 381 Literatures of Asia

Biochemistry/ Molecular Biology Program

FACULTY COORDINATING COMMITTEE *Fan (Biology); Kurtz (Biology); Stabenau (Biology); Freim (Physics); Field (Chemistry); Fry (Chemistry); McQuade (Chemistry).*

The interdepartmental program is jointly sponsored by the departments of biology, chemistry, and physics. The objective of the program is to provide the student with the appropriate background for employment in the fields of biochemistry and molecular biology or for admission to graduate training in these areas. Students may choose either the molecular biology option or the biochemistry option.

Requirements for Both Options

BIO 123 Principles of Biology I	4
BIO 124 Principles of Biology II	4
BIO 365 Cell and Molecular Biology	4
BIO 366 Biochemistry	4
BIO 396 Immunology of Host Defense	3 or 4
CHM 161 General Chemistry I	4
CHM 166 General Chemistry II	5
CHM 250 Organic Chemistry	4
CHM 320 Analytical Chemistry	4
CHM 351 Organic Chemistry	5
CHM 461 Physical Chemistry I	3
PHY 107 General Physics I	4
PHY 108 General Physics II	4
PHY 345 Radiation Biology or	
PHY 346 Biochemical Physics	3
MTH — one year of calculus	
Research project	

Additional Requirements for Molecular Biology Option

BIO 223 Organismic Biology	5
BIO 224 Genetics	3
BIO 381 Comparative Animal Physiology or BIO 395 General Microbiology	3 or 4

Additional Requirements for Biochemistry Option

CHM 392 Chemical Literature	1
CHM 462 Physical Chemistry	3
CHM 463 Physical Chemistry Laboratory	1
CHM 530 Advanced Analytical Chemistry	4

Facilities

The Olin Hall of Science has modern, well-equipped teaching and research laboratories in the departments of biology, chemistry, and physics. In addition, there is a close working relationship with the University of Illinois College of Medicine at Peoria as well as the U.S. Department of Agriculture National Center for Agricultural Utilization Research. Both facilities are within walking distance of the campus.

Especially well-qualified students may be eligible to conduct their required research project at the U.S.D.A. research center.

Department of Biology

FACULTY *Professors Frase, Galsky; Associate Professors Fan, McConnaughay (Chair), Stephens; Assistant Professors Conley, Gehring, Kurtz, Morris, Stabenau.*

The Department of Biology offers and participates in several programs leading to a baccalaureate degree. Programs are designed for students interested in medicine, dentistry, veterinary medicine, biology, secondary education, biotechnology, biochemistry, environmental science, and medical technology. The latter four programs are described elsewhere in this catalog.

All students choosing the preprofessional concentration, the biology concentration, or the secondary teaching concentration must take the following courses and must earn a grade of C or better in all required biology courses:

BIO 123, 124, 223, 224
CHM 161, 166, 250
MTH 115 or 121 (MTH 116 or 122 highly recommended)
PHY 107 and 108

In addition to the above, each student must complete the following additional requirements with a grade of C or better in each biology course taken.

At the completion of 90 semester hours, the student must have credit for BIO 123, 124, 223, 224; CHM 161, 166, 250; and one semester of calculus. Students not meeting these requirements will not be allowed to enroll in other biology courses until requirements are met.

Students with more than 30 semester hours transferring into biology programs from other Bradley majors must have a GPA of 2.25 or greater and must have completed *at least* one semester each of introductory biology, introductory chemistry, and calculus. Students with 30 or fewer hours will be assessed on a case-by-case basis.

Preprofessional Concentration

Choose a minimum of one course from each of the following categories.

Cellular-Molecular Biology
BIO 345, 365, 366, 395, 396
Plant Biology
BIO 324, 330, 334
Environmental Biology
BIO 450, 460, 463
Behavioral & Evolutionary Biology
BIO 319, 440
Structural & Physiological Biology
BIO 302, 323, 361, 381

In addition, the student must choose two additional courses from the above lists, or one course and three hours of reading and/or research approved by the advisor. CHM 351 is also required for this concentration.

Biology Concentration

Choose a minimum of one course from each of the following categories.

Cellular-Molecular Biology
BIO 345, 365, 366, 395, 396

Plant Biology
BIO 324, 330, 334

Environmental Biology
BIO 450, 460, 463

Behavioral & Evolutionary Biology
BIO 319, 440

Structural and Physiological Biology
BIO 302, 323, 361, 381

In addition, the student must choose two additional courses from the above lists, or one course and three hours of reading and/or research approved by the advisor.

Biology - Secondary Teaching

Students will follow the biology concentration and take the required 34 hours of education courses described elsewhere in this catalog. To be certified in the state of Illinois, students must complete the requirements of a secondary teaching certificate. These requirements are listed under the Department of Teacher Education (Secondary Education).

Biochemistry/Molecular Biology Majors

Described elsewhere in this catalog.

Environmental Science Major

Described elsewhere in this catalog.

Medical Technology Major

Described elsewhere in this catalog.

The department is characterized by a faculty of teacher-scholars, completely modern facilities and equipment in Olin Hall of Science, and a curriculum emphasizing undergraduate preparation for careers in the life sciences and the health professions for the 1990s and beyond. Independent study and research participation are a regular part of the curricular pattern for qualified students.

Each student is assigned a faculty advisor upon enrollment and should consult the advisor on matters of course scheduling and career goals. Co-operative education assignments are also available.

The following sequence of courses is suggested for the first two years of the undergraduate curriculum.

Freshman Year

First Semester

¹ BIO 123	4
CHM 161	4
² MTH 115 or 121	4
ENG 101 or COM 103	3
	15

Second Semester

BIO 124	4
CHM 166	5
MTH 116 or 122 (recommended)	3-4
ENG 101 or COM 103	3
	15-16

Sophomore Year

First Semester

BIO 223	5
CHM 250	4
Electives	8
	17

Second Semester

BIO 224	3
Electives	13
	16

Biology Minor

Students desiring a minor in biology should plan to take a minimum of 23 hours.

The 23 required hours must be distributed as follows:

1. Required courses – BIO 121 and 122, or BIO 123 and 124.
2. A minimum of 15 additional hours with a grade of C or better.

¹ Students scoring 4 or higher on the Advanced Placement Examination in Biology administered by the Educational Testing Service will, upon request, receive 8 hours of credit for BIO 121 and 122.

² Those students whose high school preparation in mathematics is not adequate to permit enrollment in MTH 115 or 121 should register for MTH 109 the first semester, then pick up the indicated course in mathematics.

Course Descriptions

BIO 121 Life Science I

3-4 hrs. (Gen. Ed. FS)

Principles of heredity, behavior, and evolution for non-science majors. May be taken with or without laboratory; with laboratory, 4 hours credit; without laboratory, 3 hours credit.

BIO 122 Life Science II

3-4 hrs. (Gen. Ed. FS)

Principles of cell biology and ecology for non-science majors. May be taken with or without laboratory; with laboratory, 4 hours credit; without laboratory, 3 hours credit. Open to all students; BIO 121 is NOT a prerequisite.

BIO 123 Principles of Biology I

4 hrs.

Flow of biological information: reproduction, genetics, behavior, and evolution. Prerequisite: science major or physical therapy major.

BIO 124 Principles of Biology II

4 hrs.

Flow of energy: cell biology, metabolism, and ecology. Prerequisite: BIO 123.

BIO 125 Life Science I (lab)

1 hr. (Gen. Ed. FS)

Laboratory for those students who already have credit for BIO 121 without laboratory. Prerequisite: BIO 121 without lab, or concurrent enrollment.

BIO 126 Life Science II (lab)

1 hr. (Gen. Ed. FS)

Laboratory for those students who already have credit for BIO 122 without laboratory. Prerequisite: BIO 122 without lab, or concurrent enrollment.

BIO 141 Introduction to Medical Technology

1 hr.

Profession and function of a medical technologist: job opportunities, current issues. Tour of a large hospital laboratory. Cross listed as CHM 141.

BIO 200 Human Anatomy and Physiology

3 hrs.

Emphasis on concepts and principles of homeostasis as a manifestation of health and pathophysiological changes during disease. Prerequisite: BIO 122.

BIO 202 Microbiology and Immunology

3-4 hrs. (Gen. Ed. FS)

Basic microbiology principles. Emphasis on application to health and disease. Optional lab.

BIO 203 Human Anatomy & Physiology Laboratory

2 hrs.

Laboratory: structure and function of human systems. Prerequisite: BIO 200 or concurrent enrollment.

BIO 205 Pathophysiology

3 hrs.

Advanced human physiology: normal function and structure of human cells, tissue, and organs; pathological changes which can occur. Prerequisite: BIO 200.

BIO 223 Organismic Biology

5 hrs.

Basic functions and related anatomy of a variety of organisms at various levels of organization. With laboratory. Prerequisites: CHM 161; C or better in BIO 123, 124.

BIO 224 Genetics

3 hrs.

Mechanisms of heredity. Applications and implications of principles. Prerequisites: CHM 250; MTH 115 or 121; C or better in BIO 124.

BIO 280 Directed Research

1-3 hrs.

Individual reading and research projects for qualified underclassmen. Repeatable up to 3 semester hours. Prerequisite: Advanced Placement biology credit, department placement test credit, or consent of Chair.

BIO 300 Population, Resources and Environment

3 hrs. (Gen. Ed. TS)

Ecosystem; how people interact with their environment. Emphasis on population, pollution, disease, and land use. Prerequisite: junior or senior standing, or sophomores by permission.

BIO 301 Biotechnology and Society

3 hrs. (Gen. Ed. TS)

Various biotechnologies from medicine, agriculture, and industry; societal impacts of these technologies. Prerequisite: one college-level science course.

BIO 302 Invertebrate Zoology

4 hrs.

Detailed biological survey of major groups of invertebrate animals. Emphasis on marine phyla with good fossil representation. Dissection of representative types. Lecture and laboratory. Cross listed as GES 302. Prerequisites: elementary zoology or biology or historical geology with laboratory, or consent of instructor.

BIO 312 Developmental Biology

4 hrs.

Descriptive chemical and experimental analysis of principles of development. Prerequisite: CHM 250.

BIO 319 Ethology

4 hrs.

Development and evolution of animal behavior in individuals and social groups from various phyla. Prerequisite: C or better in BIO 223.

BIO 323 Comparative Anatomy

4 hrs.

Gross anatomy; evolution of chordate structure. Prerequisite: C or better in BIO 223.

BIO 324 Plant Diversity

4 hrs.

Structure and function of plants in relation to fundamental principles of plant life. Laboratory study of representative types from each of the great groups of plants. Prerequisite: C or better in BIO 223.

BIO 330 Systematic Botany

4 hrs.

Plant classification using field or herbarium specimens. Prerequisite: C or better in BIO 223.

BIO 334 Reproduction and Identification of Flowering Plants

4 hrs.

Evolution and ecology of flowering plant reproduction. Characteristics and identification of common flowering plant families of Illinois. Prerequisite: C or better in BIO 223.

BIO 345 Radiation Biology**3 hrs.**

Role of ionizing radiation in the biological and medical sciences: production, detection, and measurement of radiation, physically and biologically; interaction of radiation with matter at molecular, cellular, whole body, and whole population levels; application of radiation as a useful and experimental tool. Cross listed as PHY 345. Prerequisites: PHY 108, MTH 115 or 121; C or better in BIO 124.

BIO 361 Microanatomy**4 hrs.**

Organs, tissues, and cells of animals: ultrastructure and relation to function. Prerequisites: 6 semester hours of college level biology or two years of high school biology; physical or natural science major or consent of instructor.

BIO 365 Cell and Molecular Biology**3-4 hrs.**

Molecular organization of cells: chemistry and structure in relation to function. Methods and techniques of investigation. Four hours if taken with laboratory. Cross listed as CHM 365. Prerequisites: CHM 166, 250; C or better in BIO 124.

BIO 366 Biochemistry**3-4 hrs.**

Introduction to enzymatic processes, bioenergetics, metabolism, and metabolic regulation. Methods and techniques of investigation. Four hours if taken with laboratory. Cross listed as CHM 366. Prerequisite: BIO/CHM 365 or consent of instructor.

BIO 381 Comparative Animal Physiology**3-4 hrs.**

Fundamental concepts of mechanisms employed by various animal groups to satisfy functional requirements for living. Physiological differences and similarities. Four hours if taken with lab. Prerequisites: CHM 166, 250; C or better in BIO 223.

BIO 384 Neurobiology**3-4 hrs.**

Principles of membrane biophysics, cellular neurophysiology, systems neurophysiology, and neuroanatomy. Lab optional. Prerequisite: C or better in BIO 381 or consent of instructor.

BIO 395 General Microbiology**4 hrs.**

Basic microbiological principles: anatomy, physiology, genetics, growth, inhibition of growth, and classification. Applications: soil, water, food, industrial microbiology and microbial diseases. Includes lab. Prerequisite: CHM 250 or consent of instructor.

BIO 396 Immunology of Host Defense**3-4 hrs.**

Immune response to foreign challenge; biochemical and cellular components of the immune response and regulation of their expression; contemporary and classical tools and strategies for investigating immune reactions. Anomalous immune responses and resultant diseases. Lab optional. Prerequisite: CHM 250 or consent of instructor.

BIO 440 Evolution**3 hrs.**

Mechanisms of evolution, historical evolution, and history of evolutionary thought. Prerequisites: CHM 250; MTH 115 or 121; C or better in BIO 223 and 224.

BIO 450 Limnology**4 hrs.**

Fresh waters of the region: physico-chemical conditions, plankton analysis, bottom fauna, lake and stream mapping, and productivity. Prerequisites: CHM 166, 250; C or better in BIO 124.

BIO 460 Ecology**4 hrs.**

Interrelationships among animals, plants, and their environment: ecosystems, biotic communities, population changes, and applied ecology. Prerequisites: CHM 166, 250; C or better in BIO 124.

BIO 463 Plant Ecology**4 hrs.**

Physiological and growth responses of plants to environmental stresses, and consequences to the structure and function of communities and ecosystems. Prerequisite: C or better in BIO 223.

BIO 470 Seminar**1-3 hrs.**

Selected topics in biological sciences. Prerequisites: 2.0 gradepoint average in student's major; junior or senior standing; consent of instructor.

BIO 480 Readings***1-3 hrs.**

Individual assignments of relevant topics in biological sciences. Prerequisites: 2.75 gradepoint average in student's major; junior or senior standing; consent of instructor.

BIO 485 Research***1-6 hrs.**

Individual research for qualified students in special areas of biology. Prerequisites: 3.0 gradepoint average in student's major; junior or senior standing; consent of instructor.

BIO 501 Biology of Fishes**3 hrs.**

Fishes: organ-system structure and function, ecology, embryology, behavior, and economic importance. Prerequisite: BIO 312 or 323 or consent of instructor.

BIO 506 Advanced Microbiology**3 hrs.**

Comprehensive analysis of selected topics of current interest in bacteriology, immunology, and virology: genetic engineering, plasmid research, bactericidal and bacteriostatic agents, complement system, viruses, tumor formation, and cancer. Prerequisites: one semester of laboratory bacteriology; organic chemistry; or consent of instructor.

BIO 509 Human Genetics**3 hrs.**

Genetic theory and methodology applied to humans. Prerequisite: BIO 224 or consent of instructor.

BIO 510 Population and Evolutionary Ecology**3 hrs.**

Emphasis on structure, growth patterns, and interactions of populations; relationship to evolutionary theory.

Prerequisites: MTH 115; one semester of environmental biology or consent of instructor.

BIO 519 Comparative Animal Behavior**3 hrs.**

Animal communication, social behavior, and evolution of behavior. Comparisons of a wide variety of vertebrates and invertebrates. Prerequisite: 6 hours of college level biology or zoology.

BIO 525 Advanced Physiology**3 hrs.**

Detailed study of the structure and function of animals; special reference to the human body; theories and methods of investigation mostly at organ system level; adaptational strategies to special conditions. Prerequisite: one semester of physiology or consent of instructor.

BIO 530 Plant Systematics**3 hrs.**

Evolution, classification, and characteristics of various flowering plant families. Prerequisite: one semester of plant systematics or consent of instructor.

BIO 545 Biophysics**3 hrs.**

Application of physics principles and methods to investigation of biological systems. Emphasis on physical environmental effects on biological systems. Cross listed as PHY 545. Prerequisites: PHY 108 or 201; senior standing; or consent of instructor. PHY 345 recommended.

BIO 561 Natural History of Vertebrates**3 hrs.**

Vertebrates as integrated organisms: emphasis on activities and interaction with environment under natural conditions. Field work on local fauna. Introduction to classification. Prerequisite: 6 hours of college level biology or zoology.

BIO 563 Advanced Plant Ecology**3 hrs.**

Physiological and growth responses of plants to environmental stresses, and consequences to the structure and function of communities and ecosystems. Prerequisites: CHM 250; 1 plant biology course, 1 ecology course, or consent of instructor.

BIO 564 Advanced Molecular Biology**3 hrs.**

Selected topics in molecular biology. Emphasis on proteins and nucleic acids. Prerequisites: BIO 365 or consent of instructor.

BIO 565 Aquatic Ecology**3 hrs.**

Emphasis on survival and dispersion of natural aquatic populations as related to environmental degradation in lakes, rivers, and streams. Prerequisite: one semester of environmental biology or consent of instructor.

BIO 566 Advanced Biochemistry**3 hrs.**

Quantitative aspects of all areas of biochemistry. Emphasis on metabolism. Prerequisite: one semester of biochemistry or physical chemistry, or consent of instructor.

BIO 568 Cellular and Molecular Immunology**3 hrs.**

Interaction between antigen presenting cells, B lymphocytes, and T lymphocytes to mount immune responses. Molecules responsible for immune interactions. Methods to study cell and molecular interactions in immunity. Prerequisites: BIO 564 or equivalent.

BIO 570 Seminar**1-3 hrs.**

Selected topics in biological sciences. May be repeated under different topics for a maximum of 6 hours credit. Prerequisites: 3.0 grade point average in student's major; senior or graduate standing; consent of instructor.

BIO 580 Readings***1-3 hrs.**

Individual assignments of relevant topics in biological sciences. Prerequisites: 3.0 grade point average in student's major; senior or graduate standing; consent of instructor.

BIO 585 Research***1-6 hrs.**

Individual research for qualified students in special areas of biology. Prerequisites: 3.0 grade point average in student's major; senior or graduate standing; consent of instructor.

*Note: Undergraduates are allowed to take 6 hours from BIO 480 and 485 and 6 hours from BIO 580 and 585, for a total of 12 hours.

Department of Chemistry

Professional accreditation by American Chemical Society

FACULTY *Professors Field (Chair), Taylor, Cummings (Emeritus), Glover (Emeritus) K. Kolb (Emeritus); Associate Professor Gayhart; Assistant Professors Andersh, Bosma, Campbell, Flint, Fry, McQuade; Adjunct Professor D. Kolb; Lab Coordinator Ragle.*

The objectives of the chemistry department are: to develop a scientific attitude toward problem solving; to graduate well-qualified chemistry and biochemistry majors for immediate professional employment or entrance to graduate study in chemistry, biochemistry or allied fields; to graduate chemistry majors with background for entrance to professional schools, e.g. medicine or dentistry; to graduate students with a good knowledge of both chemistry and business or chemistry and computer.

To achieve these professional objectives, the Department of Chemistry offers six curricular programs leading to a bachelor's degree. The programs are:

1. **Chemistry-Professional** for students wishing to make a career in chemistry or allied fields.
2. **Chemistry-Biochemistry** for students wishing to prepare for a career in biochemistry or related areas.
3. **Chemistry-Premedical** for students who wish to make a career in chemistry with the ultimate goal of entering medical, dental, or veterinary school.
4. **Chemistry-Teaching** for students wishing to teach science in secondary schools.
5. **Chemistry-Business** for students wishing to combine chemistry with a basic knowledge of business.
6. **Chemistry-Computer** for students who wish to major in chemistry but also include courses in computer science.

For all students majoring in any chemistry program the general departmental requirements are: A minimum of 32 semester hours of chemistry, one year of college-level physics, and a year of calculus. A third semester of calculus is highly recommended. A grade of C or higher must be earned in CHM 161, 166, 250, and 351 before continuing on to the next course in this sequence.

Advanced placement students earning a 5 in the AP exam will receive credit for CHM 161 and 162. Those who earn a 4 in the AP exam will receive credit for CHM 161.

Chemistry-Professional

For those who elect this program the specific chemistry courses required are: CHM 161, 166, 191, 250, 320, 351, 380, 392, 461, 462, 463, 480, 509, and 530. For those who desire certification, CHM 464, 510, 551, and 553 are required.

Chemistry-Biochemistry

In cooperation with the departments of biology and physics, a degree is offered in biochemistry. See listings under biochemistry/molecular biology in this catalog for information.

Chemistry-Premedical

This program is for the student who wishes to major in chemistry and also prepare for entrance to medical, dental, or veterinary school. The required chemistry courses are: CHM 161, 166, 191, 250, 320, 351, 365, 380, 392, 461, 463, and 480 plus 6 hours of additional courses in chemistry. In addition, a minimum of 12 hours of biology are required.

Professional Chemistry - Secondary Teaching

The required chemistry courses for this program are identical to those of professional chemistry. The appropriate certification courses as specified by the College of Education and Health Sciences are required.

Chemistry-Business Minor

This program is for the student who wishes to combine a background in both chemistry and business for the goal of immediate employment in technical or developmental chemistry or entrance to an MBA program. The required chemistry courses are: CHM 161, 166, 191, 250, 320, 351, 392, 461, and 463 plus 6 hours additional chemistry. In addition a minor in business administration as specified by the Foster College of Business Administration is required.

Chemistry-Computer

This is a program designed for students who wish to combine a basic knowledge of chemistry and other sciences with courses in computer technology. The required chemistry courses are: CHM 161, 166, 191, 250, 320, 351, 392, 461, and 463 plus 9 additional hours of chemistry electives. Approved computer-related courses are required.

Chemistry Minor

The minor in chemistry consists of CHM 161, 166, 250, 320, 351, 392, 461, and 463. One year of college-level physics and one semester of calculus are also required.

Medical Technology

In cooperation with the Department of Biology, a degree program is offered in medical technology. See the listing under medical technology in this catalog for information.

Course Descriptions

CHM 141 Introduction to Medical Technology 1 hr.

Profession and function of a medical technologist; job opportunities, current issues. Tour of a large hospital laboratory. Cross listed as BIO 141.

CHM 149 Fundamentals of General Chemistry 3-4 hrs. (Gen. Ed. FS)

Basic chemical concepts; description of familiar elements and their inorganic compounds. 4 hrs. credit if taken with laboratory.

CHM 150 Fundamentals of Organic-Biochemistry 3 hrs. (Gen. Ed. FS)

Various organic compounds: synthesis, reactions, and uses; emphasis on those occurring in living organisms. Prerequisite: one semester of college chemistry or consent of department. Not open to students with credit in CHM 151 or 152.

CHM 151 Fundamentals of Organic Chemistry 2 hrs. (Gen. Ed. FS)

Synthesis, reactions, and uses of organic compounds utilized by man. Prerequisite: one semester of college chemistry or departmental approval. Not open to students with credit in CHM 150.

CHM 152 Fundamentals of Biochemistry 2 hrs. (Gen. Ed. FS)

Clinical chemistry and its health related applications. Prerequisite: CHM 151 or one semester of organic chemistry. Not open to students with credit in CHM 150.

CHM 153 Organic - Biochemistry Laboratory 1 hr.

Introduction to techniques of isolation, purification, synthesis, and identification of organic compounds with emphasis on biologically important compounds. Prerequisites: CHM 151 and 152 or concurrent enrollment.

CHM 160 General Chemistry I 3 hrs. (Gen. Ed. FS)

Fundamental chemical principles and applications; descriptive properties of more useful elements. Prerequisites: satisfactory credits in high school algebra and chemistry or physics, or consent of Department Chair.

CHM 161 General Chemistry I 4 hrs. (Gen. Ed. FS)

Content of CHM 160, with laboratory. Prerequisites: satisfactory credits in high school algebra and chemistry or physics, or consent of Department Chair.

CHM 162 Engineering Chemistry 3 hrs. (Gen. Ed. FS)

Continuation of CHM 160 or 161. For students who will not take higher level chemistry courses. Prerequisite: CHM 160 or 161.

CHM 166 General Chemistry II 5 hrs.

Continuation of CHM 160 or 161; lecture and laboratory. Required for students who are preparing for further study in chemistry. Prerequisite: CHM 160 or 161.

CHM 191 Chemical Applications of BASIC Programming 1 hr.

Computer programming using BASIC. Emphasis on solution of chemical problems using the computer. Prerequisites: CHM 149 or 161, or concurrent enrollment.

CHM 250 Organic Chemistry 4 hrs.

Aliphatic and aromatic compounds; emphasis on class reactions. Prerequisite: one year of college chemistry.

CHM 299 Directed Studies in Chemistry 1-4 hrs.

Studies undertaken by freshman or sophomore students under the guidance of staff members. Prerequisites: consent of instructor and Department Chair.

CHM 300 Chemistry and Civilization 3 hrs. (Gen. Ed. TS)

For non-science majors: broad survey of the science of chemistry and its overall effect on civilization. Prerequisites: junior standing; major other than science or engineering.

CHM 306 Intermediate Analysis 3 hrs.

Quantitative analytical procedures; basic instrumental techniques. Prerequisites: CHM 166 or 207; CHM 250.

CHM 309 Representative Elements 1 hr.

Chemistry of the s- and p-block elements of the Periodic Table. Prerequisites: one year general chemistry; CHM 250; or consent of instructor.

CHM 310 Transition Elements 1 hr.

Chemistry of the d- and f-block elements of the Periodic Table. Prerequisites: one year general chemistry; CHM 250; or consent of instructor.

CHM 315 Environmental Chemistry 3 hrs.

Chemical principles applied to environmental systems; water, air, soils, conventional and hazardous wastes, thermodynamic principles, acid/base and redox chemistry, interfacial chemistry, analytical techniques. Prerequisite: CHM 162 or 166 or consent of instructor.

CHM 319 Inorganic Chemistry 3 hrs.

Preparation, properties, reactions, and uses of the elements and their compounds. Prerequisites: CHM 161, 166, 260.

CHM 320 Analytical Chemistry 4 hrs.

Introduction to modern analytical chemistry involving classical gravimetric and volumetric procedures combined with modern instrumental techniques. Lecture and laboratory. Prerequisites: CHM 166, 250.

CHM 351 Organic Chemistry 4 or 5 hrs.

Emphasis on theoretical and instrumental aspects. Prerequisite: CHM 250.

CHM 365 Cell and Molecular Biology
3-4 hrs.

Molecular organization of cells: chemistry and structure in relation to function. Methods and techniques of investigation. Four hours if taken with laboratory. Cross listed as BIO 365. Prerequisites: CHM 166, 250; C or better in BIO 124.

CHM 366 Biochemistry
3-4 hrs.

Introduction to enzymatic processes, bioenergetics, metabolism, and metabolic regulation. Methods and techniques of investigation. Four hours if taken with laboratory. Cross listed as BIO 366. Prerequisite: CHM/BIO 365 or consent of instructor.

CHM 380 Junior Seminar in Chemistry
0 hrs.

Weekly seminars presented by a variety of speakers pertaining to all aspects of Chemistry. Course may be repeated a maximum of three times. Pass/Fail. Prerequisites: Junior standing or consent of instructor.

CHM 391 Medical Terminology
1 hr.

Terminology used in all areas of medical and paramedical specialties. Emphasis on word building, technique, and understanding of typical medical reports. Cross listed as NUR 391. Prerequisites: one year each of college biology and chemistry.

CHM 392 Chemical Literature
1 hr.

Use of chemical literature. Prerequisite: CHM 250; CHM 351 or concurrent enrollment.

CHM 461, 462 Physical Chemistry
3 hrs. each

Mathematical treatment of laws governing chemical and physical changes. Prerequisites: CHM 320, 250; one year each of college physics and calculus.

CHM 463, 464 Physical Chemistry Laboratory
1 hr. each

Corequisite: CHM 461 or 462.

CHM 480 Senior Seminar in Chemistry
1 hr.

