The Department of Biological Sciences provides programs for both biology and non-biology majors. For its majors, the department provides a core program consisting of seven lecture/laboratory courses. Beyond the core program, the department offers a number of courses which permit a moderate degree of specialization in any one of several areas. It also provides a number of opportunities outside the classroom for learning. These include a program of seminars, internships and opportunities for research with, or under the direction of, a member of the faculty.

Typically, students who intend to enter medicine or other health-related professions such as dentistry, veterinary medicine, osteopathic medicine, physical therapy, pharmacy, podiatry, physician assistant, and optometry, find it most appropriate to major in biology, and follow the Standard Biological Sciences concentration. The department provides specialized academic advising and counseling for students pursuing any one of these pre-professional options.

Students interested in pursuing careers in biotechnology select from a variety of intermediate and upper-level courses in the biological sciences. These lecture-laboratory courses include cell biology, genetics, biochemistry, immunobiology, molecular biology, developmental biology, and microbiology, as well as several advanced seminars.

In addition, the School of Education and the Department of Biological Sciences offer a program that prepares students for a career in teaching biology at the secondary school level. The Biology/Education concentration culminates in certification by the State of Illinois. The departmental course requirements in the Standard Biological Sciences concentration and in the Biology/Education concentration are listed below.

The Department of Biological Sciences also administers a Clinical Laboratory Sciences (Medical Technology) program similar to the Standard Biological Sciences concentration. The department provides specialized academic advising for students in this program. Upon completing the requirements for the baccalaureate, the student enrolls in one of several hospital schools of Clinical Laboratory Sciences associated with DePaul for a year of specialized study. The department provides assistance with placement in the hospital-based internship.

Finally, the department provides courses for non-biology majors (students in nursing, physical education, biochemistry, psychology, art, journalism, etc.) as well as courses for those who intend to later apply for entrance elsewhere into specialized programs such as Physical Therapy, Occupational Therapy, Pharmacy, and Dietetics. The Department of Biological Sciences provides those students with both academic and career counseling during their years at DePaul University. Some students remain at DePaul and complete the B.S. degree prior to entering one of these specialized programs at a different institution; others transfer prior to graduation.
In addition to the 28 quarter hours required in the liberal studies core, students are required to complete 48 quarter hours distributed through five learning domains as part of their Bachelor of Science degree in biological sciences. The number and distribution of courses in each of the areas are as follows:

**Core:** 28 quarter hours required

**First Year Program:** (16 quarter hours required) Discover Chicago or Explore Chicago, Focal Point Seminar, and Composition and Rhetoric I and II.

**Sophomore Seminar:** (4 quarter hours required) Sophomore Seminar on Multiculturalism in the United States.

**Junior Year Experiential Learning:** (4 quarter hours required) If your junior year experiential learning requirement also fulfills a major field requirement, you may substitute a liberal studies domain elective (from outside your major field area) or the third course in the modern language option for this requirement.

**Senior Capstone:** (4 quarter hours required) Biological Sciences requires students majoring in Biological Sciences to complete the senior capstone in Biological Sciences, unless you are a double major and/or in the Honors program. If you are a double major and/or in the Honors Program you must follow the capstone guidelines for that area if the capstone is required. If the capstone is optional in the other areas, you can elect which capstone to complete.

**Arts and Literature:** 12 quarter hours required. At most 2 courses from the same department or program.

**Philosophical Inquiry:** 8 quarter hours required.

**Religious Dimensions:** 8 quarter hours required; 4 quarter hours in patterns and problems, and 4 quarter hours in traditions in context.

**Scientific Inquiry:** not required.
Self, Society and the Modern World: 12 quarter hours required. At most 2 courses from the same department or program.

Understanding the Past: 8 quarter hours required; 4 quarter hours of history pre-1800 and 4 quarter hours of history primarily between 1800-1945. In addition, courses must be from two different categories: 1) Asia, 2) Latin America, 3) Africa, 4) North America or Europe and 5) intercontinental or comparative.

Although study in the Biological Sciences contributes to a student’s liberal education, courses offered by the Department of Biological Sciences are not applied towards liberal studies requirements for the biological sciences major. Exceptions to this rule are the junior experiential learning and the senior capstone requirements.

