

BIOLOGY

Office: Room 5220
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Mission of Biology Major

Biology is the study of living organisms at the molecular, microscopic, and systemic levels and deals with the interrelation of life forms and their environments. Students will learn classical biology and concepts in molecular and cellular biology and biotechnology that are current and cutting-edge areas of study in biology and medicine. Students will be prepared for graduate study, professional training in the medical sciences and allied health fields, teaching, or employment in industry concerned with the biological sciences.

Besides the traditional classroom experience, biology majors are encouraged to consider the diverse opportunities available through field placements, internships, or semesters at other academic institutions, both domestic and abroad. Taking full advantage of these opportunities requires careful planning, and students are urged to discuss their plans and interests with their academic advisors early. It is also our goal to acquaint non-science students with the issues presented by both human biology and the physical environment.

Program Student Learning Outcomes:

PLO 1: Design and perform experiments that demonstrate the scientific method, incorporate vocabulary and college and analyze data, and write a cogent lab report.

PLO 2: Make oral presentations that demonstrate the scientific method.

PLO 3: Demonstrate connections among population biology, ecology and evolution, molecular and cellular biology and organismal biology, and among biology, chemistry and physics.

PLO 4: Make qualitative and quantitative assessments of their own data as well as that in scientific literature.

PLO 5: Create and explain illustrations of biological phenomena.

Major in Biology

The Biology curriculum is a four-year program introducing students to the major in the biological sciences as well as offering practical, hands-on experience in the laboratory. It is taught as pure science for the intellectual good of the student and the inherent importance of the subject matter. Students are trained in reflective and analytical and critical thinking and sound judgment. The scientific method builds a foundation for graduate school and professional study, e.g., medical, dental, veterinary health fields, academic research, industrial research, and secondary school teaching. The program fosters and approaches significant contributions of biological scientists to humanity. Students also make ethical connections in their studies. Their science courses are integrated with the general education requirements.

During the first year, students take chemistry and general biology courses emphasizing energetics, cellular biology, molecular biology, genetics, and evolution. The second semester emphasizes an evolutionary, ecological, and organismal approach to biology. During the first year, the student is encouraged to take IT-1001 Computer Tools to gain the basic computer and analytical skills that are needed to analyze and present data. In addition, all students are required to take the math placement exam.

Those students who do not test into calculus should see the department for guidance.

In the second year, students study organic chemistry, basic cell biology, genetics, and other 2000- or 3000-level courses. Third-year students take physics, biochemistry, and cell and molecular biology. During the last year, students take senior seminar and finish biology electives. Students are also encouraged to undertake research early on in their education. All students are required to take a comprehensive exam in their senior year, the MFAT exam as part of a senior seminar course.

The courses required for the major are BIO-1201 General Biology I- BIO-1202 General Biology II; BIO-2250 Introduction to Cell Biology, recommended in the semester following the completion of BIO-1202 General Biology II; BIO-3303 Genetics; BIO-4998 Biology Seminar (must be taken senior year); and CHE-3001 Biochemistry, which must be taken junior year. Students interested in going on to medical school are encouraged to take MAT-2203 Calculus II. Students must choose at least one course listed under each of the three areas of concentration for their advanced biology classes.

Programs

No results were found.

Courses Biology

BIO-1000 Ecology and the Environment (3 Credits)

An introduction to basic concepts in ecology and population dynamics, their relationships to resources, and pollution. This course is designed for non-science majors. Three lecture hours per week.

Fulfills General Education Requirement: NPW

Typically offered: All Sessions

BIO-1001 History of Science & Medicine In America (3 Credits)

Requisite(s): WRI-1100,AMS-1001 for students pursuing American Studies minor

This course surveys the major challenges and advancements in biology and medicine in America and the impacts of these advancements on American society. This course is designed for non-science majors. Three lecture hours per week.

Typically offered: All Sessions

BIO-1101 Introduction to Human Biology (3 Credits)

Introduces the student to the organization and function of the human body from cells to systems. Included are selected topics in the contemporary study of the human organism. This course is designed for non-science majors and fulfills one of the science prerequisites in the Childhood Education curriculum. Three lecture hours per week.