Weekly seminars presented by a variety of speakers pertaining to all aspects of Chemistry. Each student will present a seminar under the supervision of a faculty member. Prerequisites: Two semesters of CHM 380

CHM 491 Independent Studies in Chemistry
1-3 hrs.

Studies undertaken by well qualified advanced students under the guidance of staff members, with approval of the Department Chair. May be repeated for a maximum of 6 hrs. credit.

CHM 500 Chemical Topics
1-3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. Prerequisites: CHM 351 and 461.

CHM 508 Enzyme Chemistry
3 hrs.

Enzymes: kinetics, structure, specificity, reaction mechanisms, inhibition, and regulation. Cross listed as BIO 508. Prerequisites: 2 semesters of organic chemistry; one semester of differential and integral calculus; introductory biochemistry; or consent of instructor.

CHM 509 Advanced Inorganic Chemistry
3 hrs.

Theoretical-descriptive approach to inorganic chemistry. Emphasis on dependence of selected chemical and physical characteristics of elements and compounds on extranuclear structure. Prerequisites: CHM 320, 461.

CHM 510 Advanced Inorganic Chemistry Laboratory
1 hr.

Laboratory work in inorganic chemistry. Prerequisite: CHM 509 or concurrent enrollment.

CHM 530 Advanced Analytical Chemistry
4 hrs.

Theory and applications of modern qualitative, quantitative, and instrumental methods. Prerequisites: CHM 320, 462.

CHM 550 Industrial Organic Chemistry
1 hr.

Survey of modern industrial organic chemistry; emphasis on petroleum derivatives. Prerequisite: one year of organic chemistry.

CHM 551 Advanced Organic Chemistry
3 hrs.

Organic reactions and reaction mechanisms. Prerequisite: CHM 351.

CHM 553 Qualitative Organic Analysis
4 hrs.

Laboratory: systematic identification of pure organic compounds; analysis of mixtures. Prerequisites: CHM 320, 351, 392.

Department of Computer Science and Information Systems

FACULTY *Professors Haghighi, Liu, Nikolopoulos; Associate Professors Batra, Maskarinec, Miller (Chair), Park, Uskov; Assistant Professor Patton.*

The department offers baccalaureate degree programs in computer science and in computer information systems.

Computer scientists are mainly concerned with software development and systems design. They are usually employed by computer manufacturers and software houses specializing in systems software and are expected to produce operating systems, language translators, data management software, and other programming, processing, and operating aids to be used in conjunction with computer hardware. As developers of basic computer technology, their preparation is highly mathematical and scientific in its orientation.

Computer information specialists are principally users of computer technology. They are usually employed as programmer/analysts, lead programmers, and systems project leaders for applications in business, industry, and government. Course work in this major emphasizes systems analysis and design, programming, applied computer science, systems implementation, and management.

For students not majoring in the department, we offer a minor which can be tailored to the individual's goals and needs.

Students intending to take only one course in the department should enroll in either CIS 102 or CS 104 if they desire a detailed treatment of a programming language, or CIS 300 if they desire a general discussion of computers and their impact on society.

Computer Science

The department has course offerings of sufficient breadth to allow specialization in a number of areas including database concepts, software design, scientific programming, programming language concepts, and computer elements and architecture. Majors are encouraged to choose an area of specialization based upon their career goals and to select their electives, with guidance from their advisor, to support that choice. The general requirements for the computer science major are:

1. Computer Science:
 - a. 45 semester hours including CS 106, CS 121, CS 206, CS 216, CS 302, CS 350 or EE 311, CS 380, CS 406, and CS 519;
 - b. one course from each of the following groups of courses: CS 310 or CS 405; CS 514 or CS 521; CS 343 or CS 550;
 - c. at least 24 semester hours must be at or above the 300 level;

- d. a grade of C or better is required in all computer science courses submitted in fulfillment of the major requirements.
2. Mathematics: MTH 120, MTH 121, MTH 122, MTH 207, MTH 223, and MTH 325.
3. Science:
 - a. a two-semester sequence (eight semester hours) in laboratory science for science majors;
 - b. two additional one-semester courses in science; one or both of these additional science courses may be replaced by one or both of the following courses emphasizing quantitative methods: IE 313, IE 314.

Computer Information Systems

The general requirements for the computer information systems major are:

1. Computer Science and Computer Information Systems:
 - a. 33 semester hours including CIS 203, CS 106, CS 121, CS 206, CS 310, CS 343, CS 403, and CS 405. (CS 406 is strongly recommended.);
 - b. at least 21 hours must be at or above the 300 level;
 - c. a grade of C or better is required in all computer science and computer information systems courses presented in fulfillment of the major requirements.
2. Mathematics: MTH 105 (or equivalent) and either MTH 115 or MTH 121 (MTH 116 or MTH 121 is recommended), and MTH 120.
3. Statistics: QM 262 and QM 263 (or equivalents).
4. Accounting: ATG 157 and ATG 158.
5. Business: BMA 352.
6. Economics: ECO 221 (or ECO 100).
7. Finance: FIN 322.
8. Psychology: PSY 103 (or PSY 104).
9. Supporting Area: Each computer information systems major must select a minor, or at least 18 semester hours in an approved sequence of courses in a supporting area; at least 12 of these hours must be above the freshman level. A frequent choice is the business administration minor. Several other options exist and interested students should consult with their major advisor for assistance in selecting one suitable to their goals and needs. Students should also consult the department offering the minor. Students choosing the business administration minor must have that choice approved by the College of Business Administration.

Computer Science and Information Systems Minor

The requirements for a minor in computer science and information systems are:

1. a total of 21 hours in computer science or computer information systems courses;
2. at least 12 of these hours must be in courses numbered 300 or above.

Non-majors interested in the minor should consult the department and develop an individualized plan. For example, a student seeking to achieve a working competence in information systems might select CS 106, CS 121, CS 310, CS 343, CS 403, CS 405, and CS 406. Plans to meet other objectives can be worked out with a department advisor.

Course Descriptions

Computer Information Systems

CIS 102 Introduction to Computer Information Systems with BASIC 3 hrs.

Fundamental concepts of computer programming and design of algorithms. Problem solving using BASIC. Introduction to flow chart language and use of software packages. Functional limitations and capacities of computers.

CIS 203 Data Processing with COBOL 3 hrs.

Solution of data processing problems using COBOL. Introduction to file handling and use of computers in a business environment. Prerequisites: Previous high school or college programming courses.

CIS 300 Computers and Society 3 hrs. (Gen. Ed. TS)

History of computers; their use, limitations, and impact on society; Internet and the World Wide Web; creation of Web content. Prerequisite: Junior standing or consent of instructor.

CIS 377 Advanced COBOL Systems and Environments 3 hrs.

Design and implementation of production-oriented COBOL system projects. Environments for development and implementation of COBOL systems in both batch and interactive modes. JCL for resource management, file processing, and multi-key file processing. Comparison and portability issues in different COBOL system environments. Cross-listed as BMA 377. Prerequisite: CIS 203.

CIS 571 Computer Law 3 hrs.

Ethical considerations of computer scientists and computer-related security and privacy issues; copyright, patent, trademark, and trade secret issues, deceptive trade practices, computer crime, contract issues, venture capitalists, tax issues, computer torts, constitutional issues, and international trade considerations. Prerequisite: one semester of programming.

CIS 572 Computing Services Management 3 hrs.

Management of computer resources; planning for computing services; operational considerations; evaluation of service. Prerequisite: CS 310 or equivalent.

CIS 588 Introduction to Expert Systems 3 hrs.

Knowledge-based systems design and implementation; expert systems shells and programming environments; validation and implementation of expert systems; case studies/laboratories. Cross-listed as IE 588. Prerequisites: two semesters of computer programming and one semester of statistics, or consent of instructor.

Computer Science

CS 104 Computers and Programming with FORTRAN 3 hrs.

Problem solving and algorithm implementation using FORTRAN: formatted I/O, arrays, character data, and subprograms. Assignments in numerical and non-numerical applications. Prerequisite: MTH 105 or 109 or equivalent.

CS 106 Introduction to Programming and Computer Science 3 hrs.

Problem solving, algorithm development, and implementation using modern structured programming language. Software design methodologies. Introduction to Bradley University computer science software development environment. Programming language features: primitive and structured data types, data description, data and sequence control mechanisms, subprograms. In-depth introduction to computer science. Prerequisite: MTH 109 or MTH 112 or equivalent.

CS 121 Introduction to Data Structures 3 hrs.

Continuation of CS 106: introduction to file processing, searching, sorting, and simple data structures. Emphasis on using software methodologies for large programs. Data abstraction, validation, verification, and analysis of programs. Prerequisite: a grade of C or better in CS 106 or equivalent.

CS 206 Assembler Language I 3 hrs.

Computer organization and assembler language programming. Prerequisite: CS 106 or 104.

CS 216 Introduction to Programming Languages 3 hrs.

Formal languages, BNF, and compiling. Unusual languages such as LISP, SNOBOL, and APL. Conventional languages such as FORTRAN, PL/I, and ADA. Prerequisites: CS 121, 206.

CS 302 Advanced Data Structures & Algorithms 3 hrs.

Extends coverage of CS 121 data structures. Applications include data structures for searching and sorting, memory management, graphs, and strings. Emphasis on understanding data abstraction and relationship to good programming practices in large programs. Implementation of data structures and evaluation of results. Prerequisites: a grade of C or better in CS 121. Corequisite: CS 206.

CS 310 Information Structures and Management**3 hrs.**

File organizations and access methods. Sort/merge operations; hashing schemes for storage and retrieval. Projects involve data validation; creation and updating of files; simulation and/or implementation of direct or indexed files. Prerequisite: CS 121.

CS 320 Symbolic Logic**3 hrs.**

Logical systems; propositional and predicate calculi. Truth tables, proofs, tautologies, principles of inference, Boolean algebra, DeMorgan's Laws, quantifiers, representations, and set theory. Cross-listed as PHL 320. Prerequisite: MTH 120.

CS 343 Data Communications and Communication Networks**3 hrs.**

Fundamentals of data communications: data transmission, data encoding, digital data communication techniques, data link control, and multiplexing. Introduction to switched and shared medium communication networks. Prerequisites: a grade of C or better in both MTH 120 and CS 121.

CS 350 Computer Organization**3 hrs.**

Transfer and coding of information. Basics of logic design. Structure, organization, and operational principles of modern computer systems. Case study of a simple mini/microcomputer. Prerequisite: CS 206.

CS 380 Foundations of Computer Science**3 hrs.**

Fundamental concepts of computer science related to programming. Models of computable functions, undecidable problems, recursive functions. Automata, languages, grammars, parsing, parallel architectures, and algorithms. Prerequisites: CS 121; MTH 120.

CS 403 Systems Design and Analysis**3 hrs.**

Methodology of building a complete computer based system. Case studies. Prerequisite: CS 310 or 302.

CS 405 Database Management Systems**3 hrs.**

Relational, hierarchical, and network database models. Conceptual and physical schema. Data definition and data manipulation languages. Database administration, security, integrity, and backup recovery. Query optimization. Normal forms and database design. Latest developments in databases. Prerequisite: CS 310 or 302.

CS 406 Introduction to Software Engineering**3 hrs.**

Product engineering and control activities. Software engineering; relationship to other disciplines. Phases of software products and products of software engineering. Prerequisite: CS 216 or 310.

CS 410 Directed Individual Studies**1-6 hrs.**

Individual project developed under supervision of a CS faculty member. May be repeated under a different topic once. Maximum of three semester hours per semester. Prerequisite: consent of department.

CS 412 Topics in Computer Science**3 hrs.**

Topics of special interest which may vary each time course is offered. Repeatable under a different topic for a maximum of six hours. Prerequisites: consent of instructor.

CS 500 JAVA Programming and Web Design**3 hrs.**

Introduction to JAVA programming and PERL. Internet and Web-based applications, design and building of multimedia systems, user interface design, Gateway Interface (CGI) scripting; VRML. Prerequisite: CS 121 or equivalent.

CS 503 Programming Methodology**3 hrs.**

Predicate calculus, Dijkstra's methodology of algorithm development. Algorithm development. Algorithmic language characteristics; syntax, semantics. Postconditions and preconditions. Verification of postcondition states satisfied by algorithmic programs executed from preconditions. Problems. Prerequisites: a grade of C or better in both MTH 120 and CS 121.

CS 505 Advanced Topics in Databases**3 hrs.**

Current trends in information technology. Hypertext, navigation, intelligent navigation with expert systems and neural nets, multimedia, text management and retrieval, deductive and object-oriented databases, distributed databases, the integrated intelligent database. Prerequisite: CS 405 or equivalent.

CS 510 Numerical Methods I**3 hrs.**

Introduction to numerical and computational aspects of various mathematical topics: finite precision, solutions to nonlinear equations, and interpolation, approximation, linear systems of equations, and integration. Cross listed as MTH 510. Prerequisites: CS 104 or 106; MTH 207 and 223.

CS 511 Numerical Methods II**3 hrs.**

Continuation of CS/MTH 510: further techniques of integration, ordinary differential equations, numerical linear algebra, nonlinear systems of equations, boundary value problems, and optimization. Cross listed as MTH 511. Prerequisites: MTH 224 or 345; CS/MTH 510.

CS 514 Algorithms**3 hrs.**

Design and analysis of algorithms. Dynamic structures maintenance and hashing. Searching, sorting, and traversal. Time and space requirements; simplification; computational complexity; proof theory and testing; NP-hard and NP-complete problems. Prerequisites: a grade of C or better in CS 302; one semester of statistics.

CS 516 Programming Languages**3 hrs.**

Design concepts of high-level languages. Description languages; grammars and syntax; expressions and data structures; selection and control structures; constructs for input and output; subprograms and parameter communications. Prerequisite: CS 302 or 310.

CS 518 Programming Language Translation**3 hrs.**

Overview of programming language translation with emphasis on modern compiler construction. Lexical analysis, parsing, syntax and semantic analysis, code generation, garbage collection, and optimization. Prerequisite: grade of C or better in CS 302. Corequisite: CS 516 or CS 216.

CS 519 Introduction to Operating Systems**3 hrs.**

Design principles of software for operation of computers. Storage, processor, device, and file management as an integrated system; input/output control. Prerequisites: a grade of C or better in CS 302.

CS 521 Introduction to Artificial Intelligence**3 hrs.**

Basic concepts and techniques of artificial intelligence: philosophical considerations, examples, pattern recognition, search strategies, game playing, knowledge representation, logic and resolution, planning, vision, natural language processing, programming in LISP. Prerequisite: a grade of C or better in CS 302.

CS 522 Neural Networks, Knowledge-based Systems, and Applications**3 hrs.**

Theorem proving, logic programming, expert systems, uncertainty, fuzzy logic, machine learning, neural networks, programming in PROLOG. Prerequisites: a grade of C or better in CS 302; one course in statistics.

CS 530 Client-Server Computing with JAVA**3 hrs.**

Continuation of CS 500. JAVA programming in client-server environment. JAVA distributed computing and distributed object computing protocols. Internet and object Web computing in JAVA. JAVA Enterprise computing technologies. Prerequisite: CS 500 or equivalent.

CS 535 Introduction to Computer Graphics**3 hrs.**

Mathematics and algorithms of computer graphics. Device differences, lines, arcs, curves, transformations, input and output primitives. Data structures for geometric entities. Prerequisites: MTH 207, 223; CS 302.

CS 550 Advanced Computer Architecture**3 hrs.**

Fundamental computer sub-systems: central processing unit; memory systems; control and input/output units. General purpose computing systems design. Examples from existing typical computers. Prerequisite: CS 350.

CS 570 Systems Performance and Modeling**3 hrs.**

Techniques of modeling processes and the resources they share: intuitive, simulation, and mathematical approaches. Performance prediction, bench marking, and synthetic loading. Prerequisites: a grade of C or better in CS 310 or 302; one semester of statistics.

Economics (L.A.S.)

FACULTY Professors Goldberg, Highfill, Sattler, Scott, Weinstein; Associate Professors Felder, O'Brien, Wojcikewych (Chair); Assistant Professor Polley.

The Department of Economics offers a major in both the College of Liberal Arts and Sciences and in the Foster College of Business Administration. Normally, individuals planning a career in government, politics, public policy, or the law should be in the College of Liberal Arts and Sciences. Students interested in an economics major are urged to consult with a departmental advisor for a suggested course of study that will serve their career objectives.

The departmental requirements for the major are designed to provide the student with: (1) a knowledge of basic economic theory; (2) quantitative tools for dealing with economic variables; (3) more specialized understanding of particular areas of interest in economics; and (4) a broad background in the humanities, in the social sciences, and in the physical sciences.

Individuals planning to study for the Ph.D. in economics should take either a minor in mathematics or the following courses: MTH 121, MTH 122, MTH 207 and MTH 223. It is strongly advised that MTH 420 also be taken.

Students enrolling in the Department of Economics will meet its requirements by completing the following program.

Course Requirements:

Economics 221 (or 100), and 222	6
Economics Colloquium for Juniors (300)	1
Intermediate Microeconomic Theory (332)	3
Intermediate Macroeconomic Theory (333)	3
Economics Colloquium for Seniors (400)	1
Senior Seminar (498, 499)	3
Economics Electives	6
At least one heterodox economics course (ECO 313, 345, 351, 444)	3
Minimum of 26 semester hours in economics including at least 23 semester hours above the 100 level.	
QM 262, 263, or equivalent	6
Philosophy	3
Mathematics (Calculus), MTH 121 or MTH 115	4
ATG 157 Accounting Principles - Financial	3

Majors must receive a grade of C or better in Economics 332, 333, and 499.

Economics majors must demonstrate proficiency with commonly used computer software by passing a proficiency test. Students should contact the Student Services Office of the Foster College of Business Administration for details of testing.

Economics Minor

The purpose of the minor in economics is to provide students with a coherent and guided study of economics as it relates to their special discipline or interests. Students must fulfill the following requirements:

1. ECO 100 or 221, and 222.
2. ECO 332 or 333 (with a grade of C or better)
3. 6 hours of junior-senior level economics courses.
4. 9 hours of the 15 hours must be taken at Bradley.
5. The minor must be declared no later than the completion of the third economics course.

Students in an economics minor must consult with a departmental advisor at the time that the minor is declared to plan a course of study that will serve their objectives.

The economics curriculum is designed to (a) provide students from other disciplines an opportunity to broaden their understanding of the economic forces that shape societies; (b) provide an opportunity for in-depth study of economics for students planning careers in education, law, government service, business, and other careers in which a more specialized understanding of economics is desirable; and (c) allow students planning to engage in economics professionally to prepare for graduate work.

All courses offered by the Department of Economics are available for students in the College of Liberal Arts and Sciences. For convenience these courses are listed below by the title only. A complete listing of courses and course descriptions is given in the Department of Economics section under the Foster College of Business Administration.

ECO 100 Introduction to Economics	3
ECO 200 Economics in Literature	1
ECO 221 Principles of Microeconomics	3
ECO 222 Principles of Macroeconomics	3
ECO 300 Economics Colloquium for Juniors	1
ECO 301 Money and Banking	3
ECO 305 Public Expenditure and Finance	3
ECO 310 Labor Problems	3
ECO 313 American Economic History	3
ECO 319 Introduction to Econometrics	3
ECO 325 Urban Economics	3
ECO 332 Intermediate Microeconomic Theory	3
ECO 333 Intermediate Macroeconomic Theory	3
ECO 335 Managerial Economics	3
ECO 345 Comparative Economic Systems	3
ECO 351 Economic Development	3
ECO 352 Industrial Organization	3
ECO 362 Economics and Law	3
ECO 390 International Monetary Economics	3
ECO 391 International Trade	3
ECO 399 Special Topics in Economics	3
ECO 400 Economics Colloquium for Seniors	1
ECO 418 Mathematical Economics	3
ECO 434 Readings in Economics	1-6
ECO 444 History of Economic Thought	3
ECO 498 Senior Seminar in Economics, Part I	0
ECO 499 Senior Seminar in Economics, Part II	3

Department of English

FACULTY Professors Chambers, Chapman, Jost, Stein; Associate Professors Blouch, Brill, Conley, Dusenbery, Palakeel, Vickroy, Worley; Assistant Professors Baker, Craig, Katz, Moloney, Prescott, Worthington; Lecturers Burgauer, Herbert, Leathers.

Chair: Dusenbery; *Coordinator of Composition:* Worley; *Associate Chair and Coordinator of Graduate Studies:* Prescott.

The Department of English offers a scholarly environment for writing and the study of literature. The department believes that this environment will enable students to become lifelong learners, responsible citizens, and successful professionals. The department is committed to

1. developing students' skills for creative, academic, or professional purposes.
2. strengthening students' critical thinking and research skills;
3. increasing students' knowledge and appreciation of the literatures of diverse periods and cultures; and
4. broadening students' understanding of and facility with language.

Students who major or minor in English develop their skills in preparation for careers in teaching, publishing, industry, business, or service agencies; for such professional studies as law, library science, or medicine; or for graduate studies in literature, language, or creative writing.

Bachelor of Arts Degree in English

1. General Requirements

The Bachelor of Arts is the only degree given in English. The B.A. degree requires completion of a 202 or 300-level foreign language course. Only three hours of foreign language are required if the student places at the 202 level or above; as many as 14 hours may be required if the student has less proficiency.

In addition to fulfilling the requirements for a B.A. degree, all English majors must complete a minimum of 33 hours in courses above the 100-level, distributed according to the following requirements. (English majors are advised not to fulfill the general education HV-literary analysis requirement by taking ENG 124 or 127).

2. Requirements at the 200-Level

- | | |
|---|----|
| ENG 233 American Literature to 1865 | 12 |
| ENG 235 American Literature 1865 to Present | |
| ENG 237 British Literature to 1800 | |
| ENG 239 British Literature 1800 to Present | |

3. Requirements at the 300-Level

- | | |
|---------------------|---|
| ENG 347 Shakespeare | 3 |
|---------------------|---|

4. Five different courses from at least four of the following groups:

- | |
|----|
| 15 |
|----|

Group 1. British Periods

ENG 341 Medieval English Literature
 ENG 344 Renaissance English Literature
 ENG 358 18th Century British Literature
 ENG 361 British Romantic Literature
 ENG 363 British Victorian Literature
 ENG 364 20th Century British Literature

Group 2. American Periods

ENG 332 Early American Literature
 ENG 334 19th Century American Literature
 ENG 336 20th Century American Literature

Group 3. Genres

ENG 368 Science Fiction and Fantasy
 ENG 372 Poetry as Genre
 ENG 373 Fiction as Genre
 ENG 374 Drama as Genre

Group 4. Individual Authors

ENG 378 Individual Authors

Group 5. Cultural Literary Studies

ENG 329 Studies in African American Literature
 ENG 330 Studies in Native American Literature
 ENG 331 Studies in Women Writers
 ENG 381 Literatures of Asia

Group 6. Topics in Language and Composition

(One course required for Illinois teacher certification.)

ENG 311 Introduction to Language
 ENG 312 English Grammar
 ENG 580 Methods of Teaching Composition

Group 7. Criticism and Theory

ENG 370 Literary Criticism and Theory

Group 8. Writing Courses

(In conjunction with a senior project that emphasizes writing, one or two of these courses enable a student to acquire a significant writing emphasis within the English major.)

ENG 207 Creative Writing I
 ENG 300 Exposition
 ENG 301 Argumentative Writing
 ENG 303 Autobiography
 ENG 304 Research in Individual Disciplines
 ENG 305 Technical Writing
 ENG 306 Business Communication
 ENG 307 Creative Writing II
 ENG 407 Creative Writing III
 ENG 492 Practicum in English
 ENG 503 Creative Non-Fiction
 ENG 507 Workshop for Writers
 (ENG 300, ENG 301, ENG 304, ENG 305, ENG 306 are only counted towards the major if taken in addition to the University's composition requirement).

5. Requirements at the Senior Level 3

Every English major is required to complete a significant research writing project relating to interests/needs and including an audience, publishing, or organizational context. This requirement can be satisfied by ENG 480 or ENG 495. Majors wanting special project work in creative writing will take ENG 495. ENG 507 and ENG 580 will not satisfy this requirement.

ENG 480 Senior Project
 ENG 495 Independent Study

English Major Options

The English faculty encourages majors to plan their schedules on the basis of both intellectual and career interests. The following options illustrate some ways in which an English major can be combined with a minor or selected electives to produce excellent preprofessional preparation. Consult with faculty advisor to develop an individualized plan.

Teacher Education Option

For students wishing to meet the requirements for a teaching certificate in English from the Illinois State Board of Education.

General Education	40
Foreign Language	3-14*
English major (includes 3 from ENG 311, 312, or 580 for certification)	33
Secondary Education professional courses	34-38
Electives	3-12**
Total	124

Preprofessional or Graduate School Option

Prepares student for professional training (such as Law School or Library Science) or Graduate School in English.

General Education	40
Foreign Language	3-14*
English Major	33
Minor, depending on interest (for law school, political science; for library science, computer science and/or another CLAS area; for graduate school, foreign language, history, philosophy, African-American studies)	20
A second minor, or electives	20**
Total	124

English Major/Business Minor Option

For students interested in an MBA program or a number of business and professional fields.

General Education	40
Foreign Language	3-14*
English Major	33
Business Minor (Some Business Minor courses will fulfill gen. ed.)	27-30
Electives or second Minor	10-24**
Total	124

English Major/Writing Option

For students interested in creative writing or preparation for professional writing, publishing, editing, advertising, etc.

General Education	40
Foreign Language	3-14*
English Major (ENG 495 could be creative project)	33
Electives, or Minor (suggested: mass communications for students interested in advertising), or courses selected from creative writing sequence (ENG 207, 303, 307, 407, 503, 507), or advanced writing sequence (ENG 300, 301, 304, 305, 306), ENG 492, ENG 580	37-48**
Total	124

* Candidates for the B.A. degree must meet the University foreign language requirements.

** Number of elective hours is determined by number of hours needed in foreign language to meet B.A. requirements.

Minors in English

I. Minor in Literature

Required Courses

The English minor in literature provides (1) a foundation in the historical study of literature and (2) an opportunity to construct an individual program in English, American, and other literatures, literary theory, and genre studies.

ENG 233 American Literature to 1865 or ENG 235 American Literature 1865 to Present	3
ENG 237 British Literature to 1800 or ENG 239 British Literature 1800 to Present	3
ENG 347 Shakespeare	3

Electives

Three courses from any two or more of the following groups: Group 1, British Periods; Group 2, American Periods; Group 3, Genres; Group 4, Individual Authors; Group 5, Cultural Literary Studies; and Group 7, Criticism and Theory.

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II. Minor in Creative Writing

Three of the following:

ENG 207 Creative Writing I	9
ENG 303 Autobiography	
ENG 307 Creative Writing II	
ENG 407 Creative Writing III	
ENG 495 Independent Study	

One course from 3 of the following groups:

GROUP 1: British Periods	9
GROUP 2: American Periods	
GROUP 3: Genres	
GROUP 4: Individual Authors	
GROUP 5: Cultural Literary Studies	
GROUP 6: Topics in Language and Composition (excluding ENG 580 Methods of Teaching Composition)	
GROUP 7: Criticism and Theory	

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III. Minor in Professional Writing

This minor is intended to help prepare students for writing-intensive jobs or careers, or for advanced study.

Three of the following

ENG 305 Technical Writing	9
ENG 306 Business Communication	
One of ENG 311/FLL 311 Introduction to Language ENG 312 English Grammar	

Three selected from the following categories

- One of ENG 300 Advanced Writing-Exposition
ENG 301 Advanced Writing-Argumentative Writing
ENG 304 Advanced Writing-Research in Individual Disciplines
- One of ENG 207 Creative Writing I
ENG 303 Autobiography
- One or two of ENG 506 Writing in the Professions
ENG 550 Language Theory

- ENG 560 Writing Theory
ENG 580 Theories and Methods of Teaching Composition
- ENG 492 Practicum in English
 - One upper-division literature course (writing intensive) upon approval of department chair.

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Course Descriptions

Lower Division

ENG 101 English Composition 3 hrs. (Gen. Ed. C1)

Principles of clear and effective writing; analysis of essays as models for writing. Required for all freshmen.

ENG 115 Introduction to Literature 3 hrs. (Gen. Ed. HL)

Elements, techniques, and forms of fiction, drama, and poetry.