DEPARTMENTAL PROGRAM REQUIREMENTS

I. STANDARD CONCENTRATION

Biological Sciences: 101 General Biology I; 102 General Biology II; 103 General Biology III; 215 Ecology; 250 Cell Biology; 260 Genetics; 309 Plant Physiology or 310 Vertebrate Physiology; and five additional Biology courses, at least two of which must include a laboratory. (Bio. 115, 118, 121, 122, 155, 156, 160, 161, 166, 202, 203, 204, 206, 208, 224, 239, 256, and 257 do not generate credit toward the major.)

Chemistry: 111 General and Analytical Chemistry I; 113 General and Analytical Chemistry II; 115 General and Analytical Chemistry III; (or 131 General Chemistry I and 133 General Chemistry II); 171 Organic Chemistry I; 173 Organic Chemistry II; 175 Organic Chemistry III. (Unless special permission is granted by the Biology Department, students are expected to take the first-year chemistry courses simultaneously with Biology 101, 102, and 103.)

Physics: 150 General Physics I; 151 General Physics II; and 152 General Physics III.

Mathematics/Computer Science/Statistics: 150 Calculus I; 151 Calculus II; 152 Calculus III (or Math 147, 148 and 149 or Math 160, 161 and 162); Computer Science 239 Personal Computing for Scientists, and one statistics course: Mathematics 242 Elements of Statistics I; 348 Applied Statistical Theory and Methods I; or Psychology 240 Statistics I. (Students may be advised on the basis of their performance on the Mathematics Diagnostic Test to take one or more pre-calculus courses.)

II. TEACHER OF BIOLOGY SECONDARY LEVEL

In cooperation with the School of Education, the Department of Biological Sciences offers a concentration of study which combines most of the requirements for a major in Biology with certification for teaching biology at the middle junior high, and senior high school levels. A student electing such a program should consult the School of Education counselor as soon as possible after entering DePaul.
SPECIAL PROGRAMS

BIOLOGY MINOR
A student wishing to obtain a minor in Biology must take six courses designed primarily for the major, including Biology 101, 102, and 103. Three additional courses will be recommended by the Department on the basis of the student’s interests.

CLINICAL LABORATORY SCIENCE (MEDICAL TECHNOLOGY)
A student wishing to enter a career in Clinical Laboratory Science takes a program of study almost identical to the major in Biological Sciences, except that Biology 210, 310 and 370 are also required. Upon completion of the requirements for the baccalaureate, the student enters one year of internship in a medical center or hospital associated with DePaul University.

MASTER OF SCIENCE DEGREE PROGRAM
Certain graduate level courses, including 401 (Independent Study) are open to qualified advanced undergraduate students with the approval of the chair of the department. See the Graduate School Bulletin for course offerings. Students planning to complete a graduate program at DePaul University should inquire of their academic advisor how they, as juniors or seniors, may initiate studies in the Graduate School which become applicable toward our master’s degree (see below).

COMBINED BACHELOR’S AND MASTER’S DEGREE IN BIOLOGY
The Department of Biological Sciences offers a special option to students with a potential for graduate study and an interest in pursuing a master’s degree at DePaul. Following consultation with the student’s advisor, and with prior permission from the department, a student may enter the Graduate Program prior to completion of the bachelor’s degree. The student may take graduate level courses as an undergraduate and have up to three of them count towards the undergraduate degree as well. These students will earn a bachelor’s degree during their fourth year and at the same time be considered graduate students with all of the perquisites that apply to that status. Those perquisites include, but are not limited to, eligibility for assistantships, attending graduate-only courses, graduate level mentoring, and initiation of master’s level research.

SEQUENCING
Since programs in the Biological Sciences tend to be structured, it is useful for students to take courses in sequence. Students should begin with the General Biology and Basic Chemistry sequences. These are prerequisite to Ecology, Cell Biology, Genetics, and Organic Chemistry, which should preferably be taken in the sophomore year. Since calculus is required, students should also begin their study of mathematics as soon as possible, preferably prior to their junior year, so that they can be adequately prepared for the General Physics sequence, best taken in the junior year. While the departmental advisors can help individual students plan alternatives if necessary, especially for transfer students, the sequence presented above is highly recommended and most likely to be completed in a timely fashion.