Fulfills General Education Requirement: NPW

Typically offered: All Sessions

BIO-1102 Special Topics in Biology and Psychology Marine Biology in Belize (3 Credits)

Requisite(s): BIO-2250,CHE-2102

Cross-listed with: BIO-4000, BIO-5401 and PSY-4014. This course satisfies non-major, honors non-majors and major requirements. It involves classroom as well as a week field experience that includes snorkeling in the Caribbean, additional charges will apply. The ecology of marine ecosystems (estuarine, temperature and tropical coral reef) will be explored. Honors and Bio majors have extra assignments. Students may take only one of the courses.[New Course]

Typically offered: As Needed

BIO-1103 Biotechnology and Bioethics (3 Credits)**Requisite(s):** WRI-1100

This integrated lecture and laboratory course will focus on the controversies surrounding modern biotechnology. Topics include reproductive technology, genetic engineering and stem cell research. Students will explore the techniques of modern biology through hands on experimentation in the laboratory. This course is designed for non-science majors. Lab fee.

Typically offered: All Sessions**BIO-1107 Anatomy and Physiology I (4 Credits)****Requisite(s):** BIO-1107L

Fundamental life processes as exemplified in the functioning of the human organism. Integration of structure and function in the light of homeostasis is emphasized. A systems approach is utilized with the focus on normal physiology and an introduction to pathology. Systems addressed in the first semester include cells, tissues, integument, skeletal, muscle, and nervous systems. Laboratory experiments and dissections are designed to achieve this objective. This course is designed to fulfill program requirements for non-majors, health promotion and the physical education major. Three lectures and three lab hours per week. Lab fee.

Fulfills General Education Requirement: NPW**Typically offered:** Fall Only**BIO-1108 Anatomy and Physiology II (4 Credits)****Requisite(s):** BIO-1107, BIO-1108L

A continuation of BIO 1107 with an emphasis on cardiovascular, respiratory, digestive, urinary, endocrine, and reproductive systems. Three lectures and three lab hours per week.

Fulfills General Education Requirement: NPW**Typically offered:** Spring Only**BIO-1120 Contemporary Topics in Biology (3 Credits)**

Introduction to biology issues in modern society. Studies of genetic issues, pollution and energy problems, ecology, effective drugs on the individual, and contemporary issues facing today's individual.

Typically offered: All Sessions**BIO-1140 Anatomy and Physiology for Nursing and Health Science I (4 Credits)****Requisite(s):** BIO-1140L

This course is for nursing, occupational therapy, physical therapy, and physician assistant majors. Health Promotion majors may take this course or BIO-1107. Lecture topics include animal cell structure and function, tissues, and a survey of human physiological systems. Course emphasizes cells, tissues, genetics, integument, and the musco-skeletal and nervous systems. Three lectures and three lab hours per week.

Fulfills General Education Requirement: NPW**Typically offered:** Fall Only**BIO-1141 Anatomy and Physiology for Health Science II (4 Credits)****Requisite(s):** BIO-1140, BIO-1141L

Continuation of BIO-1140. Intended for nursing, occupational therapy, physical therapy, and physician assistant majors. Health Promotion majors may take this courses of BIO-1108. Topics include: cardiovascular physiology, respiratory system, lymphatic system, respiratory physiology, and the digestive, urinary, endocrine, and reproductive systems. Three lectures and three lab hours per week.

Fulfills General Education Requirement: NPW**Typically offered:** Spring Only**BIO-1150 Forensic Biology (3 Credits)**

This lecture/laboratory is open to all students, but especially geared to criminal justice majors. This course will focus on the biological evidence and techniques used in forensic science. Topics include the study of evidence found at crime scenes such as blood, hair, DNA, and debris such as soil and sand, microbes, plants, insects, and other cells and tissues. Students learn about the knowledge gained from performing an autopsy with a focus on change in tissues following trauma and the sequential changes that occur in a body after death. Integrated lecture and lab for three hours each week. Biology majors may not use this course toward their major.

Fulfills General Education Requirement: NPW**Typically offered:** As Needed**BIO-1201 General Biology I (5 Credits)****Requisite(s):** BIO-1201L, CHE-1201, MAT-1105

Introduction to biology for majors--covers basic principles in cellular and molecular biology, genetics, development, ecology, and evolution. The organization of plants and animals from cells to integrated systems is discussed and a comparison made between plant and animal phyla. Considerable class time is devoted to a study of the chemistry of living organisms, including the origin of life, the organic constituents of organisms, the chemistry of heredity, cellular respiration, and photosynthesis. CHE-1201 and MAT-1105 are recommended prerequisites.

Fulfills General Education Requirement: NPW**Typically offered:** Fall Only**BIO-1202 General Biology II (5 Credits)****Requisite(s):** BIO-1201, CHE-1202 is a recommended co-requisite., BIO-1202L

Continuation of BIO 1201 with an emphasis on the organization of animals and integration of biological systems. Three lecture and three lab hours per week.