ENG 121 Early European Writers 3 hrs. (Gen. Ed. HL)

Representative works by significant writers of the Classical, Medieval, and Renaissance periods.

ENG 122 Later European Writers 3 hrs. (Gen. Ed. HL)

Representative works by significant writers of the 18th, 19th, and 20th centuries.

ENG 124 American Writers 3 hrs. (Gen. Ed. HL)

Representative works by significant writers from early periods to the present.

ENG 127 British Writers 3 hrs. (Gen. Ed. HL)

Representative works by significant writers from the Middle Ages to the present.

ENG 129 African American Literature 3 hrs. (Gen. Ed. HL)

Introduction to African American literature from the 1700's to the present.

ENG 190 Women in Literature 3 hrs. (Gen. Ed. HL)

Images of women as portrayed in literature. Readings selected from established classics, as well as more recent works by and about women. Women of diverse personalities meeting particular problems in particular environments and times.

ENG 233 American Literature to 1865 3 hrs.

Introduction to the aesthetic and cultural history and to significant texts.

ENG 235 American Literature 1865 to Present 3 hrs.

Introduction to the aesthetic and cultural history and to significant texts.

ENG 237 British Literature to 1800 3 hrs.

Introduction to the aesthetic and cultural history and to significant texts.

ENG 239 British Literature 1800 to Present 3 hrs.

Introduction to the aesthetic and cultural history and to significant texts.

Upper Division Advanced Writing Courses

ENG 300 Exposition

3 hrs. (Gen. Ed. C2)

Intensive practice in major techniques of exposition. Practical writing situations. Prerequisite: ENG 101 and junior standing.

ENG 301 Argumentative Writing

3 hrs. (Gen. Ed. C2)

Trains ability to think critically and write persuasively; logical and emotional appeals in writing. Prerequisite: ENG 101 and junior standing.

ENG 304 Research in Individual Disciplines

3 hrs. (Gen. Ed. C2)

Major research paper on a topic related to student's major. Training in a variety of writing techniques. Prerequisite: ENG 101 and junior standing.

ENG 305 Technical Writing

3 hrs. (Gen. Ed. C2)

For engineering and science students: techniques of exposition and report writing. Prerequisite: ENG 101 and junior standing.

ENG 306 Business Communication

3 hrs. (Gen. Ed. C2)

Principal types of business letters and reports. Prerequisite: ENG 101 and junior standing.

Literature and Language

ENG 311 Introduction to Language

3 hrs.

Introduction to the study of language; its structure, acquisition, and function in society. Cross listed as FLL 311.

ENG 312 English Grammar

3 hrs.

Study of English grammatical structures. Applications of grammatical theory to written texts. Of particular value to elementary teaching majors and secondary English teaching majors.

ENG 329 Studies in African American Literature

3 hrs.

Intensive study of selected literary works, authors, and movements in African American literature.

ENG 330 Studies in Native American Literature

3 hrs.

Intensive study of the diverse literatures of Native American peoples. Novels, short stories, poetry, literary criticism.

ENG 331 Studies in Women Writers

3 hrs.

Intensive study of literary and critical texts written by women.

ENG 332 Early American Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 334 19th Century American Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 336 20th Century American Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 341 Medieval English Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 344 Renaissance English Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 347 Shakespeare

3 hrs.

Intensive study of selected plays and poetry of Shakespeare.

ENG 358 18th Century British Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 361 British Romantic Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 363 British Victorian Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 364 20th Century British Literature

3 hrs.

Intensive study of issues, movements, or themes characteristic of the period.

ENG 368 Science Fiction and Fantasy

3 hrs.

Study of theories and significant examples of science fiction and fantasy.

ENG 370 Literary Criticism and Theory

3 hrs.

Survey of literary criticism and theory from classical Greece to the 20th century. Emphasis on development of philosophies of literature and literary criticisms and theories.

ENG 372 Poetry as Genre

3 hrs.

Study of theories and significant examples of poetry as genre.

ENG 373 Fiction as Genre

3 hrs.

Study of theories and significant examples of fiction as genre.

ENG 374 Drama as Genre

3 hrs.

Intensive study of movements, theories, and forms in the genre of drama.

ENG 378 Individual Authors

3 hrs.

Studies in the works of a selected author or authors. Course content of individual sections to be selected by instructor. May be repeated with a different author(s) for a maximum of nine hours, only six of which will count for English requirement.

ENG 380 Topics in Language and Literature**3 hrs.**

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under different topics for a maximum of 6 hours credit.

ENG 381 Literatures of Asia**3 hrs. (Gen. Ed. NW)**

Study of the cultural traditions of Asia through selected literary classics. Prerequisites: 3 hrs. of college-level literature or consent of instructor.

ENG 480 Senior Project**3 hrs.**

Systematic practice in research methods and development, production, and presentation of an individual project. Prerequisite: senior standing.

ENG 492 Practicum in English**1-3 hrs.**

Supervised writing projects in conjunction with student service, volunteer, or work activities. Pass/Fail. Prerequisites: completion of junior-level composition requirement; consent of Department Chair.

ENG 495 Independent Study**1-3 hrs.**

Independent study and research in a specific field of English language or phase of literary production. May be repeated for a maximum of 6 hrs. credit. Prerequisite: consent of Department Chair.

ENG 500 Theory and Practice of English**3 hrs.**

Overview of the practices, theories, and history of the field of English and an introduction to the Bradley program. Required of all graduate students in English. Must be taken in the first nine hours.

ENG 506 Writing In the Professions**3 hrs.**

Study and practice of the writing conventions and rhetorical characteristics of individual professions.

ENG 508 Composing Hypertext**3 hrs.**

Elements of hypertext composition, mechanics, style, and theory. Prerequisite: graduate standing; or specially qualified junior or senior; or completion of C2 general education requirement; or consent of instructor.

ENG 550 Language Theory**3 hrs.**

Study of the relationships between language and writing, thinking, and society. Prerequisite: senior or graduate standing.

ENG 560 Writing Theory**3 hrs.**

Theoretical approaches to the study of writing. Prerequisite: senior or graduate standing.

ENG 570 Contemporary Literary Criticism**3 hrs.**

Advanced study of contemporary critical approaches to literature, including, but not limited to, feminism, semiotics, cultural criticism, poststructuralism. Study of the critical theories and applications of the criticisms to literary texts.

ENG 580 Theories and Methods of Teaching Composition**3 hrs.**

Theoretical and pedagogical issues and approaches in teaching composition.

Creative Writing Sequence**ENG 207 Creative Writing I****3 hrs.**

Introduction to imaginative writing. Writing and readings: fiction, poetry, plays.

ENG 303 Autobiography**3 hrs.**

Practice in informal and formal writing based on personal experience. Problems of investigation and communication. Prerequisite: ENG 101 and junior standing.

ENG 307 Creative Writing II**3 hrs.**

Intensive study and production of imaginative work. Prerequisite: ENG 207 or consent of instructor.

ENG 407 Creative Writing III**3 hrs.**

Individual projects. Emphasis on manuscript preparation. Prerequisites: ENG 207, 307; consent of instructor.

ENG 503 Creative Non-Fiction**3 hrs.**

Practice in writing literary non-fiction genres, such as autobiography, biography, nature writing, and travel writing. Prerequisite: submission to instructor of an acceptable manuscript.

ENG 507 Workshop for Writers**3 hrs.**

Individual guidance in creative writing projects. May be repeated for a maximum of six hours credit. Prerequisite: consent of instructor, after submission of an acceptable manuscript.

Environmental Science Program

FACULTY COORDINATING COMMITTEE Taylor
(Chemistry); Foster (Geological Sciences);
McConaughay (Biology); Roos (Physics).

The interdepartmental major in environmental science is sponsored jointly by the departments of biology, chemistry, geological sciences, and physics. The objectives of the program are to provide the student with the necessary background for a professional career in the area of environmental science or entrance into a graduate program.

A student must choose one of four concentrations: environmental science-biology, environmental science-chemistry, environmental science-geological sciences, or environmental science-physics. Each student will be assigned an advisor from the department of the chosen concentration. For all concentrations the student must take the following core courses:

BIO 123, 124 Principles of Biology	8
BIO 460 Ecology	4
BIO 470 Seminar	1
CHM 161, 166 General Chemistry	9
CHM 250 Organic Chemistry	4
CHM 315 Environmental Chemistry	3
GES 101, 102 Principles of Earth Science	4
GES 110, 111 Principles of Historical Geology	4
One of the following:	3-4
GES 201 Mineralogy	
GES/BIO 302 Invertebrate Zoology	
GES 312 Structural Geology and Tectonics	
GES 321 Paleontology	
GES 450 Hydrogeology	
Calculus ¹	8
PHY 107, 108 General Physics	8
	56-57

Each concentration has the following additional requirements:

Biology Concentration

BIO 223 Organismic Biology	5
BIO 450 Limnology or	
BIO 463 Plant Ecology	4
Two of the following:	7-8
BIO 302 Invertebrate Zoology	
BIO 319 Ethology	
BIO 323 Comparative Anatomy	
BIO 324 Plant Diversity	
BIO 330 Systematic Botany	
BIO 334 Reproduction and Identification of Flowering Plants	
BIO 381 Comparative Animal Physiology	
BIO 395 General Microbiology	
Two additional biology courses approved by the advisor (3 of these hours may be readings/research)	6-8
	21-24

The student must have a grade of C or better in all biology courses.

Geological Sciences Concentration

GES 201 Mineralogy*	4
GES 202 Optical Crystallography	4
GES/BIO 302 Invertebrate Zoology*	4
GES 312 Structural Geology and Tectonics*	4
GES 421 Stratigraphy	4
GES 493/494 Special Topics	2
	22

The student must have a grade of C or better in all geological sciences courses.

*Required if not taken in the core.

Physics Concentration

PHY 110, 201 University Physics**	8
PHY 202 Applied Quantum Physics	3
and the appropriate section of PHY 350 Advanced Physics Experiments	1
Three of the following:	9
PHY 320 Optics	
PHY 330 Nuclear Physics	
PHY/BIO 345 Radiation Biology	
PHY 361 Electronics	
	21

**Replaces PHY 107, 108 in the core.

Chemistry Concentration

CHM 191 Chemical Applications of BASIC Programming	1
CHM 320 Analytical Chemistry	4
CHM 351 Organic Chemistry	4
CHM 392 Chemical Literature	1
CHM 461 Physical Chemistry	3
CHM 530 Advanced Analytical Chemistry	4
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¹The biology and geological sciences concentrations require only one semester of calculus (4 hours).

Department of Foreign Languages

FACULTY *Professor Dille; Associate Professors Cisneros, Harris, Lindenlaub, Walker (Chair).*

The Department of Foreign Languages offers training in French, German, Hebrew, Japanese, Portuguese, Russian, and Spanish. The courses offered include elementary, intermediate, and advanced language classes, literature, culture, general linguistics, translation, interpretation, and classes relating language to business. Many of the department's students elect a double major/minor with other disciplines in order to enhance capabilities for careers in education, international business or industry, and cultural or social services.

Students who wish to continue the same foreign language at the university level that they studied in high school must take the departmental placement exam. The test should be taken prior to course enrollment and is administered by the secretary of the foreign languages department. Students who place at the 200 level or above cannot receive credit for a course **lower** than that at which they place. They are permitted to enroll for credit in a course higher than where they placed. Credit is not given on a transcript for courses below the placement level. The only exceptions to this rule are for Advanced Placement credit or CLEP credit, and approved credit must appear on the transcript before a student enrolls in a foreign language course.

Language Requirements for the B.A. Degree

The B.A. degree requires completion of a 202 or 300-level foreign language course. Only three hours of foreign language are required if the student places at the 202 level or above; as many as 14 hours may be required if the student has less proficiency.

Language Majors

The department offers a major or a minor in French, German, and Spanish. For the major the requirements are a minimum of 24 hours in courses above the 100 level, and approval by the foreign language advisor. Students majoring in French must take FLF 320, French Phonetics. For the minor the requirements are a minimum of 18 hours in courses above the 100 level, and approval by the foreign language advisor.

Students planning to teach French, German or Spanish at the secondary level are required to be certified in the state of Illinois and must complete the requirements of a secondary teaching certificate. These requirements are listed under the Department of Teacher Education (Secondary Education).

Foreign Study Program

For students interested in studying for a semester or more at a foreign university, programs are available at selected sites abroad. For further information contact the International Programs and Study Abroad Office.

Course Descriptions

French

FLF 101, 102 Elementary French **4 hrs. each**

Necessary vocabulary, elementary structures, and oral and written practice. Training in the four language skills of listening, speaking, reading, and writing. Laboratory included. Prerequisite: FLF 101 or equivalent is prerequisite for FLF 102.

FLF 201, 202 Intermediate French **3 hrs. each**

Continuation of basic structures and vocabulary, plus review. Emphasis on further development of the four language skills through oral and written practice and readings in literature, culture and civilization. Prerequisites: FLF 102 or equivalent; FLF 201 is prerequisite for FLF 202.

FLF 303 Composition **3 hrs.**

Emphasis on developing skills for written expression through writing letters, reports, and essays. Prerequisite: FLF 202, or equivalent.

FLF 304 Conversation **3 hrs.**

Emphasis on improving listening comprehension and speaking proficiency through free conversation and oral reports. Prerequisite: FLF 202, or equivalent.

FLF 305 France Today: Aural French via Video **3 hrs.**

Improving listening comprehension and cultural awareness by viewing and discussing bi-weekly video tapes of French television news broadcasts of metropolitan and overseas news and specially developed videos of French culture, commerce, etc. Prerequisite: one 300 level French course or consent of instructor.

FLF 316 Topics in French Language and Literature **3 hrs.**

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for maximum of 9 hrs. credit. Prerequisite: FLF 202, or equivalent.

FLF 320 French Phonetics **3 hrs.**

French phonetic elements in isolation as well as in normal speech patterns. Practice in correct pronunciation of individual sounds, words, phrases, and sentences. Individual and class work with tape recordings. Required for all French majors. Prerequisite: FLF 202 or equivalent.

FLF 325 Introduction to French Literature **3 hrs. (Gen. Ed. HL)**

Principles and methods for studying literature. Selected works of French fiction, drama, and poetry. Prerequisite: FLF 202 or equivalent.

FLF 334 Commercial French **3 hrs.**

Introduction to language skills for commercial communication with French speaking countries. Emphasis on written and oral activities dealing with banks, sales, freight, insurances, advertisement, export, trade, and unions. Prerequisites: FLF 303, 304; or consent of instructor.

FLF 490 Topics in French Language or Literature
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. Prerequisites: FLF 303, 304; or equivalent.

FLF 492 Practicum in French
1-3 hrs.

Supervised work study in community service activities involving use of the foreign language. Pass/Fail. Prerequisite: consent of department chair.

FLF 495 Independent Study
1-3 hrs.

Independent study and research in a specific field of French language or phase of literary production. May be repeated for maximum of 6 hrs. credit. Prerequisites: junior or senior standing; consent of department chair.

German

FLG 101, 102 Elementary German
4 hrs. each

Necessary vocabulary, elementary structures, and oral and written practice. Training in the four language skills of listening, speaking, reading, and writing. Laboratory included. Prerequisite: FLG 101 or equivalent is prerequisite for FLG 102.

FLG 201, 202 Intermediate German
3 hrs. each

Review of basic structures and vocabulary. Emphasis on further development of the four language skills through oral and written practice and readings in literature, culture, and modern life. Prerequisite: FLG 102 or equivalent; FLG 201 is prerequisite for FLG 202.

FLG 303 Composition
3 hrs.

Development of ability to write with ease and accuracy in the German language: creative, business, technical, and expository writing. Translation skills. Thorough grammar review. Prerequisite: FLG 202, or equivalent.

FLG 304 Conversation
3 hrs.

Emphasis on improving listening comprehension and speaking proficiency through free and controlled conversation, oral reports, and small discussion groups. Emphasis on correct idiomatic use of the German language in everyday situations. Prerequisite: FLG 202, or equivalent.

FLG 316 Topics in German Language and Literature
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for maximum of 9 hrs. credit. Prerequisite: FLG 202, or equivalent.

FLG 321 Survey of German Culture and Civilization
3 hrs.

Major periods in the culture and civilization of Germany and German-speaking countries from the Medieval Period to the present. Taught in German. Prerequisites: FLG 202 or equivalent.

FLG 325 Introduction to German Literature
3 hrs. (Gen. Ed. HL)

Critical analysis of different forms, movements, and themes in fiction, drama, essay, and poetry of German-speaking lands. Prerequisite: FLG 202, or equivalent.

FLG 334 Commercial German
3 hrs.

Advanced level communicative competence in the four language skills of listening, speaking, reading, and writing as they pertain to business situations. Emphasis on development of cultural awareness and sensitivity to cultural differences. Prerequisites: FLG 202 or equivalent.

FLG 492 Practicum in German
1-3 hrs.

Supervised work study in community service activities involving use of the foreign language. Pass/Fail. Prerequisite: consent of department chair.

FLG 495 Independent Study
1-3 hrs.

Independent study and research in a specific field of German language or phase of literary production. May be repeated for maximum of 6 hrs. credit. Prerequisites: junior or senior standing; consent of department chair.

Hebrew

FLH 101, 102 Elementary Hebrew
4 hrs. each

Emphasis on basic structures and vocabulary of the language. Intensive practice in listening and speaking. Laboratory required. Prerequisite: FLH 101 is prerequisite for FLH 102.

FLH 201, 202 Intermediate Hebrew
3 hrs. each

Review of basic structures and vocabulary. Emphasis on development of language skills. Readings from modern authors; composition. Laboratory required. Prerequisite: FLH 102. FLH 201 is prerequisite for FLH 202.

Japanese

FLJ 101, 102 Elementary Japanese
5 hrs. each

Necessary vocabulary, elementary structures, and oral and written practice. Listening, speaking, reading, and writing. Laboratory included. Prerequisite: FLJ 101 is prerequisite for FLJ 102.

FLJ 201, 201 Intermediate Japanese
5 hrs. each

Continuation of basic structures and vocabulary, plus review. Emphasis on further development of the four language skills through oral and written practice and readings in literature, culture, and civilization. Prerequisites: FLJ 102 or equivalent; FLJ 201 is prerequisite for FLJ 202.

Portuguese

FLP 101, 102 Elementary Portuguese
4 hrs. each

Necessary vocabulary, elementary structures, oral and written practice. Listening, speaking, reading, writing. Laboratory. Prerequisite: FLP 101 or equivalent is prerequisite for FLP 102.

FLP 201, 202 Intermediate Portuguese
3 hrs.

Continuation of basic structures and vocabulary, plus review. Emphasis on further development of the four language skills through oral and written practice and readings in literature, culture, and civilization. Prerequisites: FLP 101 and 102, or equivalent; FLP 201 is prerequisite for FLP 202.

Russian**FLR 101, 102 Elementary Russian**
4 hrs. each

Necessary vocabulary, elementary structures, and oral and written practice. Listening, speaking, reading, and writing. Laboratory included. Prerequisite: FLR 101 or equivalent is prerequisite for FLR 102.

FLR 201, 202 Intermediate Russian
3 hrs. each

Continuation of basic structures and vocabulary, plus review. Emphasis on further development of the four language skills through oral and written practice and readings in literature, culture, and civilization. Prerequisite: FLR 102 or equivalent; FLR 201 or equivalent is prerequisite for FLR 202.

Spanish**FLS 101, 102 Elementary Spanish**
4 hrs. each

Necessary vocabulary, elementary structures, and oral and written practice. Training in the four language skills of listening, speaking, reading, and writing. Laboratory included. Prerequisite: FLS 101 or equivalent is prerequisite for FLS 102.

FLS 201, 202 Intermediate Spanish
3 hrs. each

Continuation of basic structures and vocabulary, plus review. Emphasis on further development of the four language skills through oral and written practice and readings in literature, culture, and civilization. Prerequisites: FLS 102 or equivalent; FLS 201 is prerequisite for FLS 202.

FLS 303 Composition
3 hrs.

Emphasis on improving written proficiency. Thorough grammar review, translation exercises, and writing various types of prose. Emphasis on correct, idiomatic use of Spanish in everyday situations. Prerequisite: FLS 202, or equivalent.

FLS 304 Conversation
3 hrs.

Emphasis on improving speaking proficiency and listening comprehension through free conversation and oral presentations. Emphasis on correct, idiomatic use of Spanish in everyday situations. Prerequisite: FLS 202, or equivalent.

FLS 315 Topics in Hispanic Culture and Civilization
1-3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic. Taught in English; foreign language credit given only if

students do reading and written assignments in Spanish. Prerequisite: FLS 202 or equivalent, if reading and written assignments done in Spanish.

FLS 316 Topics in Hispanic Language and Literature
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for maximum of 9 hrs. credit. Prerequisite: FLS 202, or equivalent.

FLS 320 Spanish Phonetics
3 hrs.

Spanish phonetic elements in isolation as well as in normal speech patterns. Practice in correct pronunciation of individual sounds, words, phrases, and sentences. Individual and class work with tape recordings. Prerequisites: FLS 202 or equivalent.

FLS 321 Peninsular Spanish Civilization and Culture
3 hrs.

An integrated survey of civilization and culture of the Iberian Peninsula from prehistoric times to the present. Survey concentrates on Spanish arts and intellectual achievements. Prerequisite: FLS 202 or equivalent.

FLS 322 Latin-American Civilization and Culture
3 hrs.

An integrated survey of Latin-American civilization and culture from pre-Columbian times to the present. Survey concentrates on Latin-American arts and intellectual achievements. Prerequisite: FLS 202 or equivalent.

FLS 325 Introduction to Literature
3 hrs. (Gen. Ed. HL)

Elements, techniques, and forms of Hispanic fiction, drama, and poetry. Readings in Peninsular and Spanish American literature. Prerequisite: FLS 303, or consent of instructor.

FLS 330 Introduction to Translation
3 hrs.

Methods and procedures of translating from Spanish to English and from English to Spanish. Prerequisites: FLS 303, 304; or consent of instructor.

FLS 332 Introduction to Interpreting
3 hrs.

Methods and procedures of interpreting from Spanish to English and from English to Spanish. Prerequisites: FLS 303, 304; or consent of instructor.

FLS 334 Commercial Spanish
3 hrs.

Introduction to language skills for commercial communication and Hispanic business practices. Prerequisites: FLS 303, 304; or consent of instructor.

FLS 340 Spanish Literature I
3 hrs. (Gen. Ed. HL)

Analysis of human values in representing works of major Iberian writers of Medieval, Renaissance, and Baroque periods. Prerequisites: FLS 303, 304; or consent of instructor. FLS 321, 325 recommended.

FLS 341 Spanish Literature II
3 hrs. (Gen. Ed. HL)

Values-based analysis of representative works of major Iberian authors from Neo-classical, Romantic, and Realist-Naturalist periods. Prerequisites: FLS 303, 304; or consent of instructor. FLS 321, 325, 340 recommended.

FLS 342 Survey of Hispanic-American Literature I
3 hrs. (Gen. Ed. NW)

Analysis of Hispanic-American literature from its roots in the indigenous pre-Columbian civilizations to Modernism. Prerequisites: FLS 303, 304; or consent of instructor. FLS 322, 325 recommended.

FLS 343 Survey of Hispanic-American Literature II
3 hrs. (Gen. Ed. NW)

Analysis of non-Western cultures and traditions in representative works by major authors of Hispanic-America from 1910 to present. Prerequisites: FLS 303, 304; or consent of instructor. FLS 322, 325, 342 recommended.

FLS 403 Advanced Conversation and Composition
3 hrs.

Advanced course in speaking and writing. Prerequisites: FLS 303, 304; or consent of instructor.

FLS 490 Topics in Hispanic Language or Literature
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated for maximum of 9 hrs. credit. Prerequisites: FLS 303, 304; or equivalent.

FLS 492 Practicum in Spanish
1-3 hrs.

Supervised work study in community service activities involving use of the foreign language. Pass/Fail. Prerequisite: consent of department chair.

FLS 495 Independent Study
1-3 hrs.

Independent study and research in a specific field or phase of Spanish language or literary production. May be repeated for maximum of 6 hrs. credit. Prerequisites: junior or senior standing; consent of department chair.

Specialized Language Courses

FLL 311 Introduction to Language
3 hrs.

Introduction to the study of language; its structure, acquisition, and function in society. Cross listed as ENG 311.

FLL 315 Topics in Language, Literature, and Culture
1-3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for maximum of 9 hrs. credit.

Department of Geological Sciences

FACULTY *Professors Foster (Chair), Gorman; Associate Professor Helenek.*

The primary objective of the geological sciences program is to develop an awareness of the earth as a dynamic and unified system in time and space. It is the study of the solid earth, its atmosphere and oceans, its life forms, and their dynamics through geologic time. Applied aspects include mineral and energy resource exploration and environmental evaluation.

The curriculum is preparatory for careers in geology, engineering geology, geophysics, hydrogeology, and oceanography, or secondary earth science teaching. Emphasis is placed upon understanding geoscience concepts through discussion, laboratory work, field observation and participation in independent research projects.

Several programs are available depending upon the interest of the student. Majors should consult with departmental advisors early in their undergraduate careers to insure for a properly planned program.

Geological Sciences (Professional) Program

This program is designed for individuals preparing for post-graduate professional study, or seeking careers in industry or government as professional geologists. Students enrolled in the professional program must achieve a minimum grade of C in all required geology and supporting courses and have an overall GPA of at least 2.25 to meet departmental graduation requirements. Course requirements for the professional program are as follows:

GES 101, 102 Earth Science and GES 110,	
111 Historical Geology	8
GES 201 Mineralogy and GES 202 Optical	
Crystallography	8
GES 302 Invertebrate Zoology	4
GES 305 Petrology and Petrography	4
GES 312 Structural Geology and Tectonics	4
GES 321 Paleontology	4
GES 407 Sedimentology and GES 421 Stratigraphy	8
Approved field mapping course	6
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	46 hrs.

Required supporting courses: MTH 121 and 122; CIS 102 or CS 104; CHM 161 and 166, or 162; PHY 110 and 201 with labs; or equivalent courses.

Majors with interests in specific areas of the geological sciences (geochemistry, mineralogy, petrology, paleontology, oceanography, structural geology) may take additional courses concentrating on these topics.

Applied Geology and Hydrogeology Program

This is an applied geology program oriented toward hydrogeology, environmental geology, and geophysics. Students enrolled in this program must achieve a minimum grade of C in all required geology, civil engineering and supporting courses and have an overall GPA of at least 2.5 to meet departmental graduation requirements. Course requirements for the applied geology and hydrogeology program are as follows:

GES 150 Engineering Geology	3
GES 102 Earth Science Lab	1
GES 110, 111 Historical Geology	4
CE 150 Mechanics I and CE 250 Mechanics II	6
GES 201 Mineralogy	4
CE 301 Mechanics of Materials	3
CE 304 Fluid Mechanics and CE 308 Geotechnical Engineering	7
GES 312 Structural Geology and Tectonics	4
GES 450 Hydrogeology	4
GES 421 Stratigraphy	4
GES 461 Introductory Geophysics	3
Approved elective	3
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	46 hrs.

Required supporting courses: MTH 121, 122, 207, 223, and 224; CIS 102 or CS 104; CHM 161 and 166, or 162; PHY 110 and 201 with labs; or equivalent courses.

Earth Sciences Program

This program is preparatory for a career in secondary earth science teaching and meets requirements for secondary education teacher certification. Certification requirements are listed under the Department of Teacher Education (Secondary Education). A second teaching field is required; general science is suggested as the second field. Students must consult with advisor for specific requirements for the second teaching field. A minimum of 34 semester hours in courses from the College of Education and Health Sciences must be completed in addition to the courses listed below:

GES 101, 102 Earth Science and GES 110, 111 Historical Geology	8
GES 201 Mineralogy	4
GES 302 Invertebrate Zoology	4
GES 300 Oceanography	3
AST 300 Astronomy or AST 310 Astronomy and Astrophysics	3
GES 311 Geomorphology	3
GES 312 Structural Geology and Tectonics	4
GES 321 Paleontology	4
GES 335 Weather Elements	3
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	36 hrs.

Required supporting courses: BIO 123 or 124, one year of college chemistry, math through trigonometry, PHY 100.

Environmental Science Program

Details of this program are listed elsewhere in this catalog.