The predominance of chemistry and biology sequences in the freshman and sophomore years generally dictates that, with the exception of the Liberal Studies Core courses, the majority of the Liberal Studies courses may be postponed until the junior and senior years. Students may therefore take fewer Liberal Studies courses in the first two years, concentrating instead on major field requirements which are prerequisites to upper division courses.
BIOLOGY
Scientific inquiry Courses
BIO 115 Introduction to Biology
BIO 118 Marine Biology
BIO 121 Infectious Diseases and Immunity
BIO 122 Introduction to Paleobiology
BIO 155 Introduction to Biology With Laboratory
BIO 156 Food, Fuel For Life
BIO 160 Marine Biology With Lab
BIO 161 Infectious Diseases and Immunity With Laboratory
BIO 166 Introduction to Plant Biology With Lab
BIO 203 Inheritance in Humans
BIO 204 Vertebrates: Diversity and Evolution
BIO 206 Brain and Behavior
BIO 208 Stress, Hormones and the Nervous System
BIO 212 Medical Tests and Trials
BIO 224 How the Human Body Works
BIO 239 The Brain: Biology, Evolution and Consciousness
BIO 256 Principles of Biology
BIO 257 Avian Biology

Major Field Courses
BIO 101 General Biology I
BIO 102 General Biology II
BIO 103 General Biology III
BIO 201 Mammalian Anatomy
BIO 202 Mammalian Physiology
BIO 209 Plant Structure & Development
BIO 210 Microbiology
BIO 215 Ecology
BIO 250 Cell Biology
BIO 260 Genetics
BIO 290 Topics in Biology
BIO 300 Psychobiology
BIO 301 Animal Behavior
BIO 302 Student Laboratory Instruction
BIO 303 Introduction to Scientific Research
BIO 309 Plant Physiology
BIO 310 Vertebrate Physiology
BIO 311 Histology
BIO 315 Topics in Ecology
BIO 317 Aquatic Biology
BIO 330 Developmental Biology
BIO 331 Topics in Developmental Biology
BIO 333 Mycology
BIO 335 Concepts in Evolution
BIO 339 Cellular Neurobiology
BIO 340 Systems Neurobiology
BIO 341 Topics in Neurobiology
BIO 350 Animal Adaptations
BIO 352 Advanced Comparative Physiology
BIO 354 Problems in Cell Motility
DEPARTMENT OF BIOLOGICAL SCIENCES

BIO 360 Molecular Biology
BIO 361 Topics in Molecular Biology
BIO 365 Principles of Toxicology
BIO 368 Developmental Toxicology
BIO 370 Immunobiology
BIO 386 Introduction to Endocrinology
BIO 390 Special Topics
BIO 392 Extramural Internship
BIO 395 Biology Capstone Seminar
BIO 398 Readings and Research
BIO 399 Independent Study

COURSES

All courses carry 4 quarter hours credit unless otherwise specified.

BIO 101 GENERAL BIOLOGY I Focuses on the unity of life: its biochemical and cellular makeup and functions, the acquisition and utilization of energy, and the storage and utilization of genetic information. Lecture-laboratory. (Lab fee) COREQUISITE(S): Recommended CHE 111.

BIO 102 GENERAL BIOLOGY II Biodiversity of bacteria, protists, fungi and plants; plant structure and function; ecological relations of organisms to their environment. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 101 or consent of department.

BIO 103 GENERAL BIOLOGY III Deals primarily with diversity and development within the animal world including basic principles of physiology. Also addresses current concepts and mechanisms of evolution. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 102 or consent of department.

BIO 115 INTRODUCTION TO BIOLOGY Deals with the scientific method, biological chemistry, structure, function, and heredity of cells and organisms, evolution and ecology. Cannot receive credit for both BIO 115 and BIO 155.

BIO 118 MARINE BIOLOGY Marine biology.

BIO 121 INFECTIOUS DISEASES AND IMMUNITY This course is designed to introduce students to the world of microorganisms, especially those which cause infectious diseases and to explain how the immune system protects the body against these organisms. Cannot receive credit for both BIO 121 and BIO 161.

BIO 122 INTRODUCTION TO PALEOBIOLOGY This course focuses on the concepts and practices of paleobiology, the scientific study of the biology of extinct organisms preserved as fossils.

BIO 155 INTRODUCTION TO BIOLOGY WITH LABORATORY This lecture-laboratory course deals with the scientific method, biological chemistry, structure and function of cells, organs, and organ systems, heredity, evolution and ecology. Course includes a laboratory experience involving biological concepts discussed in class. Cannot receive credit for both BIO 115 and BIO 155. (Lab fee)

BIO 156 FOOD, FUEL FOR LIFE Food from a biological perspective: defined at the chemical and biochemical level and as it fuels life through metabolism and nutrition. Other topics include improving foods by traditional breeding and new genetic engineering technology, food production, sustainable agriculture; food safety issues, and feeding world populations.
BIO 160 MARINE BIOLOGY WITH LAB Study of marine diversity; marine ecosystems; and connections between oceans, the atmosphere, and humans. Lecture-Laboratory. Cannot receive credit for both BIO 118 and BIO 160.