Suggested Freshman Program

Geological Sciences Professional

<i>First Semester</i>	
ENG 101 or COM 103	3
GES 101 and 102	4
*MTH 121	4
CHM 161	4
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	15

Second Semester

COM 103 or ENG 101	3
GES 110 and 111	4
MTH 122	4
CHM 166 or 162	5
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	16

Applied Geology and Hydrogeology

<i>First Semester</i>	
ENG 101	3
GES 110 and 111	4
MTH 121	4
CHM 161	4
	<hr/>
	15

Second Semester

COM 103	3
GES 150	3
GES 102	1
MTH 122	4
CHM 166 or 162	5
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	16

Minor in Geological Sciences

Students desiring a minor in geological sciences must take a minimum of 22 hours in geological sciences and earn a grade of C or better in each course.

The 22 required hours must be distributed as follows:

1. Required courses - 8 hours: GES 101, 102, 110 and 111.
2. A minimum of 14 hours from one of the following options:
 - Option A (Oceanography - Paleontology):
GES 302, 300, 321, 421
 - Option B (Engineering - Applied Geology):
GES 201, 312, 421, 450
 - Option C (Business - International Affairs):
GES 300, 311, 335 and 493 (World Mineral Resources)

*MTH 109-110 if not sufficiently prepared for calculus (MTH 121).

Option D (Igneous - Metamorphic Geology):

GES 201, 202, 305, 312

Option E (Sedimentary Geology):

GES 201, 312, 407, 421

Course Descriptions

GES 101 Principles of Earth Science **3 hrs. (Gen. Ed. FS)**

The earth in space; weather, earth materials, and geological processes that control development of the earth's surface.

GES 102 Principles of Earth Science Laboratory **1 hr.**

Laboratory related to GES 101. One two-hour laboratory per week. Prerequisite: GES 101 or equivalent, or concurrent enrollment.

GES 110 Principles of Historical Geology **3 hrs. (Gen. Ed. FS)**

Introduction to history of the earth and its life forms; methods used by geologists to decipher earth history using rocks and fossils. Theory of evolution, origins of life, fossilization, animal and plant extinctions, mountain building, plate tectonics, and the Ice Age.

GES 111 Principles of Historical Geology Laboratory **1 hr. (Gen. Ed. FS)**

Laboratory related to GES 110. Study and interpretation of topographic and geologic maps, earth history, and fossils. One two-hour laboratory per week. Prerequisite: GES 110 or equivalent, or concurrent enrollment.

GES 150 Principles of Engineering Geology **3 hrs.**

For science or engineering students interested in technical aspects of geology. Sediments, rocks, structures, and hydrologic processes in civil engineering practice. Prerequisite: MTH 109, 110; or equivalents.

GES 201 Mineralogy **4 hrs.**

The crystalline state: physical and chemical properties of minerals; occurrence, association, and origin of the silicate and more important non-silicate minerals. Lecture and laboratory. Prerequisites: GES 101; one semester of college chemistry, or consent of the instructor.

GES 202 Optical Crystallography **4 hrs.**

Determination of optical constants of crystals; systematic identification of minerals. Lecture and laboratory. Prerequisite: GES 201.

GES 205 Directed Field Study **1-2 hrs.**

Directed study of regional geologic structure, paleontology, lithology, topography, and stratigraphy. Emphasis on similarities and differences, and examination of processes responsible for their development. Structural framework of the continent: cratonic, shield, and geosynclinal elements. Prerequisite: GS major or consent of Department Chair.

GES 300 Oceanography: The Human Perspective **3 hrs. (Gen. Ed. TS)**

Introduction to scientific oceanography and its relationship to human life. History of oceanography and its technology; crustal movements; the ocean as a source of mineral resources; the variety of ocean life such as

jellyfish and sharks, and their danger; whales and the human perspective of "lower" life; sound and submarine warfare, waves and their potential energy and destructive capacity; human pollution. Prerequisite: one college-level science course.

GES 302 Invertebrate Zoology **4 hrs.**

Detailed biological survey of major groups of invertebrate animals. Emphasis on marine phyla with good fossil representation. Dissection of representative types. Lecture and laboratory. Cross listed as BIO 302. Prerequisite: elementary zoology or biology or historical geology with laboratory, or consent of instructor.

GES 305 Petrology and Petrography **4 hrs.**

Origin of igneous and metamorphic rocks; processes responsible for their development. Microscopic and megascopic examination of textures and constituent minerals. Lecture and laboratory; field trip. Prerequisite: GES 201.

GES 311 Geomorphology **3 hrs.**

Detailed analysis of the origin, control of development, evolution, and classification of landforms produced in various geologic materials and structures. Lecture and laboratory. Prerequisites: GES 101, 102; or consent of instructor.

GES 312 Structural Geology and Tectonics **4 hrs.**

The earth's crust; emphasis on deformation in its upper part, and causes and effects of deformation as indicated in the rocks and rock units. Lecture and laboratory. Prerequisites: GES 101; trigonometry.

GES 321 Paleontology **4 hrs.**

Life, from its earliest record to the present. Emphasis on large scale aspects of evolution. General survey of pertinent concepts in morphology, genetics, taxonomy, and ecology; introduction to elementary quantitative methods; megascopic and microscopic study of major types of fossils. Lectures, laboratory work, independent research, field trips. Prerequisite: GES 110, 111, 302; or consent of instructor.

GES 335 Weather Elements **3 hrs.**

Analysis of fundamental physical processes of the atmosphere; their relationships to the daily weather pattern and weather forecasting in the U.S. Prerequisite: GES 101, or consent of the instructor.

GES 407 Sedimentology **4 hrs.**

Geology of sedimentary deposits: sedimentary processes; genetic interpretation of sediments and sedimentary rocks. Lectures, laboratory, independent research, field trips. Prerequisite: GES 202.

GES 410 Principles of Geochemistry **3 hrs.**

Origin and distribution of chemical elements in nature. Geochemical processes; their relationship to evolution of rock and mineral systems. Prerequisite: GES 202.

GES 421 Stratigraphy**4 hrs.**

Concepts and methods in description, classification, correlation, and interpretation of stratified rocks. Field studies. Prerequisite: GES 321.

GES 450 Hydrogeology**3 hrs.**

Introduction to geologic and hydrologic aspects of groundwater. Emphasis on hydrogeologic systems that may be impacted by pollutants: waste disposal, site exploration, site testing, and prediction of the fate of contaminants in the subsurface. Laboratory measurements of permeability, porosity, physical and chemical properties of soil, and hydrodynamic dispersion parameters. Prerequisites: PHY 201, MTH 122, and CS 104; or equivalents; or consent of instructor.

GES 461 Introductory Geophysics**3 hrs.**

Introductory examination of the earth using principles of physics and applied mathematics. The earth's place in the Universe; the earth's structure, shape, heat flow, and magnetic and electric characteristics; processes responsible for these characteristics. Prerequisite: consent of instructor.

GES 493, 494 Special Topics in Geological Sciences
1-4 hrs. each

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 8 hrs. credit per course.

GES 505 Field Observation in Natural History**4 hrs.**

For non-majors: field oriented investigation of diverse topographic forms, mountain structures, and materials composing the earth. Develops understanding of rapidly deteriorating environment through observation of geophysical, astronomical, and biological variations. One week of classes; three week bus trip to marine station, and return. Not open to undergraduate geological sciences majors.

GES 546 Groundwater Hydrology and Hydraulics**3 hrs.**

Groundwater in the hydrological cycle, fundamentals of groundwater flow; flow net analysis; steady-state and transient well testing techniques for parameter estimation; multiple well systems; leaky aquifers; sea water intrusion; groundwater investigation; artificial recharge of aquifers, design of wells; subsidence and lateral movement of land surface due to groundwater pumping. Design and computer applications. Cross listed as CE 546. Prerequisites: CE 202, 304, or consent of instructor.

Department of History

FACULTY *Professors Fowler-Salamini (Chair), Guzman, Maga, Roach; Associate Professors Jones, Robertson; Assistant Professors Bjelopera, Smallwood, Williams.*

The history faculty believes that students should view history as a study of human contributions from all parts of the world. For history majors, a curriculum is planned to provide an opportunity for more detailed study of human civilizations in Europe, the Americas, and the non-Western world.

While some history majors prepare themselves to teach in secondary schools, junior colleges, or colleges, many other careers are open to students who have become competent in historical analysis. Professions such as business, law, library science, archaeology, museum and archival work and a variety of local, state and federal government positions are open to students majoring in history. Faculty counselors will talk with students desiring information on career opportunities.

Major Requirements

Students majoring in history must complete a minimum of 30 hours of history credit, 24 of which must be above 100 level and 15 of which must be above the 200 level. Majors, in consultation with their history advisor, must fulfill the following requirements:

1. Successful completion of Evolution of Western Civilization, a core course required of all Bradley students (not counted as part of the 30-hour history minimum)
2. Africa, Asia, Latin America, Middle East, or Russia (6 hours, 3 of which must be 300 level or above)
3. 6 hours of U.S. history, including either 203 or 204 and 3 hours of 300 level
4. 6 hours of European history at the 300 level (Western Civilization is a prerequisite for all European history courses)
5. HIS 350 Historical Methods Seminar (Prerequisite: 3 hours of history or consent of instructor.)
6. 6 hours of electives from History Department.
7. HIS 450, 451, or 452 Research Seminar
8. Cross-cultural component. In addition to the 30 hours, all History majors must complete **one** of the four following options:
 - a. An approved international study experience selected from a variety of Bradley programs including international internships, Bradley Summer Semester abroad, and directed programs at selected international institutions. A minimum of 6 hours must be taken abroad. (If a student studies abroad at one of the Bradley-directed Study Abroad programs other than the Bradley European Summer Semester, the requirement of 24 hours of the last 30 hours on campus is modified to 30 of the last 60 hours. Courses taken in a Bradley-directed program during the senior year will count towards fulfilling the requirements of having 24 of the last 30 semester hours on campus).

- b. Successful completion of the equivalent of 202 in any foreign language.
- c. At least 6 hours drawn from the following courses: AAS 210, 211, 300; HIS 304, 305, 339, 382; WMS 200, ENG 129, 190, 329, 330, 331, SOC 313, 314, 315. History courses in this category may also count towards the major.
- d. Secondary Education students can fulfill this requirement through ETE 280 and one of the approved courses in category c.

Students desiring to earn a teaching certificate in Illinois must have a minimum of 8 hours in U. S. History and 8 hours in European or World History. They also need a total of 36 hours of history and must complete the certification requirements listed under the Department of Teacher Education (Secondary Education).

History majors may earn either a B.A. or B.S. degree.

History Major – Business Minor

This program is for the student who wishes to combine a background in both history and business for the goal of immediate employment opportunities or entrance to an MBA program. In addition to the courses in history the minor requires 30 hours in the Foster College of Business Administration in the following courses: ATG 157, 158; ECO 221/100, 222; QM 262, FIN 322, BMA 172, 342, 352; and MTG 315. Students for the minor should also complete MTH 115. The dean of the Foster College of Business Administration must approve students for the minor.

History Minor

This minor is designed for students who wish to pursue a coherent and balanced program of study of history, with equal emphasis upon United States, European, and non-Western history. Students from outside or inside the College of Liberal Arts and Sciences should find this concentration of study in a traditional humanities/social sciences discipline to be especially useful in preparing for law school, graduate work in library science, civil service employment, or museum and archival management.

The minor requires 18 hours total, distributed in the following manner:

One non-Western civilization course to be chosen from HIS 103, HIS 104, HIS 105, HIS 107	3
U.S. history, 200 or 300 level	6
European history, 200 or 300 level	3
Non-Western history, 200 or 300 level	3
History elective	3

Course Descriptions

HIS 103 Non-Western Civilization: Russian History 3 hrs. (Gen. Ed. NW)

Russian and Soviet history from its origins to the present. Major features of pre-modern, modern, and contemporary Russian civilization.

HIS 104 Non-Western Civilization: The Middle East Since Muhammad 3 hrs. (Gen. Ed. NW)

History of the Middle East from the time of the prophet Muhammad to the present. Pre-modern, modern, and contemporary Middle East.

HIS 105 Non-Western Civilization: Latin America 3 hrs. (Gen. Ed. NW)

Major social, economic, and political institutions and forces that have shaped Latin American society. Emphasis on socioeconomic changes in the 20th century that have polarized the social class structure and encouraged political upheaval.

HIS 107 Non-Western Civilization: Modern Japan, 1860-Present 3 hrs. (Gen. Ed. NW)

The rise of modern Japan: The growth of Japanese power and its influence in the world economy.

HIS 201 American History: Social 3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook.

HIS 203 United States History to 1877 3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook.

HIS 204 United States History Since 1877 3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook.

HIS 300 The United States Since 1945 3 hrs.

Social-cultural, political, economic, and diplomatic aspects of U.S. history since 1945.

HIS 301 Topics in American History: Intellectual 3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit.

HIS 302 Topics in American History: Diplomatic 3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit.

HIS 303 American Urban History 3 hrs.

Growth and development of American cities in historical context.

HIS 304 Women in American History 3 hrs.

Political, economic, and social status of women in American society since Colonial times. Reasons for the changing role of women; major problems confronting women in the 20th century.

HIS 305 American Indian History 3 hrs.

History of the first Americans; Indian-White relations since 1492. Origins and varied cultures of American Indians.

HIS 306 The United States Civil War Era 3 hrs.

U.S. history 1830-1877: events and developments leading to civil war, the war itself, and efforts to reconstruct the Union after 1865.

HIS 308 Topics in American History: Political
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit.

HIS 309 The History of U.S. Law Enforcement
3 hrs.

Historical roots of American law enforcement; establishment of an organized police in the U.S.; historical efforts to improve American police work.

HIS 310 America and Vietnam 1940-Present
3 hrs.

The Vietnam War: America's role in it and its legacies for both nations.

HIS 311 History of American Political Economy
3 hrs. (Gen. Ed. SF)

Analyzes the economic history of the United States, stressing the influence of government policy on economic development.

HIS 312 U.S. Foreign Policy
3 hrs. (Gen. Ed. SF)

Mechanics and conduct of modern U.S. foreign policy-making. Cross listed as IS 312.

HIS 313 U.S. Constitutional History, 1787-Present
3 hrs.

Examines the meaning and significance of Constitutional law in American politics and diplomacy during the past 200 years.

HIS 320 Renaissance and Reformation
3 hrs.

Renaissance and Reformation as part of the transitional era between the Medieval and Modern ages. Renaissance emphasis on reason and humanism balanced by Reformation focus on faith and spiritual concerns.

HIS 321 Topics in European History: Intellectual
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit.

HIS 322 History of England
3 hrs.

From earliest times to the present. Not open to students with credit in HIS 345 or HIS 346.

HIS 323 Greek Civilization
3 hrs.

Classical Greek civilization up to the Macedonian conquest. Emphasis on emergence of democracy in Athens and its functioning in the famous 5th century B.C.

HIS 324 Barbarians in History
3 hrs.

Significant barbarian invaders of Inner Asia; their role in the development of human civilization.

HIS 325 Roman Civilization
3 hrs.

Values and institutions of Roman society during Kingship, Republic, and Empire periods. Emphasis on the Republic at its peak, Rome's imperialism, and complex issues involved in Rome's fall; also impact of Roman values and practices on Western civilization.

HIS 326 Modern Military Forces and Institutions
3 hrs. (Gen. Ed. SF)

European and American military experiences: 1700 to present.

HIS 327 Topics in European History: Cultural
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit.

HIS 328 England and the American Revolution
3 hrs.

American Revolution from the perspective of the common Anglo-Saxon cultural, political, economic, intellectual, and social heritage.

HIS 329 From Imperial to Nazi Germany
3 hrs.

Development of National Socialism: factors that led to the rise of Nazism; its origins in Imperial Germany and the Weimar Republic; its consequences in the Third Reich.

HIS 331 Russian Revolutions
3 hrs.

Russian revolutions of the 20th century; revolutionary movement of the 19th century that gave rise to them.

HIS 332 Modern Latin American History
3 hrs.

Political development of Latin America in the 19th and 20th centuries. Political changes linked to recent socio-economic transformations in the developing area. Emphasis on alternatives of reform, revolution, and military dictatorship.

HIS 334 Non-Western History: Social
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit.

HIS 335 Modern Mexico
3 hrs. (Gen. Ed. NW)

Social, economic, and political development of Mexico since independence. Contemporary problems facing a developing country which has already experienced one social revolution.

HIS 336 Early Non-Western History
3 hrs. (Gen. Ed. NW)

Analytical and comparative survey of the formative stages of early non-Western civilizations in five geographical regions. The basic cultural patterns that emerged will be studied, compared, and related to present developments. Prerequisites: CIV 100; or CIV 111, 112.

HIS 337 Modern Non-Western History
3 hrs. (Gen. Ed. NW)

Growth and development of non-Western civilizations. Reactions of indigenous peoples and cultural patterns to Western penetration and imperialism. Present development and practices. Prerequisite: CIV 100; or CIV 111, 112.

HIS 338 Russia Since 1917
3 hrs. (Gen. Ed. NW)

History of Russia from the Bolshevik Revolution to the present. Political, social, economic, and cultural development and theories.

HIS 339 Women in Global Perspective**3 hrs.**

The changing status of women in light of global economic, social, and political changes in different regions of the world. How women have participated in and contributed to 20th century transformations of the family, community, workplace, special organizations, and politics.

HIS 340 Contemporary Europe**3 hrs.**

Survey of contemporary European history. Background information on the period before 1945; major institutions and problems of Western European society since World War II. Contemporary conditions in Western Europe.

HIS 341 The French Revolution**3 hrs.**

The preconditions to 1789; the definition of revolution as opposed to reform or national liberation; the making and unmaking of governmental structures; the role of the inarticulate common people or "the crowd"; the role of war on the revolutionary process; the rise and fall of Napoleon Bonaparte; the failure to impose revolution by military conquest. Prerequisites: CIV 100; or CIV 111 and 112; or equivalent.

HIS 342 Nineteenth Century Europe**3 hrs.**

The years of peace 1815-1914, with emphasis on social history; major movements for social change as the average man and woman experienced them. Early industrial capitalism, utopian and scientific socialism, the failed revolutions of 1848, the growth of working people's organizations, the increase in formal democracy and standard of living by the end of the century, and the imperialist expansion in Asia and Africa. Prerequisites: CIV 100; or CIV 111 and 112; or equivalent.

HIS 345 History of England I**3 hrs.**

The history of England from the earliest times to 1660.

HIS 346 History of England II**3 hrs.**

The history of England from 1660 to the present.

HIS 350 Historical Methods Seminar**3 hrs.**

Exploration of historical arguments and debates; methods of interpreting primary sources. Prerequisite: History major or consent of instructor.

HIS 375 Holocaust**3 hrs.**

Development of Antisemitism in Europe and Germany and its consequences, culminating in the attempted annihilation of the Jews during World War II.

HIS 382 Women, Work, and Family in Europe 1600-Present**3 hrs.**

Definition of work and where women have fit into the economy. Roles of single, married, divorced, and widowed women and mothers at each of the traditional political-economic landmarks: the growth of commercial capitalism, the industrial revolution, wars, depressions, political revolutions, and the formation of new national governments. Prerequisite: CIV 100; or CIV 111 and 112; or equivalent.

HIS 385 Science, Technology, and Society**3 hrs. (Gen. Ed. SF)**

Analysis of scientific and technological achievements, applications, and implications of the past half century, and their impact on the future. Emphasis on analysis of promises and threats of the growth of science and technology, and new ethical and social issues raised by technological progress. (Students with credit in SOC 385 may not take HIS 385.)

HIS 405 Independent Reading in History**1-3 hrs.**

Directed reading by qualified students with faculty guidance. For history majors primarily. May be repeated for maximum of 6 hrs. credit. Prerequisite: history major or consent of department chair.

HIS 406 Individual Study in History**1-3 hrs.**

Special study of individual topics in history with faculty supervision. For history majors primarily. May be repeated for maximum of 6 hrs. credit. Prerequisite: history major or consent of department chair.

HIS 450 U.S. History Research Seminar**3 hrs.**

Research paper required employing primary sources in U.S. history. May be repeated under different topic for a maximum of 6 hours. Prerequisites: HIS 203 or 204; HIS 350; senior standing; and history major; or consent of instructor.

HIS 451 European History Research Seminar**3 hrs.**

Research paper required employing primary sources in European history. May be repeated under different topic for maximum of 6 hours. Prerequisites: HIS 350; a 300-level European history course; senior standing; and history major; or consent of instructor.

HIS 452 Area Studies Research Seminar**3 hrs.**

Research paper required employing primary sources in African, Asian, Latin American, Middle Eastern, or Russian history. May be repeated under different topic for a maximum of six hours. Prerequisites: HIS 103, 104, 105, or 107; HIS 350; senior standing; and history major; or consent of instructor.

HIS 505, 506 Seminar in Directed Reading**1-3 hrs. each**

Program of directed readings; analysis, synthesis, and interpretation of materials. Prerequisites: senior or graduate standing; 15 hrs. of college-level history with at least a B average; consent of department chair.

HIS 507, 508 Area Study in Directed Reading**1-3 hrs. each**

Project and readings in area studies; e.g. Asia, Russia, Africa, or Latin America. Prerequisites: 15 hours of college-level history with at least a B average; consent of department chair.

Individualized Major Program

FACULTY *Early, (Chair); Meyer, Zant.*

The purpose of the individualized major program is to provide an opportunity for students to design their own courses of study. Students who have completed at least one semester at Bradley or at any other college or university may apply for the program.

Entry into the program presupposes a definite objective on the student's part. Students without definite academic plans should register in academic exploration rather than in the individualized major program.

Students in this program must create their own areas of specialization (majors) by developing programs of study around their own particular academic interests. These programs of study may span several academic disciplines, but cannot duplicate existing majors within the University.

Requirements

- A. Students in the program must meet all University and College of Liberal Arts and Sciences requirements.
- B. Students graduating in the program must have a 2.25 over-all grade point average.
- C. **Before** being admitted into the program, students must submit a written statement of their objectives and a detailed curriculum for the approval of the advisors.
- D. A staff of advisors provides assistance and direction to students in the program. Students will choose one advisor to meet with at least once each academic year for counseling and review.
- E. The program offers both the B.A. and the B.S. degree. Those seeking the B.A. must complete two years of college level study of a foreign language, or the equivalent of such study.

Eligibility

Students are eligible for the program if they are at least second-semester freshmen, have fewer than 90 hours completed and/or in progress, and have a Bradley University grade point average of 2.5.

Institute of International Studies

FACULTY *Professor Hwang; Associate Professors C. Bukowski (Director), Tarzi; Assistant Professors J. Bukowski; Affiliate Instructors Misigaro, St John, Weck.*

The Institute of International Studies offers programs of study leading to the Bachelor of Arts degree in international relations. This degree will serve as a basis for various careers in the field of international relations, for graduate work in international studies or for the understanding of international affairs by students who may not choose to work in that area after graduation.

The Institute of International Studies was founded in 1958 at the suggestion of Secretary of State John Foster Dulles. It was among the first in this field ever to be established on the undergraduate level in the United States.

Numerous student activities, special off-campus lectures, co-op assignments, possible overseas studies, and internships are available to enrich the regular program. Students receive special assistance in finding positions after graduation.

Study Abroad, Internships, and Co-op Programs

International studies majors are strongly encouraged to undertake a program of study abroad and to participate in appropriate internships or co-op programs. The Institute will assist its majors in integrating a study abroad program into their curriculum with the goal of enhancing both their Bradley and their foreign study experiences. Further information on foreign study (including eligibility requirements) can be obtained from the Study Abroad Office. Internships and co-op assignments are available through the College Cooperative Education/Internships Program listed elsewhere in this catalog. A Department of State internship is available directly through the Institute (see IS 498). Credit may also be earned for special, individual projects or travel abroad (see IS 490).

Requirements

All students who are candidates for the Bachelor of Arts degree in the field of international studies should plan their program with the aid of their advisor in accordance with the following requirements:

A total of 132 semester hours of acceptable undergraduate work, a minimum of 55 hours of which must be in junior-senior level courses.

<i>General Education</i>	
English Composition	6
Mathematics	3
Speech	3
Western Civilization	3
Philosophical Analysis	3
Literary Analysis	3
Fine Arts	3
Science and Technology	6

International Studies

IS 103, 104, 182, 250, 255, 275, 495, and any other seven IS courses.

Foreign Language

French, German, Portuguese, Spanish, Russian, or Japanese – 6 semesters or the equivalent.

Those students who have previously studied a foreign language must take the placement test given by the Department of English and Foreign Languages. Students who place at the 300 level should consult with the Director of Foreign Languages to determine the best sequence of courses for them. These students will have the opportunity to take a total of 9 of their required hours in specially designed courses such as Commercial Language, Introduction to Translation, Civilization and Culture, Spanish Interpretation, Everyday and Idiomatic French, and so on.

Courses in American government (PLS 105), principles of economics (ECO 221 & 222), computer usage (BMA 172 or completion of the course proficiency exam), and statistics (MTH 111, PSY 205, QM 262 or PLS 209).

Area studies courses are encouraged for students interested in a certain region and may be developed into a special concentration by taking appropriate language, history, literature, art, or other courses related to the region. Minor concentrations may also be developed by students interested in fields such as business, government or a foreign language.

Students also may take an area studies minor (listed elsewhere in this catalog).

In all cases students' programs will be especially designed to help prepare them for meeting their personal career goals.

Baccalaureate Articulation

Associate in Arts or Associate in Science Graduates

A transferring student who has completed an Associate in Arts or an Associate in Science degree in an Illinois public community college may expect to earn a baccalaureate degree from the Institute of International Studies upon the completion of two additional years of course work provided that the following qualifications are met:

1. that the transferring student does not change his or her intended major or area of specialization;
2. that the course work represented in the associate degree include only baccalaureate-oriented college level courses which appear in the ICCB master course file;
3. that within the associate degree, the transferring student shall have completed work in each of the following general education areas totaling a minimum of at least 36 semester hours:
 - a. English and/or communications
 - b. Humanities
 - c. Mathematics and/or natural sciences
 - d. Social sciences
 - e. Foreign language.

Course Descriptions

IS 100 Contemporary World Forces

3 hrs. (Gen. Ed. SF)

Great international forces influencing the contemporary world: secular and religious nationalism, cultural conflict, war, poverty, injustice, and pollution. Understanding and evaluating the impact of these forces and related institutions on the student's life and future career.

IS 101 Participation in Model United Nations

1 hr.

Preparation for and participation in a model United Nations program. May be repeated for a maximum of 4 hours credit provided a different country and issues are addressed with each participation.

IS 103, 104 Introduction to International Studies

3 hrs. each

International relations; macro and micro levels of analysis.

IS 182 Fundamentals of Contemporary Asian Civilization

3 hrs. (Gen. Ed. NW)

Civilization and traditional cultures of Asia; origins of fundamental values in indigenous Asian ways of life.

IS 240 African Civilizations: Africa and the African Diaspora

3 hrs. (Gen. Ed. NW)

Experiences of Africans and their descendants in the Diaspora within a worldwide historical context. Similarities and differences in aesthetics, economics, ideologies, and socio-political considerations.

IS 250 Theory and Practice of World Politics

3 hrs. (Gen. Ed. SF)

Major classical or normative theories of international relations; development of student's own "relevant utopia"; game simulation of realities of world politics. Approved for General Education.

IS 255 Ideologies in International Affairs

3 hrs.

Development of recent belief systems and practices; basis of conflict with democratic principles.

IS 260 Fundamentals of Contemporary Islamic Civilization

3 hrs. (Gen. Ed. NW)

Origins and fundamental characteristics of Muslim civilization. Impact of Islam on contemporary Muslim world.

IS 275 Problems of the Developing World

3 hrs. (Gen. Ed. SF)

Theories of development and their normative assumptions; analysis of the international economic system, relations between industrial and developing nations, and the domestic structures and conditions in different regions of the Third World that affect social and economic development.

IS 285 East Asia in the Modern World

3 hrs. (Gen. Ed. NW)

China, Japan, Korea, and Vietnam: culture, society, institutions, ideas, and external relations, and contributions to universal human knowledge and experience.

IS 301 Ethnicity in the International System**3 hrs.**

Impact of non-state national actors on the international system; diplomatic intercourse between states that results from such interactions; implications for Third World development. Prerequisite: IS 275 or consent of instructor.

IS 305 Diplomacy in International Affairs**3 hrs.**

Evolution of modern diplomacy, fundamentals of diplomacy theory, and contemporary use of diplomacy. Negotiation game for application of student's new knowledge of diplomatic practice. Prerequisite: IS 103 or 104 or consent of instructor.

IS 306 Intelligence in International Affairs**3 hrs.**

Development of secret intelligence practice; contemporary operation of selected intelligence organizations, e.g. CIA, DIA, NSA, and the Russian Intelligence Service. Emphasis on recent debate over proper management and control of U.S. intelligence activities and on role of intelligence in American foreign policy making.

IS 312 U.S. Foreign Policy**3 hrs. (Gen. Ed. SF)**

Mechanics and conduct of modern U.S. foreign policy-making. Cross listed as HIS 312.

IS 318 United States-East Asian Relations**3 hrs.**

U.S. relations with selected countries in Asia; emphasis on modes of involvement.

IS 322 Latin America in the International System**3 hrs.**

Relationships among Latin American nations, the United States, and other powers: international division of labor and the structures formed by it. Emphasis on historical development of Latin American dependence. Prerequisite: IS 275 or consent of instructor.

IS 323 Problems in Latin American Development**3 hrs.**

Examination of special areas and topics to promote understanding of contemporary Latin American developmental policies, and efforts presently underway to render Latin American states more independent from the U.S. through economic and political action. Prerequisite: IS 275 or consent of instructor.

IS 330 European Nations in International Affairs:**Cooperation and the European Union****3 hrs.**

Current inter-European relations and regional organizations; emphasis on significance in contemporary world affairs.

IS 331 European Nations in International Affairs: Conflict and European Security**3 hrs.**

Current inter-European relations and regional organizations; emphasis on significance in contemporary world affairs.

IS 340 Africa in the International System**3 hrs. (Gen. Ed. NW)**

Efforts of African states to develop their societies and reclaim their heritage: premises and assumptions of African social systems; past culture and culture in the making; domestic politics and foreign relations.

IS 353 Russian Foreign Policy**3 hrs.**

Evolution of major elements of Russian foreign policy, impact of communist past, current post-communist attitudes and policies toward the world, analysis of foreign policies of other post-Soviet Slavic states.

IS 355 Imperial Russia**3 hrs. (Gen. Ed. NW)**

Overview of early Russian development: major socio-political and economic aspects of the Czarist period. Emphasis on imperialist expansionism from the 16th century to the Bolshevik Revolution.

IS 359 Russo-Chinese Relations**3 hrs.**

Comparative analysis of Russian and Chinese geopolitical interests; review of past conflicts and their impact on world affairs.

IS 363 The Middle East Nations in International Affairs**3 hrs.**

Contemporary problems of the Middle East: Arab-Israeli conflict, inter-Arab rivalries, pressure of terrorism, role of oil. Impacts of Middle Eastern issues on international affairs.

IS 373 The South and Southeast Asian Nations in International Affairs**3 hrs.**

Nations of the Indian subcontinent and Southeast Asia: mutual relations and respective positions in world affairs.

IS 381 East Asian International Relations**3 hrs.**

International relations of East Asia (China, Japan, Korea) from its opening to the Western World to the present.

IS 385 Problems of Contemporary Asia**3 hrs.**

Seminar: various issues and problems of contemporary Asia; emphasis on global impact.

IS 410 Interdependence in World Affairs**3 hrs.**

Present trends toward global interdependence; challenges presented to nation-states in an increasingly complex international environment where traditional means of statecraft are of declining relevance.

IS 415 Transnational Forces in World Affairs**3 hrs.**

Role of nongovernmental actors in international relations; impact on traditional nation-states. Transnational parties, multi-national corporations, terrorist groups, religious groups, and elite networks.

IS 420 The Caribbean States in the International System**3 hrs. (Gen. Ed. NW)**

Caribbean economic and social development; emphasis on the contemporary period. Understanding intra-regional dynamics and the area's international relations; analysis of impact of the international economic system on the domestic and foreign policies of Caribbean governments; analysis of the racial dimension of Caribbean societies. Prerequisite: IS 275 or consent of instructor.

IS 431 East European Systems**3 hrs.**

Advanced readings to facilitate seminar-style discussion of selected problems facing Eastern Europe. Possible topics: political and economic reform, coping with the legacy of socialist rule, foreign policy, and regional relations. Prerequisite: IS 330 or consent of instructor.

IS 440 Problems in Southern African Development
3 hrs.

Selected problems in African development and international relations: nationalism, ideology, foreign policies and relations, international institutions, multinational corporations, liberation movements, ethnicity, national integration, and urbanization. Prerequisite: IS 340 or consent of instructor.

IS 450 International Finance
3 hrs.

General structure of the international monetary order; issues of national adjustment, confidence, and liquidity. Emphasis on role of the dollar, problems of LDC's, and efforts toward international monetary coordination.

IS 475 Contemporary Issues in International Studies
1-3 hrs.

In-depth study of selected problems in world affairs. May be repeated for a maximum of 6 hrs. credit provided a different topic is taken each term.

IS 490 Directed Study and Travel Abroad: (selected region)
3 hrs.

Provides academic credit to students participating in designated, short-term programs abroad. Student must participate in the designated travel program in order to receive credit for this course. Course may be repeated once providing the student participates in a different travel program.

IS 495 Advanced Seminar in International Affairs
3 hrs.

For IS majors: evaluation of the background of and connections between current events and trends in international studies. Prerequisite: junior or senior standing in IS.

IS 498 Department of State Internship
1-12 hrs.

For majors planning careers in the foreign service: 3 months of work-study at the junior officer level in the Department of State or in a United States embassy. Qualified students should contact the IS director six months in advance to allow for clearance and acceptance. Prerequisites: senior standing; approval of IS director.

IS 499 Research in International Relations
1-3 hrs.

Special projects in IS for qualified students.

Latin American Studies

FACULTY COORDINATING COMMITTEE *Cisneros (Foreign Languages-Spanish) Director, Dannehl (Political Science), Felder (Economics), Fowler-Salamini (History), Tarzi (International Studies).*

The Latin American studies minor has as its goal to introduce students to the broad spectrum of political, social, economic, and cultural forces which have shaped this region in the past and continue to influence it today. This minor is designed to be interdisciplinary in nature, and does not seek to encourage concentration in a single discipline or a single country. It may, however, prepare the student for such an endeavor in future studies.

A key requirement of this minor is the completion of a summer or semester abroad program in Latin America. The purpose of this requirement is to enhance the student's understanding and appreciation of Latin American culture and society.

Minor in Latin American Studies

Curriculum and Requirements

A minimum of 18 semester hours is required for this minor, at least 6 hours of which must be completed in an approved study abroad program.

Students must complete FLS 202 or the equivalent. This language requirement must be fulfilled before the study abroad experience. No FLS 100- or 200-level courses may be used to satisfy the 18 semester hours required for this minor.

The course work completed in residence at Bradley must include 9 hours of required coursework in foreign languages-Spanish, international studies, and history. At least one of these courses must be completed at Bradley prior to study abroad. Students must also complete 3 hours of elective courses. A gradepoint average of at least 2.0 is required in courses taken for the minor.

Students shall choose courses and study abroad electives, in consultation with an advisor in this minor, that deal with the history, economics, language, or culture of Latin America. The study abroad portion of the requirement must be taken at a Bradley-approved site in Latin America. Such coursework can be taken in Spanish or English.

Required Courses (9 hours)

HIS 105 Non-Western Civilization: Latin America
 IS 322 Latin America in the International System **or**
 IS 323 Problems in Latin American Development
 FLS 322 Latin American Civilization and Culture

Elective Courses with a Latin American Concentration (3 hours)

FLS 315 Topics in Hispanic Culture and Civilization
 FLS 316 Topics in Hispanic Language and Literature
 FLL 315 Topics in Language, Literature, and Culture
 FLS 492 or 495 Independent Study
 HIS 332 Modern Latin American History
 HIS 334 Non-Western History: Topics
 HIS 335 Modern Mexico
 HIS 452 Area Studies Research Seminar
 HIS 405 or 406 Independent Reading or Study in History
 IB 400 Topics in International Business
 IS 275 Problems in Developing Countries
 IS 420 The Caribbean States in the International System
 IS 475, 490, 498, 499 seminar, internship, and special research project

Study Abroad Courses (6 hours)

Department of Mathematics

FACULTY *Professors Jungck, McAsey (Chair), Szeto; Associate Professors Delgado, Hahn, Kasube, McKenzie, Nanyes, Quigg, Timm; Assistant Professors Bedenikovic, Haverhals, Mou, Xue; Lecturer Sterling; Visiting Assistant Professor Paek.*

A student considering mathematics as a career should realize that emphasis in mathematics courses will change as the individual progresses through an academic program. The initial concern for solving problems is later dominated by the more important objectives of formulating problems in mathematical language and dealing with mathematical structures and abstract ideas. It should be stressed that an effective mathematician should be a well-educated person, possessing not only the technical background of mathematics but also a selection of courses from other disciplines.

Mathematics Major

All students majoring in mathematics must meet the following departmental requirements:

1. The mathematics core curriculum
 MTH 121, 122, 223 Calculus I, II, III
 MTH 207 Elementary Linear Algebra with Applications
 MTH 420 Introduction to Analysis
 MTH 325 Probability and Statistics I
 MTH 404 Modern Algebra I
 MTH 370 Seminar
 CS 104 or 106 Programming
2. At least two of the following sequences:
 MTH 420 and 421; MTH 325 and 326; MTH 404 and 405; MTH 501 and 502; MTH 510 and 511.
 Other sequences may be approved by the department; however, any two sequences must include four distinct courses.
3. At least 22 semester hours of mathematics courses numbered 301 or above. Upper level core and sequence courses are counted as part of this requirement.

The department also recommends PHL 102 Logic or CS/PHL 320 Symbolic Logic.

Unless the requirements of a course have been met through some other means such as testing or transfer credit, all entering mathematics majors are advised to begin their academic program with the following course of study.

Freshman Year

MTH 121, 122 Calculus I, II	8
CS 104 or 106 Programming	3
ENG 101 English Composition	3
COM 103 Oral Communication Process	3
Electives	15

The Department of Mathematics recognizes that students majoring in mathematics will have diverse career interests and goals. In fact, flexibility is one of the desirable attributes of a major in mathematics. With proper selection of elective courses, programs may be designed for students who wish to specialize in mathematics, teach at the high school level, or for students with career interests in the application of mathematics to, for example, actuarial science, business, computer science, economics or the physical sciences. By selecting appropriate courses, mathematics majors will often complete a minor in one of these applied areas. Some suggestions are as follows:

Mathematics

Students considering further study of mathematics at the graduate level should elect courses such as;
 MTH 307 Linear Algebra
 MTH 345 Differential Equations
 MTH 403 Complex Variables
 MTH 405 Modern Algebra II
 MTH 406 Elementary Plane Topology
 MTH 421 Advanced Calculus

In addition, a year of physics (PHY 110 and 201) and a foreign language may prove beneficial.

Mathematics - Secondary Education

To be certified in the state of Illinois, students must complete the requirements of a secondary teaching certificate. These requirements are listed under the Department of Teacher Education (Secondary Programs) and include a minimum of 35 semester hours in education courses. Suggested mathematics electives include:

MTH 301 Combinatorics
 MTH 305 Modern Geometry
 MTH 310 Introduction to Number Theory

Actuarial Science – Mathematics Major

The actuarial field is one of the oldest applications of mathematics and deals with insurance, annuity, and pension plans of all kinds.

An actuarial science-mathematics major is

- Required to take the following courses:

MTH 121, 122, 223 Calculus I, II, III	12
MTH 207 Elementary Linear Algebra	3
MTH 325, 326 Probability and Statistics I, II	6
MTH 335 Topics in Actuarial Science	3
MTH 427 Applied Statistical Methods	3
MTH 510 Numerical Methods I	3
Elective mathematics course (see note 2)	3
MTH 511 or IE 314 elective (see note 3)	3
CS 104 or 106 Programming	3
ATG 157 Accounting Principles I	3
ECO 221, 222 Microeconomics,	6
Macroeconomics	6
IE 313 Operations Research I	3
RMI 315 Risk Management and Insurance	3
FIN 322 Business Finance	3

- Required to take at least one additional three-hour course from courses numbered MTH 301 through MTH 490 other than MTH 325, MTH 326, MTH 335 and MTH 427.
- Required to take either MTH 511 or IME 314. IE 514 may be taken in place of IME 314.
- For an AS-M major a maximum of 25 percent of the total undergraduate program credit hours including required courses may consist of courses from the Foster College of Business Administration. For example, in a 124-credit-hour program a maximum of 31 credit hours of business courses may be taken.

Although no additional business courses are required, students wishing to take business courses in addition to those required courses listed above should consider choosing from among the following, subject to the restriction noted above: BUS 100, BUS 200, BUS 210, BUS 300, IB 306, ATG 158, MTG 315, BUS 342, BMA 352, BMA 372, BMA 452, ECO 301, FIN 325, FIN 425, any RMI course. The course IME 314 is also of interest for AS-M majors.

Mathematics Minor

A mathematics minor requires 24 semester hours in mathematics as follows:

- MTH 121, 122, 223 Calculus I, II, III; and
- 12 semester hours in mathematics courses numbered 301 or above; or either MTH 207 or MTH 224 and 9 semester hours in mathematics courses numbered 301 or above.

Advanced Placement in Mathematics

Students scoring a 5, 4 or 3 on the Advanced Placement (AP) program mathematics examination administered by the College Entrance Examination Board may receive up to eight semester hours of credit for MTH 121 and MTH 122 Calculus I and II.

Course Descriptions

NOTE: Not more than 10 semester hours of credit may be earned from the following courses: MTH 100, 101, 105, 109, 110, and 111. Credit will not be given for MTH 101, 105, or 109 to students with credit for MTH 112 or 115. Credit will not be given for MTH 101, 105, 109, 110, 112, or 115 to students with credit for MTH 121. Credit will not be given for both MTH 116 and MTH 122. Students majoring in departments of the colleges of business administration and engineering and technology are advised to check college requirements for additional restrictions and limitations.

MTH 100 Intermediate Algebra 2 hrs.

Developmental course emphasizing algebraic manipulations. Intended for students with minimal background in mathematics. Basic operations with real numbers, polynomials, factoring, properties of exponents, solving linear and quadratic equations. Not open to students with credit in any math course numbered above MTH 100.

MTH 101 Basic College Mathematics**3 hrs. (Gen. Ed. MA)**

Development of basic mathematical skills. Problem solving and contemporary applications. Prerequisite: 3 semesters of high school algebra.

MTH 105 Finite Mathematics**3 hrs.**

Topics from finite mathematics: sets, matrices, systems of linear equations, linear programming, elementary probability, multistage processes, and Markov chains. Prerequisite: 3 semesters of high school algebra, or equivalent.

MTH 109 College Algebra**3 hrs.**

For students who need to strengthen their algebra skills: factoring polynomials; solving quadratic and other equations; exponents, logarithms, and graphing. Prerequisites: 3 semesters of high school algebra, and qualifying score on algebra placement exam; or grade of C or better in MTH 100.

MTH 110 Trigonometry**2 hrs.**

For students who need to strengthen their trigonometry skills: trigonometric functions and their inverses; graphing; trigonometric identities and equations; roots of complex numbers; applications. Corequisite: MTH 109.

MTH 111 Elementary Statistics**3 hrs. (Gen. Ed. MA)**

Probability, descriptive statistics, statistical models, correlation and regression, testing hypotheses, confidence limits, and selected applications. Prerequisite: 3 semesters of high school algebra, or equivalent.

MTH 112 Precalculus**4 hrs.**

For students needing further background in mathematics before enrolling in calculus (especially MTH 121). Thorough study of algebraic, transcendental, and trigonometric functions; emphasis on graphing and use of algebra. Prerequisites: 3 years of high school math including 3 semesters of high school algebra; appropriate entrance and/or math precalculus placement scores.

MTH 115 Brief Calculus with Applications I**4 hrs. (Gen. Ed. MA)**

Differential and integral calculus with emphasis on understanding through graphs. Topics in analytic geometry, limits, derivatives, antiderivatives, definite integrals, exponential and logarithmic functions, and partial derivatives. Prerequisite: grade of C or better in MTH 109 or 112; or qualifying score on math placement exam.

MTH 116 Brief Calculus with Applications II**3 hrs. (Gen. Ed. MA)**

Continuation of MTH 115. Includes trig functions, integration techniques, series, differential equations, and multivariable calculus. Prerequisites: C or better in MTH 115; MTH 110 (trigonometry).

MTH 118 Calculus with Review A**4 hrs.**

Topics in analytic geometry, limits, continuity, derivative, and pertinent algebra review. Prerequisites: qualifying entrance and/or placement scores.

MTH 119 Calculus with Review B**4 hrs.**

Continuation of MTH 118. Topics in analytic geometry, definite integral, Fundamental Theorem of Calculus, and pertinent algebra review. Prerequisite: grade of C or better in MTH 118.

MTH 120 Discrete Mathematics**3 hrs.**

Introduction to graph theory, Boolean algebra, mathematical induction, and elementary combinatorics. Prerequisites: qualifying entrance and/or math precalculus placement scores as for MTH 121; or grade of C or better in MTH 112.

MTH 121 Calculus I**4 hrs. (Gen. Ed. MA)**

Topics in analytic geometry; limits; continuity; differentiation; introduction to integration; applications. Prerequisites: qualifying entrance and/or math precalculus placement scores; or grade of C or better in MTH 112.

MTH 122 Calculus II**4 hrs. (Gen. Ed. MA)**

Topics in calculus of logarithmic, exponential, and trigonometric functions; techniques of integration; analytic geometry; indeterminate forms; improper integrals; infinite series. Prerequisite: grade of C or better in MTH 121.

MTH 127 Elementary Matrix Theory**1 hr.**

Matrices, determinants, inverse matrices, simultaneous linear equations, eigenvalues, and eigenvectors. Prerequisite: transfer students: a 3 hour differential equations course.

MTH 190 Topics in Mathematics for Middle School Teachers**3 hrs.**

Topics for middle school math teachers: analytic geometry, problem solving, topics in calculus. For elementary education majors only. Prerequisite: consent of instructor.

MTH 202 Introduction to Numerical Methods**3 hrs.**

Introductory treatment of numerical methods used in the solution of scientific and engineering problems: approximations, interpolation, root finding, numerical integration, linear algebraic systems, first-order differential equations. Numerical and mathematical software will implement algorithms. Prerequisite: MTH 122.

MTH 207 Elementary Linear Algebra with Applications**3 hrs.**

Matrix algebra, determinants, theory of simultaneous equations, vector spaces, bases, Gram-Schmidt orthogonalization, eigenvalues, eigenvectors, transformations, and applications. Prerequisite: MTH 122, or consent of instructor.

MTH 223 Calculus III**4 hrs. (Gen. Ed. MA)**

Topics in vectors; calculus of functions of several variables; multiple integrals; vector calculus. Prerequisite: grade of C or better in MTH 122.

MTH 224 Elementary Differential Equations**4 hrs.**

Solution of second order equations with constant coefficients; matrix algebra applied to the solution of first order systems; Laplace transforms; power series methods; numerical methods; modeling; applications. Prerequisite: MTH 223.

MTH 299 Problem Seminar**1 hr.**

Students discuss a variety of mathematical problems and present solutions. Repeatable for a maximum of 4 hours credit. Pass/fail. Prerequisite: consent of instructor.

MTH 300 Topics for Middle School Math Teachers
3 hrs.

Topics of special interest which may vary each time course is offered, rotating among geometry, algebra/number theory, and history of mathematics. Topic stated in current Academic Handbook. For middle school teacher certification; does not count for math majors or math minors. May be repeated under different topics for a maximum of 9 hours credit. Prerequisites: C or better in ETE 115 and ETE 225; C or better in calculus, computer programming, or statistics (MTH 111); or consent of instructor.

MTH 301 Combinatorics**3 hrs.**

Combinatorial analysis, recurrence relations, generating functions, and finite-state machines. Prerequisites: MTH 120, 122; or MTH 223.

MTH 302 Introduction to Graph Theory**3 hrs.**

Theory and applications of graphs. Fundamental properties of graphs, circuits, cycles, trees, and graph algorithms; planarity and coloring. Prerequisites: MTH 120, 122; or MTH 223.

MTH 305 Modern Geometry**3 hrs.**

Modern geometry; methods similar to those used in plane geometry. Prerequisite: MTH 223.

MTH 307 Linear Algebra**3 hrs.**

Vector spaces, linear transformations, inner product spaces, Jordan canonical forms, spectral theorems, and selected topics. Prerequisite: MTH 207.

MTH 310 Introduction to Number Theory**3 hrs.**

Historical development of number theory; primes and their distribution; divisibility; unique factorization of integers; congruences; Diophantine equations; number theoretic functions. Prerequisite: MTH 223.

MTH 325, 326 Probability and Statistics I, II**3 hrs. each**

Probability and statistical concepts, theory, and applications: random variables, sampling, central limit theorem, theories of estimation and the testing of hypotheses, linear models, and nonparametric methods. Prerequisite: MTH 223; MTH 325 required for MTH 326.

MTH 335 Topics in Actuarial Science**3 hrs.**

Preparation for Actuarial Exams 140, 150. Topics may vary each time course is offered, rotating among compound interest, mathematics of life contingencies, and actuarial mathematics. Topic stated in current

Academic Handbook. May be repeated under different topics for a maximum of 9 hours credit. Prerequisites: MTH 207, MTH 223; consent of instructor.

MTH 345 Differential Equations**3 hrs.**

Existence and uniqueness theorems; solution methods for initial and boundary value problems; linear and nonlinear systems; stability theory; difference equations. Prerequisites: MTH 207, 223; or consent of instructor.

MTH 370 Mathematics Seminar**1 hr.**

Seminar course introducing various mathematical topics. Prerequisite: junior or senior standing; mathematics major or minor or consent of Department Chair.

MTH 390 Mathematical Modeling**3 hrs.**

Introduction to constructing and evaluating mathematical models for describing and analyzing real world phenomena. Continuous and/or discrete models. Prerequisite: MTH 223; consent of instructor.

MTH 403 Complex Variables I**3 hrs.**

Introduction to complex calculus: elementary functions, integration, Cauchy's formula, residue theory, and applications. Prerequisites: MTH 207, 223; or MTH 224.

MTH 404 Modern Algebra I**3 hrs.**

Basic theory of sets, integers, and mappings; elementary properties of groups, rings, and fields. Prerequisite: MTH 207, 223.

MTH 405 Modern Algebra II**3 hrs.**

Topics selected from theory of rings, field theory, and applications. Prerequisite: MTH 404.

MTH 406 Elementary Plane Topology**3 hrs.**

Introduction to rudiments of point set topology. Concepts of compactness, connectedness, and continuity, in context of general topological spaces and metric spaces. Prerequisite: MTH 420, or consent of instructor.

MTH 420 Introduction to Analysis**3 hrs.**

Real number system and functions of real variables: sequences, limits, continuity, differentiation, series, uniform convergence, and the Riemann-Stieltjes integral. Prerequisite: MTH 207, 223.

MTH 421 Advanced Calculus**3 hrs.**

Functions of several variables. Calculus of transformations, implicit and inverse function theorems, line and surface integrals, Fourier analysis, fixed point theorems, and applications. Prerequisite: MTH 420 or consent of instructor.

MTH 427 Applied Statistical Methods**3 hrs.**

Regression analysis, time series analysis, and forecasting. Prerequisites: MTH 326 or consent of instructor.

MTH 490 Topics in Mathematics**3 hrs.**

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. Prerequisite: consent of instructor.

MTH 491 Directed Individual Studies in Mathematics
1-16 hrs.

Individual work in special areas of mathematics for advanced, qualified undergraduate students. May register for more than 6 hrs. credit only if enrolled in an approved special off campus program. Prerequisite: consent of Department Chair.

MTH 501 Topics in Applied Mathematics I
3 hrs.

Theory, applications, and algorithms for basic problems of modern applied mathematics. Symmetric linear systems, minimum principles, equilibrium equations, calculus of variations, orthogonal expansions, and complex variables. Prerequisites: MTH 224 or 345.

MTH 502 Topics in Applied Mathematics II
3 hrs.

Continuation of MTH 501. Selected numerical algorithms: Fast Fourier transform, initial value problems, stability, z-transforms, and linear programming. Prerequisite: MTH 501 or consent of instructor.

MTH 510 Numerical Methods I
3 hrs.

Introduction to numerical and computational aspects of various mathematical topics: finite precision, solutions of non-linear equations, interpolation, approximation, linear systems of equations, and integration. Cross listed as CS 510. Prerequisite: CS 104 or 106; MTH 207 and 223.

MTH 511 Numerical Methods II
3 hrs.

Continuation of CS/MTH 510: further techniques of integration, ordinary differential equations, numerical linear algebra, nonlinear systems of equations, boundary value problems, and optimization. Cross listed as CS 511. Prerequisites: MTH 224 or 345; CS/MTH 510.

MTH 514 Partial Differential Equations
3 hrs.

Fourier series and applications to solutions of partial differential equations. Separation of variables, eigenfunction expansions, Bessel functions, Green's functions, Fourier and Laplace transforms. Prerequisite: MTH 224 or 345.

MTH 515 Finite Element Analysis
3 hrs.

Mathematics of finite elements, variational and residual methods, error analysis, element analysis, ordinary and partial differential equations, various boundary conditions, and selected applications. Prerequisite: MTH 224 or 345.

MTH 590 Special Topics
3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. Prerequisite: consent of instructor.

Medical Technology Program

FACULTY COORDINATING COMMITTEE *Fan (Biology), Fry (Chemistry) Chair, Gayhart (Chemistry), Kurtz (Biology), McQuade (Chemistry).*

ADJUNCT FACULTY *Adjunct Professor Hayes, Jhaveri; Affiliate Instructors Moewe, Roncancio, Sutherland, Wray.*

The interdepartmental major in medical technology is jointly sponsored by the departments of biology and chemistry. The objective of the program is to provide the student with the appropriate background for admission to an accredited medical technology hospital program. This is a 3 + 1 program in which the student normally spends the first three years completing University course work necessary to fulfill general requirements for a bachelor's degree and a fourth year which is a clinical year spent in an affiliated hospital medical technology program. Upon successful completion of the required University course work, the student may apply to any of the affiliated and accredited hospitals offering a medical technology program. After successful completion of a hospital medical technology program, the student will be granted a bachelor's degree from Bradley. Students electing this major will be assigned an advisor in either the Department of Biology or the Department of Chemistry.

Students may also apply to any accredited medical technology hospital program if they have a baccalaureate degree in a 4 + 1 program. The degree obtained by most of these students is in biology or the liberal arts and sciences individualized major program.

Upon successful completion of the hospital clinical program and receipt of the baccalaureate degree, graduates are eligible to sit for the national certification exams in medical technology.

Descriptions of courses required for the degree in medical technology are listed under regular departmental offerings.

Clinical Year

The clinical year will include the following courses taken at an affiliated hospital medical technology program. The student registers at Bradley for OCP 388. A one-time fee of \$100 is charged for OCP 388.

Clinical Chemistry I
4-6 hrs.

Theory and practice of analytical biochemistry as applied to pathologic states, methodology, and instrumentation. Statistics as applied to reagent preparation, result determination, and quality control.

Clinical Chemistry II
2-4 hrs.

Theory and practice of analytical biochemistry as applied to specialized tests for drugs, endocrine function, and urine and body fluid analysis.

Clinical Hematology

5 hrs.

Study of the origin, development, morphology, physiology, and pathophysiology of the formed elements of the blood and bone marrow. Manual and automated methods of cell counting, differentiation, and other special hematological procedures on blood and body fluids used in disease diagnosis are included.

Clinical Hemostasis

1 hr.

Study of the platelet, vascular, coagulation, and fibrinolytic systems. Testing procedures and the application of the principles of hemostasis as related to disease states and therapeutic monitoring are also included.

Clinical Immunohematology

4 hrs.

Study of red cell antigen-antibody systems, antibody screening and identification, compatibility testing, and immunopathologic conditions. Also included are donor requirements and blood component preparation and therapy.