BIO 161 INFECTIOUS DISEASES AND IMMUNITY WITH LABORATORY This course is designed to introduce students to the world of microorganisms with particular emphasis on how microorganisms cause disease and the actions of the human body in fighting disease. This course includes a laboratory experience to reinforce concepts and introduce students to practical aspects of disease causing microorganisms. Cannot receive credit for both BIO 121 and BIO 161.

BIO 166 INTRODUCTION TO PLANT BIOLOGY WITH LAB This course deals with the characteristic features of higher plants, plant products that are beneficial to humans, structure, physiology and ecology of cultivated plants, and modern horticultural and genetic approaches to the improvement of plants and plant productivity.

BIO 201 MAMMALIAN ANATOMY Structure of the mammalian organism. Lecture-laboratory. Lecture emphasis on the human; laboratory emphasis on the feline. (Lab fee)

BIO 202 MAMMALIAN PHYSIOLOGY Introduction to concepts and mechanisms of human organ system function including respiratory, cardiovascular, renal, muscular, nervous, endocrine and digestive systems. Lecture-laboratory. (Lab fee) Cannot receive credit for both BIO 202 and BIO 224.

BIO 203 INHERITANCE IN HUMANS An examination of genetics in the human species, including the inheritance of ordinary traits, genetic diseases, and those complex attributes to which inheritance contributes, such as behavior and intelligence.

BIO 204 VERTEBRATES: DIVERSITY AND EVOLUTION Examines vertebrate diversity and the interrelationships among vertebrate groups including humans. The quantitative component will include several data processing exercises that address: 1) how vertebrates are related and how those relationships are determined using phylogenetic trees, 2) species descriptions and analyzing morphological differences among species and 3) graphical interpretations.

BIO 206 BRAIN AND BEHAVIOR Examines basic concepts in neurobiology. Specifically how the brain is organized, how it sends messages throughout the body, and how these messages turn into daily activities such as seeing, eating, and walking. How these behaviors are altered due to disease or injury of the brain is also discussed. Cannot receive credit for both BIO 206 and BIO 239.

BIO 208 STRESS, HORMONES AND THE NERVOUS SYSTEM A study and discussion of the basic concepts of stress and stressors, and their effects on the functioning of the Nervous System, the Endocrine System and the Immune System; the feedback influence of hormones and neurochemicals on cerebral processing, and the relation of these phenomena to health and behavioral medicine.

BIO 209 PLANT STRUCTURE & DEVELOPMENT Deals with developmental plant anatomy, and the factors which regulate the ontogeny of higher plants. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 102 or consent of instructor.

BIO 210 MICROBIOLOGY Biology of microorganisms with emphasis on viruses, bacteria, fungi, and protozoa. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 101 or consent of instructor.
BIO 212 MEDICAL TESTS AND TRAILS Is fiber good for you? Are cell phones bad? Participants in this course will learn how to analyze popular health claims and medical studies using a computer spreadsheet (Excel). Topics include: everyday risks, studies of exercise and diet, genetic testing, drug development, medical diagnosis and clinical trials. PREREQUISITE(S): Quantitative reasoning course; experience with Excel spreadsheet.

BIO 215 ECOLOGY Study of organismal interactions; responses of individuals, populations and natural communities to their external environment. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 103 or consent of instructor.

BIO 224 HOW THE HUMAN BODY WORKS Fundamentals of human body functions through an examination of organs and organ systems. The quantitative component of this course will explore the concepts of scientific discovery through structured out-of-class projects. Cannot receive credit for both BIO 202 and BIO 224.

BIO 239 THE BRAIN: BIOLOGY, EVOLUTION AND CONSCIOUSNESS Explores the evolution, ontogeny and organization of the vertebrate brain and how these processes give rise to the behaviors and complex cognitive abilities of animals, including humans. The laboratory emphasizes how scientific thinking and hypothesis testing is involved in discovering how the brain is organized and how it communicates information that results in behavior. Cannot receive credit for both BIO 206 and BIO 239. (Lab fee)

BIO 250 CELL BIOLOGY Fundamentals of cell form and function studied at the molecular and organelle level, including basic cellular biochemistry, ultrastructure and physiology. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 103 and Intro Chemistry sequence or consent of instructor.

BIO 256 PRINCIPLES OF BIOLOGY The course is designed to introduce the student to several important principles of Biology, including aspects of cell biology, genetics, ecology, development, and evolution. The course will involve labs on each of these topics as they are addressed, requiring the student to accumulate and analyze data and to be involved in summarizing and presenting this data to the class. (Lab fee)

BIO 257 AVIAN BIOLOGY A foundation in the study, knowledge, and appreciation of birds. Use of field techniques to monitor and measure free-ranging bird populations in an experiential learning situation. Contributes to understanding of interaction and interdependency of nature through study of avian life. PREREQUISITE(S): Junior-Senior standing. (Lab fee)

BIO 260 GENETICS Transmission of heritable traits, nature of genetic material, manner of its expression, its mutability, and its significance with respect to organismal and species variation. Lecture-laboratory. PREREQUISITE(S): BIO 101, 102 and 103.

BIO 290 TOPICS IN BIOLOGY (2-4 credit hours) Occasional courses offered at intermediate levels. See the schedule of classes for current offerings. PREREQUISITE(S): Sophomore Biology standing.

BIO 300 PSYCHOBIOLOGY Fundamental concepts of the structure and function of the nervous and endocrine systems, and their interplay with genetics, nutrition and the external environment in the expression of overt behavior. Lecture only. PREREQUISITE(S): BIO 103 or consent of instructor.
BIO 301 ANIMAL BEHAVIOR An exploration of the types of animal behavior and modifiers of behavior as based on neuroendocrine function, with special emphasis on Felids. Lecture - Field Studies. Laboratory required (ISP 335). (Lab fee) PREREQUISITE(S): BIO 101, 102 and 103.

BIO 302 STUDENT LABORATORY INSTRUCTION Completion of course requires student to serve as teaching assistant for biology laboratory course.

BIO 303 INTRODUCTION TO SCIENTIFIC RESEARCH Introduction to Scientific Research. Course requires that student has had (or is currently having) experience in scientific research.

BIO 309 PLANT PHYSIOLOGY Functional and developmental aspects of plants, especially of vascular autographs. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 250 and Chemistry 125 (or 175) or consent of instructor.

BIO 310 VERTEBRATE PHYSIOLOGY Functions and regulatory mechanisms of vertebrate cells, organs and organ systems with special emphasis on mammals. Lecture-Laboratory. (Lab fee) PREREQUISITE(S): BIO 250 and CHE 125 (or 175) or consent of instructor.

BIO 311 HISTOLOGY A Lecture/Laboratory course covering the microscopic structure of the tissues that make up animal organs. The development of these tissues as well as their relationship to the principles of gross anatomy, physiology, cell biology and molecular biology is stressed. (Lab fee) PREREQUISITE(S): BIO 250 or consent of instructor.

BIO 315 TOPICS IN ECOLOGY The focus of this course is to read and critique classic papers in ecology and to connect their foundational ideas with modern research and understanding. PREREQUISITE(S): BIO 215 and senior standing in biology or consent of the instructor.

BIO 317 AQUATIC BIOLOGY The study of biological, physical and chemical phenomena in freshwater environments. Emphasis on organisms and their ecology. Lecture-Laboratory. (Lab fee) PREREQUISITE(S): BIO 103 and BIO 215 or consent of instructor.

BIO 330 DEVELOPMENTAL BIOLOGY A survey of developmental phenomena in animals from fertilization to sexual maturity. Topics include gametogenesis, early cell divisions, organ formation, metamorphosis, regeneration, birth defects, stem cells, reproductive technology and mammalian cloning. Lecture-laboratory. (Lab Fee) PREREQUISITES: BIO 250 and BIO 260 or consent of instructor.

BIO 331 TOPICS IN DEVELOPMENTAL BIOLOGY (Cross Listed as BIO 431) This seminar course examines the current embryological literature using both evolutionary and molecular perspectives. Previous student-led topics include: how early embryos are organized, the signals controlling left-right asymmetry, the evolutionary origin of feathers and the development of the retina. PREREQUISITE(S): BIO 330 or BIO 360 or consent of instructor.

BIO 333 MYCOLOGY This course provides an opportunity for students to integrate their knowledge of cell biology, genetics, ecology and physiology at the organismal level by focusing on fungi. Students will gain an appreciation of the biological diversity within the major groups of fungi and their role in the environment, research and biotechnology. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 215, 250 and 260 or consent of instructor.
BIO 335 CONCEPTS IN EVOLUTION Study of evolution and diversity in the living world. Lecture only. PREREQUISITE(S): BIO 103 and BIO 215. COREQUISITE(S): BIO 260.