Clinical Immunology

3 hrs.

Study of the principles of the protective and adverse aspects of the cellular and humoral immune responses. Theory and performance of test procedures based on antigen-antibody reactions and clinical significance of test results are included.

Clinical Microbiology I

4-6 hrs.

Theory and practice of the isolation and identification of pathogenic bacteria and mycobacteria in clinical specimens through cultures, morphology, biochemical, and/or serological reactions and their drug susceptibility. The relation of clinical testing to disease states is also included.

Clinical Microbiology II

2-4 hrs.

Theory and practice of the isolation and identification of fungi, parasites, rickettsia, and viruses utilizing morphological, cultural, biochemical, and serologic methods. The relation of clinical testing to disease states and epidemiology as it applied to microbiology is also included.

Special Topics in Clinical Laboratory Science

1 hr.

An overview of medical ethics, patient approach, the theory and practice of phlebotomy techniques, laboratory safety, applications of laboratory computer systems, and independent clinical research and development.

Clinical Management and Education

1 hr.

A basic introduction to the principles and theory of management and education as related to the clinical laboratory. The special job responsibilities of the clinical laboratory scientist in management and education are addressed.

Requirements

1. Satisfy University and LAS general education requirements and successfully complete required course work prior to admission to a hospital medical technology program.
2. Receive credit for a minimum of 40 junior-senior hours, 18 of which must be from the College of Liberal Arts and Sciences. Sixteen junior-senior hours will be granted upon successful completion of a hospital medical technology program.
3. Successful completion of a medical technology program in National Accrediting Agency for Clinical Laboratory Science (NAACLS). Approval of the coordinating committee is required for attendance at an accredited non-affiliated hospital.

Students desiring a major in medical technology will be required to complete 39 hours of science courses distributed as follows: 24 hours of biology (if BIO/CHM 141 is taken as a biology course), 16 hours of laboratory chemistry and 3 hours of college mathematics. These requirements may be met by taking the following courses:

BIO/CHM 141 Introduction to Medical Technology	1
BIO 123 Principles of Biology I	4
BIO 124 Principles of Biology II	4
BIO 395 General Microbiology	4
BIO 396 Immunology of Host Defense	3
BIO 200 Human Anatomy and Physiology	3
BIO 203 Human Anatomy and Physiology Laboratory	2
BIO 205 Pathophysiology or	
BIO 361 Microanatomy	3-4
	24-25
CHM 161 General Chemistry or	
CHM 149 Fundamentals of General Chemistry	4
CHM 166 General Chemistry II (5) or	
CHM 151 Fundamentals of Organic Chemistry (2) and	
CHM 153 Organic-Biochemistry Laboratory (1)	3 or 5
BIO/CHM 365 Cell and Molecular Biology (3-4) or	
CHM 152 Fundamentals of Biochemistry (2)	2-4
CHM 250 Organic Chemistry	4
CHM 306 Intermediate Analysis	3
	16-20
MTH 111 Elementary Statistics or	
MTH 109 College Algebra	3
Total required science hours (minimum)	39

Courses highly recommended are, PHY 107, MTH 115, and CIS 102, CS 104 or CHM 191, 391.

Note: Those students who have not attained an overall gradepoint average of at least 2.75 after completion of 60 semester hours will require permission of the committee to proceed with the medical technology program.

The following schedule of courses is suggested for the freshman year.

First Semester

BIO 123 Principles of Biology I	4
CHM 161 General Chemistry	4
MTH 111 Elementary Statistics	3
ENG 101 English Composition or	
COM 103 The Oral Communication Process	3
General Education Elective	3
	<hr/>
	17

Second Semester

BIO 124 Principles of Biology II	4
CHM 151 Fundamentals of Organic Chemistry	2
CHM 152 Fundamentals of Biochemistry	2
CHM 153 Organic-Biochemistry Laboratory	1
BIO/CHM 141 Introduction to Medical Technology	1
COM 103 The Oral Communication Process or	
ENG 101 English Composition	3
General Education Elective	3
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	16

The hours required for a major in Medical Technology are distributed as follows:

From Medical Technology Program (OCP 388)	32
Biology	*24-25
Chemistry	16
College Mathematics	3
English	6
Speech Communication	3
General Education Electives and other	
Electives	38-39
	<hr/>
Total (minimum)	124

* If BIO/CHM 141 is taken as a biology course.

Department of Philosophy and Religious Studies

Philosophy Program

PHILOSOPHY FACULTY *Professor Scharle; Assistant Professors Greene, Kelley.*

The philosophy program offers courses designed to serve a variety of academic needs by providing a confrontation with the principal thinkers and the fundamental issues that have shaped humankind's intellectual heritage, by providing a philosophical perspective of several other fields, and by providing – as preparation for graduate study – a solid grounding in the chief figures, methods, division, and problems of philosophy. Regardless of the students' vocational interests, academic major program, or plans for graduate work, the program seeks to stimulate their intellectual involvement in the continuing re-exploration of basic and meaningful questions. The program emphasizes that the student demonstrate, in philosophy courses, the ability to communicate effectively and acceptably in both written and oral English.

Major

To major in philosophy a student must:

1. complete not less than 24 semester hours in philosophy, including not less than 20 hours in courses numbered 200 or above;
2. have a grade point average exceeding 2.0 in all philosophy courses numbered 200 or above; and
3. select a member of the philosophy faculty as an academic advisor in order to plan the choice and sequence of philosophy courses, and obtain approval of this plan by the philosophy faculty; and
4. complete the all-University course requirements and the College of Liberal Arts and Sciences course requirements.

Philosophy majors may earn either a B.S. or B.A. degree. Philosophy majors intending to pursue a graduate degree in philosophy, however, are urged to fulfill the B.A. requirements.

The philosophy program provides individualized curricula for students majoring in philosophy. Besides preparation for teaching on the college level, a major in philosophy serves as an excellent pre-law curriculum. In addition, students majoring in economics, the political and social sciences, arts and humanities, history, communications, psychology, and business will find a second major in philosophy eminently beneficial in their own fields of academic emphasis.

Minor

To minor in philosophy a student must:

1. complete not less than 15 semester hours in philosophy;
2. have a minimum gradepoint average of 2.0 in all philosophy courses;
3. select a member of the philosophy faculty as an academic advisor in order to plan a coherent structured course of study developed according to the needs and interests of the student.

Course Descriptions

PHL 102 Logic

3 hrs.

Develops skills in analysis and evaluation of reasoning in everyday situations; improves insights into argument construction and exact methods of proof.

PHL 103 An Inquiry Into Values

3 hrs. (Gen. Ed. HP)

Major value issues addressed by the world's most influential philosophers.

PHL 300 Ancient and Medieval Philosophy

3 hrs.

Development of ideas having a significant influence on Western thought during ancient and medieval times.

PHL 304 Renaissance and Modern Philosophy

3 hrs.

Development of ideas having a significant influence on Western thought during the Renaissance and modern periods, terminating with the philosophy of Hegel.

PHL 306 Recent Philosophy

3 hrs.

Development of ideas having a significant influence on Western thought during the 19th and 20th centuries.

PHL 307 Classical Political Philosophy

3 hrs. (Gen. Ed. HP)

Systematic political thought in Western philosophy during ancient and medieval times. Cross listed as PLS 307. Prerequisite: junior standing.

PHL 308 Modern Political Philosophy

3 hrs. (Gen. Ed. HP)

From the beginning of the modern period through the 19th century. Cross listed as PLS 308. Prerequisite: junior standing.

PHL 311 Existentialism

3 hrs.

Philosophical meaning of existentialism and its relation to literature, theology, psychology, and psychiatry. Prerequisite: 3 hours of philosophy or religious studies, or consent of instructor.

PHL 320 Symbolic Logic

3 hrs.

Logical systems: propositional and predicate calculi. Truth tables, proofs, tautologies, principles of inference, Boolean algebra, DeMorgan's Laws, quantifiers, representations, and set theory. Cross-listed as CS 320. Prerequisite: MTH 120.

PHL 344 Philosophy of Religion

3 hrs.

Nature of religion; function and validity of religious concepts in the modern world. Cross listed as RLS 344. Prerequisite: 3 hours of religious studies or philosophy.

PHL 347 Ethics

3 hrs. (Gen. Ed. HP)

Major ethical theories as they provide insights into our existence as moral beings; how we exhibit this in moral decision and behavior.

PHL 350 Art in Human Experience

3 hrs. (Gen. Ed. FA)

Detailed examination and explanation of various forms of visual, musical, literary, and dramatic arts; function of artistic creation in offering direct experience and appreciation of the essence of human feeling. Background in the arts recommended.

PHL 355 Philosophical Issues in Health Care

3 hrs.

Recent advances in biology and medicine: implications for human life and values. For future health care professionals, and others with humanistic concerns in this area.

PHL 403, 404 Seminar in Philosophy

3 hrs. each

Advanced study of a particular thinker, system, work, or movement in philosophy. Prerequisite: 6 hrs. in philosophy, or consent of instructor.

PHL 407 American Political Philosophy

3 hrs.

Systematic political thought in American philosophy from colonial times to the present. Cross listed as PLS 407. Prerequisite: PHL/PLS 307 or 308, or consent of instructor.

PHL 551, 552 Reading in Philosophy

1-3 hrs. each

Directed individual study. Prerequisites: 6 hours in philosophy; senior or graduate standing; consent of department chair.

Religious Studies Program

RELIGIOUS STUDIES FACULTY *Professor Fuller;*
Associate Professors Getz, Meyer, Pucelik (Chair).

The primary concern of the program is for the undergraduate student who would elect study in this significant area of human culture and life. A comprehensive and non-sectarian program of studies is provided to meet the special interests and needs of all students. The program is also appropriate for students electing a major in religious studies with the intention of preparing for matriculation for the Master of Arts degree in religious studies (or religion) at another institution.

Major

To major in religious studies a student must:

1. complete not less than 24 semester hours in religious studies, including not less than 20 in courses numbered 200 or above; and
2. have a gradepoint average exceeding 2.0 in all religious studies courses numbered 200 or above;
3. select a member of the religious studies faculty as an academic advisor in order to plan the choice and sequence of religious studies courses; and
4. complete the all-University course requirements and the College of Liberal Arts and Sciences course requirements.

Religious studies majors may earn either a B.S. or B.A. degree. Religious studies majors intending to pursue a graduate degree in religious studies, however, are urged to fulfill the B.A. requirements.

Minor

To minor in religious studies a student must:

1. complete not less than 15 semester hours in religious studies;
2. have a minimum grade point average of 2.0 in all religious studies courses;
3. complete the following courses:
 - a. RLS 101 Introduction to Religious Studies
 - b. RLS 331 and RLS 332 Religions of the World
 - c. One of the following: RLS 300 Hebrew Bible/Old Testament, RLS 302 New Testament, RLS 308 Christian Beliefs and Teachings
 - d. An elective.
4. select a member of the religious studies faculty as an academic advisor in order to plan a coherent structured course of study developed according to the needs and interests of the student.

Course Descriptions

RLS 101 Comparative Religion

3 hrs. (Gen. Ed. HP)

Survey of human values and religious experiences found in major religions of the world.

RLS 120 Religion and Culture in the Middle East

3 hrs. (Gen. Ed. NW)

Survey of religious experience, beliefs, and practices that emerged and developed in the cultures of the Middle East. Emphasis on origins of Semitic, Hebrew, and Arabic religions, and their influence on social, political, artistic, and literary expression of the area.

RLS 200 Contemporary Religion in the United States

3 hrs. (Gen. Ed. HP)

Analysis of religious faith, worship, and practice in an age of transition. Emphasis on challenges that confront a person's faith. Survey of major American religious denominations.

RLS 290 Religion and the Life Cycle

3 hrs. (Gen. Ed. SF)

Religious aspects of human development: childhood through adolescence into maturing adulthood.

RLS 300 Hebrew Bible/Old Testament

3 hrs. (Gen. Ed. HP)

Human values relevant to contemporary life found in ancient writings of Judaism and Christianity.

RLS 302 New Testament

3 hrs. (Gen. Ed. HP)

Human values in the early Christian experience as reflected in its scriptures.

RLS 308 Christian Beliefs and Teachings

3 hrs.

Traditional teachings and contemporary developments in the study of the Christian religion.

RLS 310 Religion and Society

3 hrs. (Gen. Ed. SF)

Major social scientific theories that explain social needs and functions served by religion.

RLS 317 Judaeo-Christian Ethics

3 hrs. (Gen. Ed. HP)

"New morality" and "situation ethics" compared to traditional Judaeo-Christian ethical principles.

RLS 325 Religion and Existentialism

3 hrs.

Philosophical and theological atmosphere of the 19th and 20th centuries: reading and analysis of existentialist writers.

RLS 330 The Human Condition

3 hrs.

Multidisciplinary examination of the limits and possibilities of human nature. Evolutionary biology, developmental psychology, philosophical ethics, and contemporary religious thought. Prerequisite: junior/senior standing.

RLS 331 Religions of the Eastern World

3 hrs. (Gen. Ed. NW)

Historical and cultural study of the religions of India, Southeast Asia, and China.

RLS 332 Religions of the World**3 hrs. (Gen. Ed. HP)**

Historical and literary study of Judaism, Christianity, and Islam.

RLS 338 China: Religion and Culture**3 hrs. (Gen. Ed. NW)**

Historical and cultural survey of Chinese religions. Development of Chinese religion and philosophy from ancient times until the present. Major traditions of Confucianism, Taoism, and Buddhism, as well as popular belief and culture.

RLS 340 Japan: Religion and Culture**3 hrs. (Gen. Ed. NW)**

Historical and cultural survey of religion in Japan, primarily Buddhism and Shinto. Folk religion, Chinese influences, and the New Religions.

RLS 344 Philosophy of Religion**3 hrs.**

Nature of religion; function and validity of religious concepts in the modern world. Cross listed as PHL 344. Prerequisite: 3 hours of religious studies or philosophy.

RLS 350, 351 Topics in Religious Studies**3 hrs. each**

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook.

RLS 387 Contemporary Trends in Religious Thought**3 hrs.**

Writings of present-day theologians. Emphasis on their influence on various aspects of modern thought and culture. Prerequisite: 3 hours of religious studies, or consent of instructor.

RLS 497, 498 Problems in Religious Studies**1-3 hrs. each**

Primarily for undergraduate RLS majors: comprehensive and integrated survey of the discipline at an advanced level; projects in special areas. Prerequisite: consent of instructor.

Department of Physics

FACULTY *Professors Craig (Chair), Early, Kenny, Stutz; Associate Professors Freim, Roos; Assistant Professor Kimberlin.*

The Department of Physics has designed its programs and courses in physics and astronomy with two principal objectives in mind. First, for citizens to lead productive lives it is important that individuals be scientifically and technologically literate. Therefore, the department offers physics courses that are accessible to all of the university's students. Several of our courses have been especially tailored for the nonscientist. Second, a technological society has need for teachers, scientists and engineers who have a broad and deep understanding of the basic physical laws. The department has programs and courses designed for students majoring in scientific and technical areas that will prepare them for professional careers or advanced study in these areas.

The Department of Physics offers introductory courses that cover the entire range of preparation in science and mathematics found at the university. Some require little or no science or mathematics preparation. Examples of such courses are PHY 100, PHY 123, and AST 300. Most of the other courses offered by the department require some prior exposure to science and mathematics. A few are available only to persons holding a bachelor's degree in physical science or engineering. Therefore, students wishing to study physics will find entry-level courses appropriate to their abilities and preparation.

The Department of Physics offers majors in the College of Liberal Arts and Sciences and the College of Engineering and Technology. There are four variations in the majors taken from the College of Liberal Arts and Sciences. These variations differ in the particular courses taken in the department, but differ more in the courses taken in other departments. The department also offers a minor. The specific program a student follows depends to a great extent on the particular interests of the student. Each student must work with a faculty advisor to plan an interesting course of study that satisfies the student's needs and all department, college, and university requirements.

Physics, Mathematics, and Computer Science and Information Systems Requirements for All Physics Majors

All students majoring in the various programs in physics are required to complete the following courses in physics: PHY 110, 199, 201, 202 or 303, 301, 305, 350, 463, 467, and 501. Students who receive a grade of B or better in PHY 107 and 108 may substitute these courses for PHY 110 and 201. In addition to these courses students must complete a combination of theory and laboratory courses in physics at the 300 to 500 level. Students must complete no fewer than 30 semester hours of physics courses. All physics majors are expected to present the results of their research experience while enrolled in PHY 463 at a departmental colloquium. Mathematics courses required by all physics majors are MTH 121, 122, 207, 223, and 224. The computer science course CS 106 or equivalent is also required.

Liberal Arts and Sciences Physics Major

The students who seek this major can generally be grouped into three categories.

- 1) Professional Physicist: these students intend to continue their formal education in physics by pursuing a graduate degree in physics.
- 2) Professional School Preparatory: these students are using the physics major as preparation for entering professional school programs such as medicine, engineering, or law.
- 3) Second Major: these students use the physics major to develop their problem solving skills and for increasing their understanding of the physical universe while choosing their primary major in areas such as computer science, chemistry, or mathematics.

Students in all three categories will complete the core courses as indicated above. In addition all of these students must complete two additional courses in physics selected from the following: PHY 306, 320, 345, 350, 361, 502, 568, and AST 300.

Students seeking to become professional physicists are strongly encouraged to complete all of these courses, and in addition MTH 510, CHM 161 or 162 and three additional mathematics courses chosen from the following: MTH 309, 325, 326, 403, 420, 421, 501, 502, and 514.

Secondary Education-Physics Teaching Major

Students preparing to teach physics at the high-school level must complete the requirements for a secondary teaching certificate to be certified in the state of Illinois.

These requirements are listed in this catalog under the Department of Teacher Education (Secondary Programs), and consist of a minimum of 34 semester hours in professional education courses. The courses used to fulfill the General Education requirement must also be chosen to fulfill certification requirements. Secondary Education-Physics Teaching majors are also required to take courses that will qualify them to be certified in a second teaching area which will require that from 6 to 15 semester hours be completed in the area chosen. Students must consult with advisors from both the Physics Department and the College of Education and Health Sciences. In addition to the courses required of all physics majors the students selecting this variation in the physics major must complete two courses from the following: PHY 306, 320, 345, 361, 501 and 568; AST 300.

Engineering Physics

The engineering physics major is offered through the College of Engineering and Technology. Details of this program are found in the College of Engineering and Technology section of this catalog. Engineering physics majors must meet all the requirements of the University and College of Engineering and Technology in addition to taking the required courses in physics and mathematics indicated above. Faculty advisors from both physics and engineering advise students who major in engineering physics.

Physics Minor

The physics minor consists of PHY 107 or 110; 108 or 201; 202 and three additional elective courses at the 300 level chosen to fit the student's special interests. Students may select from the following: AST 300; PHY 301, 305, 320, 345, 350 (two semester hours), 361 and 306.

Suggested Program for the LAS Physics Major

The schedule of courses shown below lists only the physics courses required by all LAS physics majors. Elective courses would then be chosen to fulfill the requirements for the particular variation chosen by the student. Some course requirements may be met through Advanced Placement tests, proficiency examinations, or transfer credit

Freshman Year

First Semester

Gen. Ed. Western Civilization	3
PHY 199 Physics Seminar	1
CHM 161 General Chemistry I	4
ENG 101 Composition	3
MTH 121 Calculus I	4
	<hr/> 15

Second Semester

PHY 110 University Physics I	4
Gen. Ed. Fine Arts	3
Gen. Ed. Social Forces	3
COM 103 Oral Communication Process	3
MTH 122 Calculus II	4
	<hr/> 17

Sophomore Year

First Semester

PHY 201 University Physics II	4
CS 106 Introduction to Programming and CS	3
Gen. Ed. Social Forces (Economics)	3
MTH 223 Calculus III	4
Gen. Ed. Human Values (Philosophy)	3
	<hr/> 17

Second Semester

PHY 202 Applied Quantum Physics or Elective	3
PHY 350 Applied Quantum Physics Lab	1
Gen. Ed. Non-Western Civilization	3
Elective	3
MTH 224 Elementary Differential Equations	4
MTH 207 Elementary Linear Algebra with Applications	3
	<hr/> 17

Junior Year

First Semester

PHY 305 Electricity and Magnetism	3
PHY 301 Classical Mechanics	3
English: 300-Level Junior Composition	3
Gen. Ed. Human Values (Literature)	3
Elective	3
	<hr/> 15

Second Semester

PHY 303 Quantum Physics or Elective	3
PHY 350 Applied Quantum Physics Lab	1
Physics Elective	3
Electives	9
	<hr/>
	16

Senior Year*First Semester*

PHY 501 Quantum Mechanics I	3
PHY 463 Special Problems in Physics	1
PHY 467 Statistical and Thermal Physics	3
Physics Elective	3
Electives	6
	<hr/>
	16

Second Semester

PHY 463 Special Problems in Physics	1
Physics Elective	6
Electives	9
	<hr/>
	16

Total Hours

129

Suggested Program for Secondary Education - Physics Teaching Major

A student preparing to teach physics at the high-school level should follow the sequence shown below. Students who plan to teach in states other than Illinois should be aware that some of the education courses in this sequence might not apply toward certification in those states.

A second teaching field is required. The student must consult an advisor for specific requirements for the second teaching field.

Freshman Year*First Semester*

PHY 110 University Physics I	4
PHY 199 Physics Seminar	1
MTH 121 Calculus I	4
ENG 101 English Composition	3
Gen Ed. (SF) PLS 105 Intro. to American Government ..	3
CHM 160 Gen. Chem. I or CHM 300	3
	<hr/>
	18

Second Semester

PHY 201 University Physics II	4
MTH 122 Calculus II	4
COM 103 Oral Communication Process	3
ETE 115 Schools and Schooling in American Society ...	3
ETE 116 Field Experience for ETE 115	1
Gen Ed. – Human Values (ENG 115 or 121)	3
	<hr/>
	18

Sophomore Year*First Semester*

PHY 202 Applied Quantum Physics	3
PHY 305 Applied Quantum Physics Laboratory	1
MTH 223 Calculus III	4
CS 106 Intro. to Programming and Computer Science ..	3
Gen. Ed. CIV 100 Western Civilization	3
ETE 100 Technology Applications	1
ETE 280 Exploring Diversity	3
	<hr/>
	18

Second Semester

PHY 320 Optics	3
PHY 350 Optics Laboratory	1
MTH 224 Elem. Differential Equations	4
Gen. Ed. Human Values (PLS 105, RLS 101, or RLS 200)	3
ETE 225 Human Development	3
BIO 121 Life Sci. I or BIO 300	3
FCS 203 or NUR 163, 220, 221, 263, or 376	3
	<hr/>
	18

Junior Year*First Semester*

PHY 305 Electricity and Magnetism	3
Second Teaching Area	3
English: 300-level Junior Composition	3
Gen. Ed. Social Forces (HIS 311 or 312)	3
ETE 370 General Secondary Methods I	3
ETE 342 Guiding Learners and Developing Classroom Communities	3
	<hr/>
	18

Second Semester

PHY 301 Classical Mechanics	3
PHY 306 Electromagnetic Waves	3
Second Teaching Area	3
Gen. Ed. Fine Arts	3
ETE 371 General Secondary Methods II	3
Gen. Ed. (SF) PSY 104	3
	<hr/>
	18

Summer

Gen. Ed. Non-Western Civilization	3
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Senior Year*First Semester*

PHY 501 Quantum Mechanics I	3
PHY 467 Statistical and Thermal Physics	3
Second Teaching Area	2
AST 300 Astronomy	3
ETE 374 Methods of Teaching Secondary Science	2
ETE 379 Novice Teaching in Secondary School	2
Gen Ed. (Humanities Phil.)	3
	<hr/>
	18

Second Semester

PHY 361 Electronics	3
PHY 463 Special Problems in Physics	2
ETE 499 Student Teaching in the Secondary Schools	10 or 13
	<hr/>
	15 or 18

Total Hours

144-147

Course Descriptions

Astronomy

AST 300 Astronomy: Our Glimpse of the Cosmos
3 hrs. (Gen. Ed. TS)

Various scientific views of the cosmos; how modern astronomy has enlightened and broadened these views. Relationships between man, technology, and the universe through scientific knowledge of planets, stars, galaxies, and the cosmos will be investigated. Experimental discoveries in astronomy are examined, analyzed, and discussed. Prerequisites: junior standing; a basic science course.

AST 310 Astronomy and Astrophysics
3 hrs.

Scientific and contemporary study of broad range of astronomy and astrophysical topics: overview of the universe, superclusters of galaxies, stars, planetary systems, and subsystems of objects. Analytical presentations of special topics: stellar evolution, quasi-stellar objects, black holes, and cosmological concepts. Scientific-technical elective for science and engineering majors. Prerequisites: junior standing; one year of analytical science.

Physics

PHY 100 Fundamental Physics Concepts
4 hrs. (Gen. Ed. FS)

Algebra-based course for students with minimal physics background. Topics introduced include Newton's laws of motion, electromagnetism, thermodynamics, optics, and atomic theory. Emphasis is on basic physical principles. Includes laboratory.

PHY 107 General Physics I
4 hrs. (Gen. Ed. FS)

Algebra- and trigonometry-based introductory physics course which covers Newtonian mechanics and conservation laws; fluid statics and dynamics; vibrations, waves, and sound; laws of thermodynamics. Includes laboratory. Prerequisite: high school physics or PHY 100.

PHY 108 General Physics II
4 hrs. (Gen. Ed. FS)

Continuation of PHY 107. Electric and magnetic fields; electromagnetic induction; electromagnetic waves; geometrical and physical optics; the special theory of relativity; quantum theory, atomic physics, and nuclear and particle physics. Includes laboratory. Prerequisites: PHY 107; MTH 115.

PHY 110 University Physics I
4 hrs. (Gen. Ed. FS)

Calculus-based introductory physics course for scientists and engineers that covers Newton's laws of motion; conservation laws for momentum, energy, and angular momentum; fluid statics and dynamics; laws of thermodynamics. Includes laboratory. Prerequisites: high school physics or PHY 100; MTH 115 or 121.

PHY 123 Physical Science, Basis for a Technical Society
3 hrs. (Gen. Ed. FS)

A course for non-science students with minimal preparation in mathematics and science. Emphasizes basic concepts from the physical sciences and their significance for a scientifically literate society. Topics in physics, chemistry, computing, energy, and astronomy will be covered from an applications perspective. Students with prior college physics courses may not register for this course.

PHY 199 Physics Seminar for New Physics Majors
1 hr.

Orientation for students interested in a physics career. Prerequisites: freshman or sophomore standing; physics major or minor.

PHY 201 University Physics II
4 hrs. (Gen. Ed. FS)

Continuation of PHY 110 covering electric fields and DC circuits; magnetic fields, electromagnetic induction and AC circuits; oscillations and waves; Maxwell's equations; and geometrical and physical optics. Includes laboratory. Prerequisites: PHY 107 and permission of instructor or PHY 110. Corequisite: MTH 116 or 122.

PHY 202 Applied Quantum Physics
3 hrs. (Gen. Ed. FS)

Introduction to relativity and relativistic mechanics; quantum theory with applications to atomic and molecular physics; condensed matter physics; nuclear and particle physics. Prerequisite: PHY 201. Corequisite: MTH 223. Students who desire a lab experience should also enroll in the appropriate section of PHY 350.

PHY 301 Classical Mechanics
3 hrs.

Particle kinematics; Newtonian mechanics; classical gravitation; Lagrangian and Hamiltonian dynamics; linear oscillations; nonlinear oscillations; central force and planetary motion; collisions between particles; motion in noninertial systems. Prerequisites: PHY 201; MTH 224.

PHY 303 Quantum Physics
3 hrs.

Foundations of quantum theory: deBroglie's postulate, Bohr model of the atom, and the Schrodinger equation; applications of quantum theory to atoms, solids, nuclei, and particles; relativity. Prerequisite: PHY 201. Corequisite: the appropriate section of PHY 350.

PHY 305 Electricity and Magnetism
3 hrs.

Introduction to vector calculus; electrostatics in vacuum and dielectrics including boundary value problems; method of images, steady currents, and magnetostatics in vacuum; magnetic materials. Prerequisites: PHY 201; MTH 224.