BIO 339 CELLULAR NEUROBIOLOGY (Cross-listed as BIO 439) A study of the cellular and molecular mechanisms of the nervous system and the role they play in neural signaling and neural development. PREREQUISITE(S): BIO 310 or consent of the instructor.

BIO 340 SYSTEMS NEUROBIOLOGY (Cross-listed as BIO 440) Explores the organization of the nervous system on a gross anatomical level and based on functional units. The emphasis is on understanding how individual behaviors are produced by different neural systems and how these individual behaviors integrate into the activities of whole organisms. (Lab fee) PREREQUISITE(S): BIO 310 or consent of the instructor.

BIO 341 TOPICS IN NEUROBIOLOGY A seminar course examining current topics in neurobiology. Original readings will include both current review and classic articles in neuroscience. PREREQUISITE(S): BIO 339 or 340.

BIO 350 ANIMAL ADAPTATIONS An introduction to the ecological concept of adaptation. Adaptation is defined and illustrated using specific animal examples. Discussion will focus on how these specialization's in structure and function equip the animal for survival. PREREQUISITE(S): Junior or senior biology standing or consent of instructor.

BIO 352 ADVANCED COMPARATIVE PHYSIOLOGY Comparative and environmental approach to the functions and mechanisms of vertebrate organ systems. Selected topics will be addressed using a lecture/discussion/seminar format. PREREQUISITE(S): BIO 310 or consent of instructor.

BIO 354 PROBLEMS IN CELL MOTILITY Analysis of contemporary problems in cellular movements, with emphasis on the biochemistry, biophysics and regulation of cell and organelle movements. Lecture, seminar, discussion. PREREQUISITE(S): BIO 250, Physics, Calculus or consent of instructor.

BIO 360 MOLECULAR BIOLOGY Study of biology at the molecular level, focusing on the regulation of gene expression and the principles of genetic engineering. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 250, 260 and Chemistry 125 (or 175), or consent of instructor.

BIO 361 TOPICS IN MOLECULAR BIOLOGY Discussion and seminars in selected areas of molecular biology. PREREQUISITE(S): BIO 360 or consent of instructor.

BIO 365 PRINCIPLES OF TOXICOLOGY A study of the adverse effects of chemicals on living organisms, including the chemical natures, kinetics, dose-response relationships, metabolism, and mechanisms of action of various toxins and toxicants. PREREQUISITE(S): BIO 103 and CHE 125 (or 175) or consent of instructor.

BIO 368 DEVELOPMENTAL TOXICOLOGY The toxic effects of drugs and other chemicals, especially on the developing mammalian organism including the human. Laboratory project in experimental induction of birth defects. (Lab fee) PREREQUISITE(S): Junior or senior Biology standing or consent of instructor.

BIO 370 IMMUNOBIOLOGY Basic factors governing immune phenomena and antigen-antibody reactions. Lecture-laboratory. (Lab fee) PREREQUISITE(S): BIO 250 and BIO 260 or consent of instructor.
BIO 386 INTRODUCTION TO ENDOCRINOLOGY A study of hormones as chemical regulators of development, growth, metabolism, homeostasis, reproduction, response to stress, and behavior; as well as hormone synthesis, chemistry, mechanisms of action, and endocrine gland structure. PREREQUISITE(S): BIO 250 and 310 or consent of instructor.

BIO 390 SPECIAL TOPICS (2-4 credit hours) Occasional courses offered at an advanced level. See the schedule of classes for current offerings. PREREQUISITE(S): Junior or senior biology standing.

BIO 392 EXTRAMURAL INTERNSHIP (0-4 credit hours) An opportunity for students to integrate their academic experience with real-world work situations; supervision is provided by a member of the DePaul Faculty in the Biological Sciences and the private or public enterprise. PREREQUISITE(S): Sophomore, junior or senior standing in biology; only by arrangement with the internship director, and by permission of the department.

BIO 395 BIOLOGY CAPSTONE SEMINAR The aim of this course is to integrate current biological view(s) of humanity with the perspectives of the liberal studies curriculum. Students will develop and debate topics that demonstrate mastery of the biology core curriculum (cell biology, genetics, physiology and ecology) while touching on history, philosophy, ethics and the law.

BIO 398 READINGS AND RESEARCH (1-4 credit hours) PREREQUISITE(S): Consent of instructor and department.

BIO 399 INDEPENDENT STUDY (1-4 credit hours) PREREQUISITE(S): Consent of instructor and department.