PHY 306 Electromagnetic Waves
3 hrs.

Plane electromagnetic waves in vacuum, polarizable materials, and conductors; reflection and refraction, guided waves, and radiation of electromagnetic waves. Prerequisite: PHY 305.

PHY 320 Optics
3 hrs.

Geometrical optics: matrix methods, mirrors, lenses, fibers, thick optics, optical instruments; physical optics including interference, diffraction, polarization, lasers, and holography. Prerequisites: PHY 202 or equivalent. Corequisite for all physics majors or minors: the appropriate section of PHY 350.

PHY 330 Nuclear Physics
3 hrs.

Introduction to physics of the nucleus through experiment and study of experimental techniques. Nuclear decays, isotopes, isotopic masses, radioactive transformations and transmutations, and nature of alpha, beta, and gamma decay. Lecture and laboratory; possible field trips. Prerequisite: PHY 202 or consent of instructor.

PHY 345 Radiation Biology**3 hrs.**

Role of ionizing radiation in the biological and medical sciences: production, detection, and measurement of radiation, physically and biologically; interaction of radiation with matter at molecular, cellular, whole body, and whole population levels; applications of radiation as a useful and experimental tool. Cross listed as BIO 345. Prerequisites: PHY 108; MTH 115 or 121; C or better in BIO 124.

PHY 346 Biochemical Physics**3 hrs.**

Current technology of the numerous applications of physical methods of biotechnology and biochemistry. X-ray studies, mass transport studies, bonding studies, and others. Physics of a few current technologies in depth. Prerequisites: PHY 107, 108; BIO 121, 122; CHM 250; MTH 115, 116.

PHY 350 Advanced Physics Experiments**1-2 hrs.**

Laboratory: design of experiments and techniques of measurement, particularly electronic instrumentation, in investigating fundamental relationships in all areas of physics. One three-hour laboratory session per week per credit hour required. May be repeated for maximum of 4 hrs. credit. Sections of this course may provide a lab component for PHY 202, 303, and 320. Prerequisite: consent of department chair.

PHY 360 Acoustics**3 hrs.**

Fundamental principles of acoustic waves. Vibrating systems, transmission of sound waves, resonators and filters, acoustical properties of musical instruments, audio systems, rooms and enclosures, and other applications. Theory of vibrating strings, bars, and plates as acoustical sources. Demonstrations. Prerequisites: PHY 201 and MTH 223; or consent of instructor.

PHY 361 Electronics**3 hrs.**

Electronic principles with application to measurement devices utilized in science research. Self-paced instruction and laboratory work. Prerequisites: PHY 108 or 201; MTH 116 or 122.

PHY 402 Advanced Classical Mechanics**3 hrs.**

A theoretical study of coupled oscillations, dynamics of rigid bodies, continuous systems, and advanced relativistic mechanics. Hamilton-Jacobi theory introduced as a precursor to quantum mechanics. Prerequisite: PHY 301.

PHY 463 Special Problems in Physics**1-3 hrs.**

Qualified students work on an individually assigned problem and prepare oral and written reports on the problem solution. Approved for off-campus programs when required. May be repeated for a maximum of 6 hrs. credit. Prerequisites: physics preparation sufficient for the problem; consent of instructor and Department Chair.

PHY 467 Statistical and Thermal Physics**3 hrs.**

Rigorous theoretical treatment of classical thermodynamics with applications of the first and second laws, and an introduction to statistical mechanics, including quantum statistics, canonical and grand

canonical ensembles, general properties of the partition function, applications of statistical mechanics to fluid and solid systems, and the Ising model. Prerequisites: PHY 202 or 303, 301; knowledge of a programming language; consent of instructor.

PHY 501 Quantum Mechanics I**3 hrs.**

Inadequacies of classical physics when applied to problems in atomic and nuclear physics. Development of mathematical formalism used in basic quantum theory. Applications to simple models of physical systems. Prerequisites: PHY 202, 301, 306; consent of instructor. MTH 207 recommended.

PHY 502 Quantum Mechanics II**3 hrs.**

Mathematical formalism of quantum mechanics. Applications to problems of electron spin and many-particle systems. Development of approximation techniques with applications to complex physical systems. Prerequisite: PHY 501.

PHY 510 Experimental Physics Topics**3 hrs.**

Discussion of applications of physics principles; detailed evaluations of recent experimental physics. Emphasis on laboratory measurements, including laboratory practice at local and regional research sites. Prerequisites: any advanced undergraduate course with laboratory; consent of instructor.

PHY 539 Topics in Theoretical Physics**3 hrs.**

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. Prerequisites: PHY 301, 305, 501; or consent of instructor.

PHY 541 Physics for Nurse Anesthetists**2 hrs.**

Numerical and graphical analysis of data; basic mechanics including Newton's laws and gas laws; hydrostatics and hydrodynamics; energy conservation principles; thermal physics; electricity and magnetism; and solubility and transport processes. Only students in the Nurse Administered Anesthesia Program may register.

PHY 545 Biophysics**3 hrs.**

Applications of physics principles and methods to investigation of biological systems. Emphasis on physical environmental effects on biological systems. Cross listed as BIO 545. Prerequisites: PHY 108 or 201; senior standing; or consent of instructor. PHY 345 recommended.

PHY 555 Independent Readings**1-3 hrs.**

Individual assignments of relevant topics in physics or astronomy. Prerequisites: senior or graduate standing; background appropriate to the study; consent of instructor.

PHY 568 Condensed Matter Physics**3 hrs.**

Introduction to condensed matter physics for students of physics, materials science, and engineering. Structure of crystals; binding energy of solids; thermal properties; semiconductors; superconductivity. Prerequisites: PHY 501, MTH 224; consent of instructor.

Department of Political Science

FACULTY Professors *Aspin (Chair), Gill, Hall, Lermack;*
Associate Professors Curtis, Dannehl, Gobeyn;
Distinguished Adjunct Professor Michel.

The undergraduate major is designed to maximize students' capacity to analyze and interpret the significance and dynamics of political events and governmental processes be they at the global level or at the local community level. Students build an excellent foundation for numerous careers by mastering the accumulated basic general knowledge of political science and developing the related analytical skills. Political science majors most frequently pursue careers in law, business, governmental service, private political organizations, journalism, and academic political science. Many students with yet other career aspirations major in political science so they can understand not only how government affects them, but also how they can affect government.

Major in Political Science

A major in political science consists of a minimum of ten political science courses and satisfaction of the department's requirements for either the B.A. or B.S. degree.

Political Science Course Requirements

The political science requirements are: (1) A core of four courses to provide a grounding in the traditional sub-fields of the discipline: PLS 105, American politics; PLS 205, comparative politics; PLS 207, political theory; and PLS 208, international relations; (2) PLS 209, scope and methods of political science; (3) two upper-level (300-400) courses in each of two sub-fields to permit concentration and to acquire a depth of understanding; and (4) a senior seminar (PLS 491, 492, 493, or 494) designed to be a culminating experience.

Sub-field course work is distributed as follows:

American politics:	PLS 105, 202, 301, 310, 311, 360, 419, 420, 421, 422, 440, 459, 460, 494
Comparative politics:	PLS 205, 303, 304, 305, 306, 491
International relations:	PLS 208, 302, 317, 318, 319, 492
Political theory:	PLS 207, 300, 307, 308, 407, 493

Each student's prospectus, which must be approved by his/her advisor, will outline the courses to be taken to satisfy the degree requirements. Individual interests and special capabilities of the student, as well as the scope of the discipline, are considered in preparing the prospectus. Courses initially proposed in the prospectus may be revised upon approval of the advisor. The Political Science Department maintains a policy of close supervision of its majors and urges them to consult regularly with their faculty advisor.

In planning their academic program, students intending to major in political science are encouraged to complete the core courses (PLS 105, 205, 207, 208) as early as practicable. Students should complete PLS 209 prior to enrolling in a senior seminar.

Bachelor of Arts Degree Requirements

Two years or its equivalent of college-level foreign language. (This means that a student must complete 202 or a 300-level language course. Whenever that has been completed, the requirement has been met.)

Bachelor of Science Degree Requirements

Students must complete four courses:

Required: (three courses)

- (1) Any course in mathematics (except MTH 100)
- (2) Statistics (MTH 111 or PSY 205 or QM 262)
- (3) Computer Science (CIS 102, 203; CS 104, 106, 121, or 206)

Elective: (choose one course from among the following):
BMA 272; CIS 102, 203; CS 104, 106, 121, 206; ECO 325, 332, 333, 319; MTG 341; MTH 115 or above; QM 263; PSY 306

Minor in Political Science

The minor is to provide students with a flexible, coherent, and guided study in the discipline of political science as it relates to their specific academic major or personal interests and needs. The minor requires a minimum of 15 hours in political science, at least 9 hours of which must be at the junior-senior level.

All minors must take PLS 105, PLS 209, and a senior seminar (PLS 491, 492, 493, or 494). In addition, the student must take 6 hours of junior-senior level courses representing a coherent program of study and meeting the approval of a political science faculty advisor. It is the role of the student's faculty advisor to help work out a specific program coinciding with the student's academic major, interests, and needs.

Some suggested programs of study:

Pre-Law: 105, 209, 360, 419, 459, 460, 494.

Public Management: 105, 209, 419, 420, 421, 422, 494.

Communications and Politics: 105, 209, 301, 310, 360, 419, 494.

Behavioral Politics: 105, 209, 301, 310, 311, 360, 422, 494.

International and Comparative Politics: 105, 209, 302, 303, 304, 305, 317, 318, 319, 491 or 492.

Urban Politics: 105, 209, 419, 420, 421, 422, 494.

Political Philosophy: 105, 209, 307, 308, 407, 493.

Off-Campus Programs

Political science majors are urged to consider the many off-campus programs available. Bradley annually sends students to the various Washington Semester programs (through American University in Washington, D.C.). The University also participates in many programs of study

abroad. Students are also urged to consider participating in either the department's internship program or in the University's Cooperative Education/Internship Program (see the Cooperative Education/Internship section of this catalog). Bradley students are eligible to do internships through the Washington Center for Internships. The Center seeks to utilize the resources of the nation's capital to provide participatory learning experiences in order to enhance students' academic, civic, and professional development. All of these programs provide students with practical experience while they are pursuing academic goals.

Pre-Law

A statement on pre-law curricula is given at the beginning of the College of Liberal Arts and Sciences section of this catalog.

Course Descriptions

PLS 105 Introduction to American Government 3 hrs. (Gen. Ed. SF)

The American political system: constitutional principles, political processes, and governmental policy making.

PLS 202 State and Local Government 3 hrs.

Political processes through which rapidly growing problems of the state and local governments are identified, fought over, and resolved.

PLS 205 Introduction to Comparative Politics 3 hrs. (Gen. Ed. SF)

Comparative analysis of selected political systems. Prerequisite: PLS 105 or consent of instructor.

PLS 207 Introduction to Political Thought 3 hrs. (Gen. Ed. HP)

Recurrent concepts or issues in political thought and ways they have been treated by classic and contemporary writers. Obligation and the social contract, liberty, justice and equality, property, representation.

PLS 208 Fundamentals of International Relations 3 hrs. (Gen. Ed. SF)

Fundamental issues and problems that have contributed to structuring current patterns of international relations. Prerequisite: PLS 105 or consent of instructor.

PLS 209 Scope and Methods of Political Science 3 hrs.

Introduction to political inquiry; research methods necessary for in-depth research. Prerequisite: PLS 105.

PLS 290 Participation in Mock Trial 1 hr.

Research and performance laboratory for students who participate in the American Mock Trial Association competition. May be repeated for a maximum of 4 hours credit. Cross listed as COM 290. Prerequisite: consent of instructor.

PLS 300 Topics in Political Thought 3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum 6 hours credit. Prerequisite: PLS 207.

PLS 301 Topics in American Politics 3 hrs.

Analysis of research, concepts, institutions, theories, and literature. Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit. Prerequisite: PLS 105.

PLS 302 Topics in International Relations 3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit. Prerequisite: 3 hours of political science.

PLS 303 Dictatorship and Democratization 3 hrs.

Introduction to the politics of dictatorship and democratic transition. Political processes and institutions in authoritarian political systems; explanations and case studies of contemporary democratization efforts. Prerequisite: PLS 205.

PLS 304 Governments of West Europe 3 hrs.

Governmental structures, public policies, policy making processes, ideological foundations, and dynamics of political and economic change in the parliamentary democracies of West Europe; emphasis on Britain, France, Germany, the Netherlands, and Sweden. Prerequisite: PLS 205.

PLS 305 Topics in Comparative Government 3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit. Prerequisite: PLS 205.

PLS 306 Comparative Public Policy 3 hrs.

A comparative introduction to the social and economic policies of such advanced industrial democracies as Japan, Britain, France, Germany, Sweden, the Netherlands, and the United States. Prerequisite: PLS 205.

PLS 307 Classical Political Philosophy 3 hrs. (Gen. Ed. HP)

Systematic political thought in Western philosophy during ancient and medieval times. Cross listed as PHL 307. Prerequisite: junior standing.

PLS 308 Modern Political Philosophy 3 hrs. (Gen. Ed. HP)

From the beginning of the modern period through the 19th century. Cross listed as PHL 308. Prerequisite: junior standing.

PLS 310 Political Behavior 3 hrs.

Formation of opinion, perception of political events, voting behavior, and political participation; significance for democratic government. Prerequisite: PLS 105.

PLS 311 Political Parties: Electorate and Politics 3 hrs.

Organization and activities of modern political parties, forces shaping partisan organization and activities, and development of public policy. Emphasis on party politics in contemporary America, with attention to American political history and comparative party systems. Prerequisite: PLS 105.

PLS 317 International Law**3 hrs.**

Nature, sources, and development of international law as it has been invoked in diplomatic practices, international adjudications, and national courts. Prerequisite: PLS 208 or consent of instructor.

PLS 318 International Organization**3 hrs.**

The analysis of major international problems of a character requiring the concerted efforts of international organization in their solutions. Prerequisite: PLS 208 or consent of instructor.

PLS 319 International Political Economy of the Industrialized World**3 hrs.**

Overview of theories and issues in international political economy affecting relations among advanced industrialized countries. Development of the international political economy; institutions for its management; emerging issues and future prospects. Prerequisites: ECO 222; PLS 208; or consent of instructor.

PLS 360 Judicial Politics**3 hrs. (Gen. Ed. SF)**

Political behavior of American trial courts and variables connecting them to the larger political system. Examples from criminal procedure and civil justice cases. Emphasis on police and prosecutorial discretion; recruitment of judges; juries; and social function of judgments and punishments. Prerequisite: PLS 105 or consent of instructor.

PLS 390 Participation in Mock Trial**1 hr.**

Research and performance laboratory for junior and senior students who participate in the American Mock Trial Association competition. May be repeated for a maximum of 4 hours credit. Cross listed as COM 390. Prerequisites: consent of the instructor; junior/senior standing.

PLS 407 American Political Philosophy**3 hrs.**

Systematic political thought in American philosophy from colonial times to the present. Cross listed as PHL 407. Prerequisite: PLS/PHL 307 or 308, or consent of instructor.

PLS 419 Introduction to Public Administration**3 hrs.**

Public administration in a democratic setting: history of American PA, organization theory, public personnel, budgeting, intergovernmental relations, decision making and policy analysis, the regulatory process, and ethics in government. Prerequisite: PLS 105 or 202.

PLS 420 Public Management**3 hrs.**

Basic issues and techniques of public personnel administration: the distinctive setting in which public managers function, theories of motivation in the work place, and the tasks commonly faced by human resource managers in the public sector. Prerequisite: junior standing.

PLS 421 The Politics of Regulation**3 hrs.**

An examination of the modern administrative state through an in-depth study of the federal regulatory process; administrative law and procedure; the politics

involved in the development and reform of the federal regulatory bureaucracy. Prerequisites: PLS 105; junior standing.

PLS 422 Urban Politics**3 hrs.**

Study of selected problems in metropolitan areas: political forms, ethnic politics, education, housing, poverty, corrections; theories dealing with these problems. Prerequisites: PLS 105; junior standing.

PLS 440 Public Policy Analysis**3 hrs.**

In-depth study of the policy making process, including agenda setting, policy formation, implementation, evaluation, and change. Prerequisites: PLS 105, 209; or consent of instructor.

PLS 459 Constitutional Law**3 hrs.**

Position of the Supreme Court in American system of government as both symbol and instrument of power. Case method. Prerequisite: PLS 105; junior standing.

PLS 460 Constitutional Law**3 hrs.**

Supreme Court as one of the policy making agencies of the federal government. Relationship between citizen and government in civil, property, and political rights. Prerequisite: PLS 105; junior standing.

PLS 480 Internship in Political Science**1-6 hrs.**

Students work with selected political agencies, to study practical political problems from the perspective of the discipline. Course may be repeated for a maximum of six credit hours. Pass/Fail. Prerequisite: consent of the instructor.

PLS 485 Research**1-6 hrs.**

Individual research for qualified students. May be repeated for a maximum of 6 hours credit. Prerequisites: 3.2 average in student's major; junior/senior standing; consent of instructor.

PLS 491 Seminar in Comparative Politics**3 hrs.****PLS 492 Seminar in International Relations****3 hrs.****PLS 493 Seminar in Political Theory****3 hrs.****PLS 494 Seminar in American Politics****3 hrs.****PLS 583, 584 Reading in Political Science****1-3 hrs. each semester**

Individual in-depth work on a subject approved and supervised by a PLS faculty member. For highly qualified students. Prerequisites: senior standing; political science major; consent of instructor.

Department of Psychology

FACULTY *Professors Etaugh, Stalling; Associate Professors Huffcutt, D.E. Montgomery, Pilcher, Schweigert (Chair); Assistant Professors Files, D. A. Montgomery, Roberts, Schmitt.*

Psychology may be defined as the scientific study of behavior. Our program emphasizes both knowledge of the specific subject areas of psychology and the way of thinking that characterizes the field. The undergraduate degree in psychology provides the foundation for a variety of industrial or human service positions and also serves as preparation for advanced study leading to master's, doctoral, or professional degrees.

Facilities for students include a laboratory for the study of animal behavior and a Child Study Center for research on children under four years of age. Faculty research areas include child development, eating disorders, gender differences, sleep, personnel selection, health, cognitive psychology, and behavior therapy. Undergraduate students frequently work with faculty on research projects; internships for course credit are also available at local mental health facilities.

Psychology Major

To major in psychology the student must complete a minimum of 34 hours that will include:

1. PSY 103 or PSY 104 (with a grade of C or better).
2. PSY 205 (with a grade of C or better).
3. PSY 306.
4. Four of the following core academic courses:
PSY 302, 304, 307, 308, 403, 404, 439.
5. BIO 121, 122, or 200 (3 semester hours).
6. Nine additional semester hours (three courses) from any of the psychology course offerings (including those listed under item 4 above).
7. Only six hours of individual study courses (PSY 380, 481, 491) will count toward the major.

Psychology Minor

To minor in psychology the student must complete a minimum of 18 hours which will include:

1. PSY 103 or PSY 104 (with a grade of C or better);
2. One from the following core academic courses:
PSY 302, 304, 307, 308, 403, 404, 439;
3. One from the following applied subject areas:
PSY 333, 310, 445, or 532.
4. Three other courses (nine semester hours) in psychology at or above the 200 level except that: (a) either PSY 206 or 207, but not both, will count toward the minor; and (b) individual study courses (PSY 380, 481, 491) will not count toward the minor.

Secondary Education-Psychology

Those students wishing certification in Secondary Education must take 32 semester hours in psychology. In addition, a second teaching field is required. Students must consult with an advisor in the department of their second teaching field. Students must also see an education advisor regarding education, certification, and candidacy requirements.

Course Descriptions

PSY 103 Principles of Psychology 3 hrs.

Cognitive, physiological and environmental factors that influence human behavior.

PSY 104 Principles of Psychology: Social Forces and Individual Behavior 3 hrs. (Gen. Ed. SF)

Impact of social forces and institutions on individual behavior; interaction between individual and social environment.

PSY 200 Evolutionary Psychology 3 hrs.

Fossil evidence for human evolution; impact of evolutionary history on the development of human behavior; how evolutionary theory can be applied to understanding human behavior in contemporary society. Prerequisites: PSY 103 or 104; or consent of instructor.

PSY 205 Quantitative Methods 3 hrs.

Introduction to applied statistical analysis: data reduction and representation; frequency distributions and their measures; probability; sampling theory; tests of significance. Not open to non-majors with credit in QM 262, QM 263, or MTH 111. Prerequisite: 3 hours of college mathematics or consent of instructor.

PSY 206 Behavior Analysis in Perspective 3 hrs.

Principles of operant psychology applied to human behavior, with psychoanalysis and other systems presented for contrast and historical context. Prerequisites: PSY 103 or 104.

PSY 207 Analysis of Behavior 4 hrs.

Environmental factors applied to specification and understanding of behavior. Laboratory work with animals. Prerequisite: PSY 103 or 104.

PSY 245 Personality and Adjustment 3 hrs.

Human adjustment and factors in mental health. Prerequisite: PSY 103 or 104.

PSY 300 Psychology of Women 3 hrs.

Women and their behavior: influence of psychological, social, and biological factors. Prerequisite: PSY 103 or 104.

PSY 302 Psychology of Learning 3 hrs.

Variables and conditions that affect the learning process; theories of learning. Prerequisite: PSY 103 or 104.

PSY 304 Developmental Psychology**3 hrs.**

Mental, physical, and social development from birth to adulthood. Prerequisite: PSY 103 or 104.

PSY 306 Experimental Psychology**4 hrs.**

Basic principles of research design and interpretation; emphasis on experimental method. Laboratory work in human learning. Prerequisite: PSY 205 or consent of instructor.

PSY 307 Cognitive Psychology**3 hrs.**

Attention, memory, language use, problem solving, and artificial intelligence. Prerequisite: PSY 103 or 104.

PSY 308 Social Psychology**3 hrs.**

Theories, research finding, and methods of social psychology. Topics include person perception, attitude change, interpersonal attraction, aggression, competition, group processes, and leadership. Prerequisite: PSY 103 or 104 or equivalent.

PSY 310 Industrial and Organizational Psychology**3 hrs.**

Job analysis, psychological testing, interviewing, performance appraisal, employment law, leadership, motivation, training, job satisfaction, organizational theory, and research methods. Prerequisites: PSY 103 or 104; PSY 205 or equivalent.

PSY 314 Adult Development and Aging**3 hrs.**

Introduction to conceptual issues, research methods, and available data in adult development and aging. Prerequisite: PSY 103 or 104.

PSY 320 Human Factors Psychology**3 hrs.**

Introduction to psychological concepts and methods relevant to human-machine system design. Emphasis on issues related to human sensory, perceptual, cognitive, and motor performance. Survey of current areas of application. Prerequisites: PSY 103 or 104; PSY 205 or equivalent.

PSY 333 Community-Clinical Psychology**3 hrs.**

Psychotherapy (systems, process, and outcome evaluation), psychological assessment (intelligence, personality, and behavioral), and community psychology (prevention, community organization), excluding abnormal behavior. Prerequisite: 9 hours of psychology or consent of instructor.

PSY 334 Motivation and Emotion**3 hrs.**

Current theory and research in motivation and emotion. Prerequisite: 6 hours of psychology.

PSY 380 Undergraduate Practicum**1-3 hrs.**

Supervised work in applied settings such as mental health clinics, preschool classrooms, and counseling centers; qualified students may assist in psychology laboratory courses. May be repeated for maximum of 6 hrs. credit. Prerequisites for each section: 01, Child Study Center, PSY 304; 02, Classroom Assistance, PSY 206 or 207; 03, Community Agency, junior standing in psychology and consent of instructor.

PSY 402 Human Sexuality**3 hrs.**

Current knowledge concerning human sexuality. Prerequisite: 6 hours of psychology or consent of instructor.

PSY 403 Physiological Psychology**3 hrs.**

Physiological bases of behavior; emphasis on the neural structure and functional concomitants of receptor and effector processes, motivation, emotion, and learning. Prerequisites: 6 hrs. of psychology; 3 hrs. of biology or consent of instructor.

PSY 404 Sensation and Perception**3 hrs.**

Physiology of the senses; processes by which sensory stimulation produces perceptual experiences. Prerequisites: 6 hours of psychology; 3 hours of biology; or consent of instructor.

PSY 405 Issues in Applied Psychology**1-3 hrs.**

Study of special issues related to applied psychology, which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 6 hours credit. Prerequisite: 9 hrs. of psychology.

PSY 406 Issues in Theoretical Psychology**1-3 hrs.**

Study of special issues related to theoretical and experimental psychology, which may vary each time the course is offered. Topic stated in current Academic Handbook. May be repeated under different topics for a maximum of 6 hours of credit. Prerequisites: 9 hours of psychology or consent of the instructor.

PSY 410 Health Psychology**3 hrs.**

Biological, psychological, and social interactions that influence an individual's state of health and illness. Stress, pain, cardiovascular risk, cancer, chronic illness, addictive behaviors. Prerequisites: 6 hours of psychology and 3 hours of biology.

PSY 411 Tests and Measurement**3 hrs.**

Types of psychological tests, psychometric properties of tests, development and analysis of test items. Prerequisites: PSY 205 or equivalent; junior/senior standing.

PSY 415 Intermediate Statistics for Psychology**3 hrs.**

Conceptual foundations of hypothesis testing, introduction to meta-analysis and its procedures, exploration of multiple regression/correlation and related applications such as factor analysis. Prerequisite: PSY 205 or MTH 111 or QM 262 or equivalent.

PSY 439 History of Psychology**3 hrs.**

Conceptual origins, problems and controversies, and ideas that gave rise to modern psychology. Prerequisite: 15 hours of psychology or consent of instructor.

PSY 445 Abnormal Psychology**3 hrs.**

Psychological aspects of behavioral disorders: psychoses, neuroses, mental deficiencies, and other conditions. Prerequisite: 6 hrs. of psychology or consent of instructor.

PSY 481 Reading**1-3 hrs.**

Directed reading by qualified students, with faculty guidance. May be repeated for a maximum of 6 hrs. credit. Prerequisite: consent of instructor.

PSY 491 Research**1-3 hrs.**

Directed research by qualified students, with faculty guidance. May be repeated for a maximum of 6 hrs. credit. Prerequisite: consent of instructor.

PSY 532 Personality Theories and Theorists**3 hrs.**

Comprehensive survey of views on structure and function of personality, contemporary research, and methods of assessment. Prerequisite: PSY 445 or consent of instructor.

PSY 536 Statistical Methods for Research**3 hrs.**

Advanced statistical techniques for psychological research, including univariate and multivariate procedures. Prerequisite: introductory statistics.

Russian and East European Studies Program

COORDINATING COMMITTEE *Bukowski (International Studies) Chair; Gorin (Sociology); Rubash (Finance and Quantitative Methods); Dannehl (Political Science).*

The goal of the Russian and East European studies minor is to provide students with an understanding of the political, social, economic, and cultural forces that characterize this region. The minor requires a broad, cross-disciplinary approach with the intention of imparting to the student an appreciation of the unique qualities of the region. This minor is not designed to encourage concentration on a single country or culture, but it may prepare the student for such an endeavor in future studies.

A key requirement of this minor is the completion of a semester of Bradley-directed study abroad in either Russia or the Central or East European region. Bradley offers various programs to these destinations. The student should see the Study Abroad Office, 325 Caterpillar Global Communications Center, for a current listing. The study abroad requirement is a key element of the minor due to the special cultural, social, and linguistic character of the region. A firm understanding of the region is broadly enhanced by firsthand experience.

Minor in Russian and East European Studies

Curriculum and Requirements

Students are required to complete an appropriate program of study abroad experience approved by the faculty coordinating committee and designated as "Bradley directed" by the Study Abroad Office.

Prior to study abroad, students must meet the requirements of the selected study abroad program. These requirements vary from program to program and over time. The student should inquire at the Study Abroad Office for specific requirements.

To participate, a student must have completed a minimum of six semester hours of approved minor courses (see list) prior to studying abroad.

Students shall choose courses (see list) and study abroad, in consultation with an advisor for this minor, that deal with history, politics, arts, etc. specific to the culture of the societies of Eastern Europe and Russia.

At least 18 semester hours are required for this minor, including a minimum of 9 junior-senior hours to be completed in approved study abroad courses that deal with the social, economic, and cultural aspects of the area, and a minimum of 6 hours to be completed in residence at Bradley. With the exception of language courses, all courses taken in any of the designated study abroad programs will transfer back to Bradley at the junior-senior level. The transfer of all study abroad credits is governed by Bradley study abroad guidelines.

Course hours toward the minor can be taken from the following approved list:

ECO 345 Comparative Economic Systems
 HIS 103 Non-Western Civilizations: Russian History
 HIS Russian Revolutions
 HIS 338 Russia Since 1917
 IS 331 European Nations in International Affairs
 IS 353 Russian Foreign Policy
 IS 355 Imperial Russia
 IS 359 Russo-Chinese Relations
 IS 431 East European Systems

Social Informatics Program

FACULTY COORDINATING COMMITTEE *Salamini (Sociology) Chair; Nikolopoulos (Computer Science and Information Systems); Kasch (Communication).*

The departments of communication, computer science and information systems, and sociology offer an interdisciplinary minor in social informatics. This minor introduces students to the use of the Internet and the World Wide Web as a tool of research. It systematically analyzes the social aspects of computerization, including the roles of information technology in social and organizational change, the uses of information technologies in social contexts, and the ways that the social organization of information technologies is influenced by social forces and social practices.

The social informatics minor is designed with the following objectives:

1. to provide students with the conceptual tools and strategies to critically analyze the new technologies and the impact of computerization on society, human interaction, and the human psyche;
2. to teach students how to utilize the new technologies for academic study and research as well as how to format new ideas and research projects electronically in a textual, hypertextual, and multimedia format;
3. to involve students individually or on a team in creative projects that use the World Wide Web.

Requirements

Students electing to minor in social informatics will take 18 hours of coursework in the departments of computer science and information systems, communication, and sociology, as follows:

A. Core courses 9 hrs.
(choose three)

COM 399 Communication in Computer-mediated Environments
 CIS 300 Computers and Society
 SOC 421 The Culture of Cyberspace
 SOC 325 Science, Technology and Society

B. Electives 3 hrs.
(choose one)

MM 213 Basic Multimedia Authoring
 CS 343 Data Communication and Communication Networks
 CS 500 JAVA Programming and Web Design

C. Individual Projects 6 hrs.
(6 hours)

All students electing to minor in social informatics are required to participate in individual projects or collaborative team projects by enrolling in two directed study or independent study courses (three hours each) offered by the three departments and approved by members of the coordinating committee.

Social Studies – Secondary Education

FACULTY COORDINATING COMMITTEE *Wojcikewych (Economics), Guzman (History), Aspin (Political Science), Salamini (Sociology).*

The major in social studies – secondary education is an interdepartmental program of the faculties of economics, history, political science, and sociology with the cooperation of the Department of Teacher Education.

Successful completion of this program will allow graduates to teach high school economics, United States history, world history, civics or political science, and sociology.

In addition to University requirements, College of Liberal Arts and Sciences requirements, College of Education and Health Sciences requirements, and State of Illinois teacher certification requirements, students must complete 45 semester hours of social studies as described below.

Economics Requirements

ECO 100 Introduction to Economics or

- ECO 221 Principles of Microeconomics 3 hrs.
- ECO 222 Principles of Macroeconomics 3 hrs.
- Economics Elective 3 hrs.
- Select from ECO 310, 313, 325, 345, 351, 391, 444 or other course approved by advisor.

United States History Requirements

- HIS 203 United States History to 1877 3 hrs.
- HIS 204 United States History Since 1877 3 hrs.
- History Elective 3 hrs.
- Select from HIS 300 to 308

World History Requirements

- HIS 104 Non-Western Civilization: The Middle East Since Muhammad **or**
- HIS 105 Non-Western Civilization: Latin America **or**
- HIS 107 Modern Japan 3 hrs.
- History Electives 6 hrs.
- Select two from HIS 320 to 340, 342, 375, 385

Political Science Requirements

- PLS 105 Introduction to American Government 3 hrs.
- Political Science Electives 6 hrs.
- Select two from PLS 202, 301, 310, 311, 360, 419, 422, 440, 459, 460, 494

Sociology Requirements

- SOC 100 The Sociological Perspective 3 hrs.
- Sociology Electives 6 hrs.
- Select two from SOC 211, 310 to 314, 332, 341, 342
- Note: Social work courses are not acceptable

Students must have a gradepoint average exceeding 2.00 in all courses numbered 200 and above in the five area requirements.

Professional Education Requirements

To be certified to teach in the State of Illinois, students must complete the professional education component specified by the Department of Teacher Education in the College of Education and Health Sciences. These requirements include a minimum of 34 semester hours in education courses as follows:

- ETE 115 Schools and Schooling in American Society 3 hrs.
- ETE 116 Field Experience 1 hr.
- ETE 225 Human Development 4 hrs.
- ETE 280 Exploring Diversity: Learners, Families and Communities 3 hrs.
- ETE 342 Guiding Learners and Developing Classroom Communities 3 hrs.
- ETE 370 General Secondary Methods I 3 hrs.
- ETE 371 General Secondary Methods II 3 hrs.
- ETE 375 Methods of Teaching Secondary Social Studies 2 hrs.
- ETE 379 Novice Teaching in Secondary School 2 hrs.
- ETE 499 Student Teaching in the Secondary School 10 hrs.

Department of Sociology and Social Work

FACULTY Professors Najmi, L. Salamini (Chair); Associate Professor Gorin; Assistant Professors Crawford, Ferris, Zant, Zosky; Instructor Amos.

The Department of Sociology offers a variety of courses useful to students with diverse professional goals. Sociology is a popular major for students planning careers in such professions as law, business, journalism, health care, education, politics, social work, or public administration. It provides a solid body of knowledge on the nature and problems of human relations and a distinctive way of looking at the world.

The courses offer a range of methodologies and research techniques which can be applied in a variety of fields such as administration, criminal justice, health care, counseling, and social work. In addition, exposure to theoretical and methodological issues and to comparative, historical, and critical analyses provides those students who want to pursue graduate work with a strong academic background.

The department offers a major and a minor in sociology, and a major in social work. For social work major see Social Work Program.

Major in Sociology

A major in sociology consists of a minimum of 30 semester hours. At least 15 of the 30 required hours must be at the 300 level or above. A gradepoint average of 2.01 in courses taken in the department is needed for graduation.

Students who plan to major in sociology have the option of choosing a liberal arts concentration or an applied concentration.

Sociology majors are urged to consult with a department advisor each semester concerning class schedules.

B.A./B.S. in Sociology: Liberal Arts Concentration

1. Core Requirements
SOC 100 The Sociological Perspective
SOC 240 Research Methods
SOC 320 Social Theory
2. Any course from all sociology offerings.
3. Only one internship course may apply towards the major requirements.

B.A./B.S. in Sociology: Applied Sociology Concentration

1. Core Requirements
SOC 100 The Sociological Perspective
SOC 240 Research Methods
SOC 320 Social Theory

2. Two courses from each of the following:
 - A. Criminology (choose two)**
SOC 330 Law Enforcement and Social Control
SOC 331 Correctional Policies and Society
SOC 332 Juvenile Delinquency
SOC 333 Victims of Violence and Sexual Assault
SOC 430 Perspectives on Deviance
 - B. Social Policy and Practice (choose two)**
SOC 340 Demography and Urban Studies
SOC 341 Applied Medical Sociology
SOC 342 Social Policy
SOC 343 Sociology of Mental Health
SOC 440 Applied Environmental Sociology
3. Three additional courses from the sociology offerings. Only one internship course may apply towards the major requirements. (Social work classes are not included.)

Sociology Minor

The sociology minor requires a minimum of 15 hours as specified below:

1. SOC 100; SOC 240 or SOC 320
2. At least 9 of the 15 hours must be at the 300 level or above.
3. Minimum of 2.01 gradepoint average in courses taken for the minor.

The following courses in the Department meet University general education requirements: SOC 100, 210, 240, 311, 312, 313, 314, 321, 323, 325.

Course Descriptions

SOC 100 The Sociological Perspective 3 hrs. (Gen. Ed. SF)

Sociological insight into study of humans, society, and culture.

SOC 211 Contemporary Social Problems 3 hrs.

Sociological analysis of current social problems in the U.S.: poverty, racism, sexism, agism, medical care, the environment, population, urban disorganization, crime, juvenile delinquency, alcoholism, drug addiction, family disorganization, and mental illness. Use of different perspectives promotes a broad understanding of the study of social problems. Prerequisite: SOC 100 or consent of instructor.

SOC 240 Research Methods 3 hrs.

Social research methods: research design and models of observation, including single subject and program evaluation, quantitative and qualitative methods, sampling techniques, questionnaire construction, types of surveys, measurement problems, and data analysis.

SOC 290 Topics in Sociology 1-3 hrs.

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for a maximum of 3 hrs. credit.

SOC 310 Marriage and The Family**3 hrs.**

A survey introduction; emphasis on American society with some comparative study.

SOC 311 Comparative Family Systems**3 hrs. (Gen. Ed. NW)**

Comparative study of family systems of non-Western cultures; emphasis on major cultures of Asia. Family systems as aspects of the total political-economic organization. Prerequisite: SOC 100 or consent of instructor.

SOC 312 Social Inequality**3 hrs. (Gen. Ed. SF)**

Inequality in income, wealth, prestige, and power. Theories explaining roots of and changes in inequality. Emphasis on the U.S.; variations in the extent and forms of inequality across different nations.

SOC 313 Race, Ethnicity, and Minority Relations**3 hrs. (Gen. Ed. SF)**

Analysis of dominant-minority group relations and the processes of acculturation, assimilation, pluralism, and discrimination; effects of prejudice on interaction and social structure. Various minority groups explored specifically.

SOC 314 Native Americans**3 hrs. (Gen. Ed. NW)**

Description and analysis of traditional and contemporary cultures of the original inhabitants of the Americas; contemporary problems and aspirations of Indians and Eskimos.

SOC 315 Gender and Society**3 hrs.**

Biological, psychological, and social bases of sex role definitions. Issues in sexual stratification and sex role conflicts in contemporary American society; sexuality and gender.

SOC 316 Sociology of Work**3 hrs.**

Occupational categories and specific occupations; interrelationship between inequality, poverty, and occupational structure; impact of technological change and bureaucracy on occupations and work processes; implication of those changes for the individual and society.

SOC 320 Social Theory**3 hrs.**

Development of contemporary social thought from its Euro- American past. Emphasis on contemporary social theory and its major strands in American sociology. Prerequisite: SOC 100 or consent of instructor.

SOC 321 Individuality in the Modern World**3 hrs. (Gen. Ed. HP)**

Various philosophical conceptions of the relationship between the individual and social order; nature and status of individuality in the modern world. Emphasis on critical evaluation of influential systems of thought: Marxism, phenomenology, and critical theory. Prerequisite: junior standing or consent of instructor.

SOC 322 Socialization and Society**3 hrs.**

Study of the relationship between individuals and larger forms of social organization, with emphasis on forms of social interaction and social processes by which we become human. Prerequisite: SOC 100 or consent of instructor.

SOC 323 Marxism and Critical Perspectives**3 hrs. (Gen. Ed. SF)**

Basic concepts and methods of Marxism as formulated by contemporary Marxist social theorists: alienation, dehumanization, bureaucratization, and revolutionary consciousness in advanced capitalist societies.

Prerequisite: junior standing or consent of instructor.

SOC 324 Sociological Theory of Religion**3 hrs.**

Analysis of relationship between religion and social structures; emphasis on anthropological and social context of the origin of religion, and relationship of religion to contemporary industrial societies.

SOC 325 Science, Technology, and Society**3 hrs. (Gen. Ed. SF)**

Analysis of scientific and technological achievements, applications, and implications of the past half century, and their impact on the future. Emphasis on analysis of promises and threats of the growth of science and technology, and new ethical and social issues raised by technological progress. (Students with credit in HIS 385 may not take SOC 325.)

SOC 331 Correctional Policies and Society**3 hrs.**

Corrections as it applies to adults (17 and older in Illinois). Theoretical aspects of corrections: punishment and rehabilitation as concepts. Practical aspects: prisons, jails, probation, and other correctional sentencing alternatives. Prerequisite: SOC 100.

SOC 332 Juvenile Delinquency**3 hrs.**

Nature of juvenile delinquency, its causes, and expressions in deviant and criminal behavior. Relationship between the delinquent (16 and under in Illinois) and the juvenile justice system: police, courts, and corrections. Prerequisite: SOC 100.

SOC 333 Victims of Violence and Sexual Assault**3 hrs.**

Nature and characteristics of victimization. Relationships between offenders and victims, consequences for victims, and healing and prevention strategies. Prerequisite: SOC 100.

SOC 340 Demography and Urban Studies**3 hrs.**

Introduces applied demography; investigates how changes in fertility, mortality, and migration affect the size and structure of a population. Current and historical population trends: social, political, and economic determinants and consequences of changes in fertility, mortality and migration. Patterns and issues of urbanization. Prerequisite: SOC 100.

SOC 341 Applied Medical Sociology**3 hrs.**

Social context of health and illness; comparative health care delivery systems of Canada, the United States, and Mexico; history and development of community oriented health care. Methods for assessing community needs, developing health care programs to address those needs, and evaluating their success. Prerequisite: SOC 100.

SOC 342 Social Policy**3 hrs.**

Study of social problems in relation to social policy. Emphasis on placing social policy in a sociological perspective. Prerequisite: SOC 100 or consent of instructor.

SOC 343 Sociology of Mental Health**3 hrs.**

Social reaction to mental illness over time and place; emphasis on theories, roles, and institutions in modern society.

SOC 390 Topics in Sociology**3 hrs.**

Topics of special interest which may vary each time course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for maximum of 6 hrs. credit.

SOC 391, 392 Internship in Applied Sociology**3 hrs.**

Supervised work in applied settings; study of practical problems from the perspective of the discipline. Prerequisites: prior arrangement, consent of Department Chair. SOC 391 is prerequisite for SOC 392.

SOC 410 Sociology of the World System**3 hrs.**

Forces that have led to the emergence and consolidation of the world economy. Nature of the world economy and its impact on peoples and individuals across various economic strata. Prerequisite: junior or senior standing.

SOC 420 Critical Theory**3 hrs.**

Social criticism as a tradition of sociology. Strands in European social theory. Contemporary British social theory. Prerequisite: SOC 100 or consent of instructor.

SOC 421 The Culture of Cyberspace**3 hrs.**

The contemporary revolution in human interaction via computer. The social construction of virtual communities and the new culture, institutions, and norms emerging in the experience of cyberspace. New concepts of space, time, and social order; electronic subjectivity and anonymity; new representations of gender, race, and class; emergence of new languages of expression; and the revolutionary impact of hypertext and multimedia technologies on human thinking and learning. Prerequisite: junior/senior standing.

SOC 430 Perspectives on Deviance**3 hrs.**

Basic nature of deviance and crime; source of deviance in culture and values, and its manifestation in illegal behavior. Emphasis on theories of nature of deviance/crime, including labeling theory. Prerequisite: SOC 100.

SOC 440 Applied Environmental Sociology**3 hrs.**

Sociological analysis of contemporary environmental issues. How communities apply sociological methods and knowledge to act on local and global environmental concerns. Preparing the social impact assessment section of a federal environmental impact statement. Prerequisite: SOC 100.

SOC 490 Individual Study in Sociology**1-3 hrs.**

Special study on topics with faculty supervision. For sociology majors; non-majors require approval of the Department Chair. Prerequisite: consent of Department Chair.

SOC 499 Honors Colloquium**3 hrs.**

Special study or projects with faculty supervision. Oral presentation. Prerequisite: 3.5 GPA in sociology and consent of Department Chair.

SOC 571 Field Studies**1-3 hrs.**

Individual research. Prerequisite: senior or graduate standing and consent of Department Chair.

Social Work Program

FACULTY *Assistant Professor Zosky (Director); Instructor Amos (Field Coordinator).*

The purpose of the major in social work is to prepare students for beginning practice in social work and to provide an educational foundation for students planning to pursue graduate study in social work or other helping professions. The major provides a well-rounded academic and practice background in the generalist social work practice model. The University is in the process of seeking professional accreditation for the program from the Council on Social Work Education.

The curriculum requires majors to complete 72 credit hours, including 21 hours of liberal arts requirements, 45 hours of social work core requirements, and 6 hours of electives. A student may declare a social work major when admitted to Bradley; however, in order to progress to the professional practice component of the curriculum, a formal admission is required during the junior year.

The professional practice component includes practice courses and a field practicum. Students will complete a minimum of 420 field hours in an approved community agency.

It is important for students to consult with their social work advisor each semester to ensure that the requirements for the major are scheduled in the proper sequence. An overall grade point average of 2.25 is needed to graduate with a B.A. or a B.S. in social work.

Requirements

Liberal Arts Courses (21 hrs.)MTH 111 Elementary Statistics **or**

PSY 205 Quantitative Methods

ECO 100 Intro to Economics **or**ECO 221 Microeconomics **and**

ECO 222 Macroeconomics

PLS 105 Introduction to American Government

SOC 313 Race, Ethnicity, and Minority Relations **or**

ETE 280 Exploring Diversity: Learners, Families, and Communities

SOC 100 The Sociological Perspective

BIO 121 Life Science I

PSY 103 or 104 Principles of Psychology

Social Work Core Requirements (45 hrs.)**Social Welfare Policy and Services 6 hrs.**

SW 250 Introduction to Social Welfare

SW 355 Social Welfare Policy

Human Behavior and the Social Environment 12 hrs.

SOC 310 Marriage and the Family

PSY 445 Abnormal Psychology

SW 354 Human Behavior in the Social Environment I

SW 358 Human Behavior and the Social Environment II

Research 3 hrs.

SW 260 Research Methods

Social Work Practice 12 hrs.

SW 350 Foundation for Social Work Practice

SW 351, 352 Social Work Practice I, II

SW 353 Social Work Practice III

Field Practicums 12 hrs.

SW 393 Social Work Practicum

SW 395 Social Work Seminar

Electives (6 hrs.)

SW 356 Topics in Social Work

SW 490 Individual Study in Social Work

SW 499 Honors Colloquium

SOC 211 Contemporary Social Problems

SOC 311 Comparative Family Systems

SOC 312 Social Inequality

SOC 314 Native Americans

SOC 315 Gender and Society

SOC 321 Individuality in the Modern World

SOC 332 Juvenile Delinquency

SOC 333 Victims of Violence and Sexual Assault

SOC 341 Applied Medical Sociology

SOC 343 Sociology of Mental Health

AAS 211 African American History from
1877 to the Present

NUR 221 Substance Abuse

PSY 402 Human Sexuality

Students should consult the Social Work Student Handbook for recommendations regarding general education selections, electives, and BA/BS requirements, and for sample 4-year and 2-year course plans.

Course Descriptions

SW 250 Introduction to Social Welfare 3 hrs.

Overview of historical development and contemporary forces shaping the social welfare system in the U.S. Examines social policies, social conditions affecting vulnerable populations, and service delivery systems in which social work is practiced. Includes community agency contact.

SW 260 Research Methods 3 hrs.

Social research methods: research design and models of observation, including single subject and program evaluation, quantitative and qualitative methods, sampling techniques, questionnaire construction, types of surveys, measurement problems, and data analysis. Prerequisites: Sociology or social work major or consent of instructor; MTH 111 or PSY 205.

SW 350 Foundations for Social Work Practice 3 hrs.

Historical development of social work. Introduction of generalist social work practice; systems perspective; knowledge, skills, values, and ethics required for practice; communication skills and the helping relationship as foundation for the problem-solving process. Overview of fields of practice. Includes required volunteer experience.

SW 351 Social Work Practice I 3 hrs.

Assessment, planning, intervention, evaluation, termination, and follow-up phases of the problem-solving process. Students develop interviewing skills and apply knowledge of social systems, human development, diversity, and ethics with focus on the micro level. Prerequisite: SW 350, social work major or consent of social work program director.

SW 352 Social Work Practice II 3 hrs.

Generalist practice with focus on families and groups as well as individuals in group contexts. Includes required volunteer experience in group setting. Prerequisites: SW 350; social work major or consent of social work program director.

SW 353 Social Work Practice III 3 hrs.

Generalist practice with focus on organizations, communities, and large social systems. Assessment, planning, intervention, and evaluation skills for macro-level practice. Emphasis on issues of diversity, discrimination, and oppression. Prerequisites: SW 350; social work major or consent of social work program director.

SW 354 Human Behavior in the Social Environment I 3 hrs.

Current research and theory concerning interaction of environment with individual behavior. Life span development, strengths, approach, and issues of diversity as influences on individual development.

SW 355 Social Welfare Policy 3 hrs.

Analysis of social welfare policy from the social work perspective. Impact of social policy on recipients and constituents of social welfare programs. Institutional responses to social problems, social justice, and human needs. Analysis and evaluation of policy at the organizational, community, and legislative levels. Prerequisites: ECO 100; PLS 105; SW 250.

SW 356 Topics in Social Work 3 hrs.

Topics of special interest which may vary each time the course is offered. Topic stated in current Academic Handbook. May be repeated under a different topic for maximum of 6 hours credit.

SW 358 Human Behavior in the Social Environment II 3 hrs.

Current research and theory concerning interaction of environment with families, groups, organizations, and communities. Social and cultural causes and impact of diversity, discrimination, and oppression. Prerequisite: SW 354.

SW 393 Social Work Practicum 9 hrs.

Supervised experience in an approved community agency; use of knowledge and skills common to generalist practice; 420 field hours required. Pass/fail. Prerequisites: SW 351; social work major. Corequisite: SW 395.

SW 395 Social Work Seminar**3 hrs.**

Seminar that integrates theory and principles learned in academic courses with field and practice experience. Prerequisites: SW 351; social work major. Corequisite: SW 393.

SW 490 Individual Study in Social Work**1-3 hrs.**

Special study on topics with faculty supervision. For social work majors; non-majors require approval of Department Chair. May be repeated under a different topic up to a maximum of 3 credit hours. Prerequisite: consent of director of social work program.

SW 499 Honors Colloquium**3 hrs.**

Special study or project conducted under faculty supervision. Oral presentation before a faculty committee. Prerequisite: 3.5 GPA in social work major and consent of department chair.

Western Civilization

DIRECTOR *Jones (History).***CIV 100 Western Civilization****3 hrs. (Gen. Ed. WC)**

Required for all students. Team taught by instructors from a variety of disciplines. Emphasis on conceptual approach to intellectual, cultural, political, economic, social, and technological issues that have formed the spirit of the various ages from ancient Greece to the present. Readings from original sources; lecture and small discussion groups.

CIV 101 Western Civilization to 1600**3 hrs. (Gen. Ed. WC)**

Emphasis on conceptual approach to intellectual, cultural, political, economic, social, and technological issues that have formed the spirit of the various ages from classical Greece to 1600.

CIV 102 Western Civilization Since 1600**3 hrs. (Gen. Ed. WC)**

Emphasis on conceptual approach to intellectual, cultural, political, economic, social, and technological issues that have formed the spirit of the various ages from 1600 to present.

CIV 111, 112 Unified Composition and Western Civilization: I, II**3 hrs. each (Gen. Ed. C1, Gen. Ed. WC)**

Integration of ENG 101 and CIV 100. Emphasis on clear and effective writing using subject matter of Western Civilization. Team taught by faculty from a variety of disciplines. Students must take both semesters (111 and 112) to satisfy University requirements in both composition and Western Civilization. If unable to take both semesters, students must take CIV 100 and ENG 101.

Western European Studies Program

FACULTY COORDINATING COMMITTEE *Gobeyn (Political Science); Jones (History); Walker (Foreign Languages), Chair.*

The Western European studies minor is designed to provide knowledge of the region, past and present. The purpose of the minor is to expose students to the broad spectrum of economic, political, social, and cultural forces which have given in the past and continue to give shape today to the development of contemporary Western Europe society and the European Community. It is meant to provide a centralizing focus and coherence to European studies, while proceeding in an interdisciplinary and cross-disciplinary approach. A singular concentration on a particular nation-state, national culture, or historic era is not the intent of the program. The minor should supplement or complement a student's major, and help support career or graduate school objectives. To ensure coherence, students will choose part of their course work from a list of core subjects. A senior-level capstone course will provide the opportunity to synthesize and integrate perspectives and insights gained from core and elective course work.

Minor in Western European Studies

Curriculum and Requirements

Prerequisite course:

CIV 100 Western Civilization or CIV 111, 112 Unified Composition and Western Civilization I, II. Any transfer work must be a substantial equivalency.

Foreign Languages:

Successful completion of one of the following: FLF, FLG, FLS 202 Intermediate French, German, Spanish or equivalent. It is recommended that students complete the foreign language requirement as early as possible.

In addition to the foreign language requirement, the minor requires 18 hours total. Students may count toward the minor a maximum of 3 hours in their major, that is, from the courses in their major listed as part of the minor. Students may count toward the minor a maximum of 6 hours in courses from any given department. Students must complete a minimum of 9 junior-senior hours in the minor.

Course hours for the minor must be distributed in the following manner:

Social Sciences 6

One 3-hour core course chosen from the following:
IS 330, 331 European Nations in International Affairs
PLS 304 Governments of West Europe

One 3-hour elective chosen from the following:
ECO 444
HIS 320, 322, 323, 325, 329, 341, 342, 375, 382
IS 250, 330*, 331*
PLS 304*
SOC 320
* Elective if not taken as part of core

Humanities 6

One 3-hour core course from the following:
ENG 121 Early European Writers
ENG 122 Later European Writers
PHL/PLS 307 Classical Political Philosophy
PHL/PLS 308 Modern Political Philosophy

One 3-hour elective from the following list:
ENG 121*, 122*, 127, 237, 239, 341, 344,
347, 358, 361, 363
FLF 305, 316, 325
FLG 316, 321, 325
FLS 315, 316
PHL 300, 304, 306, 311
PHL/PLS 307*, 308*
* Elective if not taken as part of core.

Fine Arts 3

One 3-hour core course from the following:
ART 140 Survey of World Art
MUS 203 History of Music

Senior Capstone Course 3
HIS 340 Contemporary Europe

Total Hours 18

Women's Studies Program

FACULTY *Robertson (Director), Blouch, S. Buchanan, L. Crawford, Fowler-Salamini, M. Fry, Gardner, Gorin, J. E. Jost, M. Taylor, Thomas, L. Vickroy.*

Women's studies is an interdisciplinary field of study which questions the traditional attitudes towards women and offers a new understanding of and perspectives on women. The primary objectives of women's studies are:

1. to address past scholarly neglect of material by, for, and about women;
2. to increase and disseminate knowledge of the behaviors, experiences, and contributions of women in society;
3. to examine critically and evaluate the assumptions and theories held about women in society in the traditional disciplines, as well as current interdisciplinary approaches to the study of women;
4. to provide an expanded vision of women's future roles and opportunities and foster an awareness of women's existing abilities and potentials.

Minor in Women's Studies

Required Courses (6 hours)

WMS 200 Introduction to Women's Studies	3
WMS 400 Directed Research in Women's Studies	3

Electives (9 hours)

ENG 129 African American Literature	3
ENG 190 Women in Literature	3
ENG 331 Studies in Women Writers	3
NUR 219 Women and Health	3
PSY 300 Psychology of Women	3
HIS 304 Women in American History	3
HIS 334 Women in Developing Nations	3
HIS 382 History of Women, Work, Family	3
PLS 493 Seminar in Political Theory: Equality, Diversity, and Citizenship	3
SOC 313 Race, Ethnicity, and Minority Relations	3
SOC 315 Gender and Society	3

Course Descriptions

WMS 200 Introduction to Women's Studies **3 hrs. (Gen. Ed. SF)**

Interdisciplinary course; reexamines traditional approaches to and offers new perspectives on roles, contributions, and identity of women as a group. The female body; sex differences; historical changes in women's roles; women as members of minority, racial, ethnic, and sexual groups; changing economic political, and social status of women in 20th century American society. Approved for General Education.

WMS 400 Directed Research in Women's Studies **3 hrs.**

Directed readings or research for a paper which analyzes, synthesizes, and interprets an area of women's studies. Prerequisites: WMS 200; 9 hrs. of women's studies elective courses; or consent of instructor.