Typically offered: Spring Only**BIO-2200 Art & Ecology (3 Credits)****Requisite(s):** Take WRI-1000

This course will focus on integrating visual art practice and scientific methods as a means of observing, understanding, interpreting and creatively responding to human driven disturbances and the restoration of nature, focusing on the urban environment and ecologies of New York City. Students will study modern and contemporary works of art responding to ecologies of undisturbed and urban environments. Readings, discussion and lab work will complement visiting speakers, and field trips. We will also consider artistic and scientific mapping of alternate ecologies such as institutional power structures. Students will be visualize their scientific observations and creative responses through drawing, graphing, 2D mixed media, mapping modelling and sculpture. Previous art experience not required.

Fulfills General Education Requirement: NPW, HCE**Typically offered:** As Needed**BIO-2202 Comparative Anatomy (4 Credits)****Requisite(s):** BIO-1202, BIO-2202L

A comparative lecture and laboratory study of the macroscopic anatomy of typical representatives of the classes of vertebrates. Three lectures and three lab hours per week.

Typically offered: Fall Only

BIO-2203 Invertebrate Zoology (4 Credits)**Requisite(s):** BIO-1202,BIO-2203L

Major invertebrate phyla with emphasis on taxonomy, structure, physiology, and ecology; field trips to selected local areas for the collection and study of representative invertebrate forms. Laboratory dissection of representative types. Three lectures and three lab hours per week.

Typically offered: As Needed**BIO-2204 Ecology (4 Credits)****Requisite(s):** BIO-1202,BIO-2204L

An introduction to ecological principles and their application to the environment, environmental problems, numerous field trips to representative systems. Three lectures and three lab hours per week.

Typically offered: As Needed**BIO-2206 Histology (4 Credits)****Requisite(s):** BIO-1202,BIO-2206L

A study of the light and electron microscopic anatomy of the vertebrate animal. General study of cell morphology and basic tissues is followed by a systematic examination of the body's organs. Three lectures and three lab hours per week.

Typically offered: As Needed**BIO-2210 Developmental Biology (4 Credits)****Requisite(s):** BIO-1202,BIO-2210L

A study of the process of development at the cellular molecular level as a description of the stages through which an organism attains increasing complexity. In addition to lecture, students become actively involved through discussion of primary literature and laboratory. The laboratory features vertebrate and invertebrate examples of developmental processes. Three lectures and three lab hours per week.

Typically offered: Spring Only**BIO-2250 Introduction to Cell Biology (4 Credits)****Requisite(s):** Required pre-requisite: BIO-1202,Required co-requisite: BIO-2250L,Recommended co-requisite: CHE-2101

Nature of biological molecules, the structure of cells and organelles, principles of bioenergetics and their application to metabolism, and the cellular information transfer system. Laboratory work in cell biology, molecular biology, and biochemistry. Three lectures and three lab hours per week.

Typically offered: Fall Only**BIO-2280 Biological Evolution (4 Credits)****Requisite(s):** BIO-1202,BIO-2280L

Introduction to the principles of organic and molecular evolution. Topics include genetic variation, natural selection, speciation, adaptation, diversification, biogeography, molecular evolution. Three lectures and three lab hours per week.

Typically offered: As Needed**BIO-3300 Microbiology (4 Credits)****Requisite(s):** BIO-1141 or BIO-1202,BIO-3300L

A survey of the principal groups of microorganisms (bacteria, fungi, algae, protozoa, viruses, and rickettsiae) with emphasis on taxonomy, morphology, physiology, and their industrial and medical applications. Includes an intensive study of bacterial, rickettsial, chlamydial, algae, fungal, viral, and protozoan organisms of significance in the propagation of diseases. Three lectures and three lab hours per week.

Typically offered: Spring Only**BIO-3302 Botany (4 Credits)****Requisite(s):** BIO-1202,BIO-3302L

A survey of the principal groups of plants from the standpoint of their structure and development with intensive studies on the morphology and physiology of the angiospermae. Three lectures and three lab hours per week.

Typically offered: As Needed**BIO-3303 Genetics (4 Credits)****Requisite(s):** BIO-1202,BIO-3303L

An introduction to variation and heredity, the theory of the gene as developed in classical genetics, and biochemical and molecular genetics. Three lectures and three lab hours per week.

Typically offered: Spring Only**BIO-3310 Advanced Cell Biology (4 Credits)****Requisite(s):** BIO-2250,BIO-3310L,CHE-2102

Biochemical and morphological evidence underlying current models of cell structure and function. Roles of membranes in cell compartmentation, organelle structure and biogenesis, vesicle transport, secretion, cytoskeleton, motility, signaling, mitosis, and cell cycle regulation. Distinctive characteristics of differentiated mammalian cells. Laboratory experiences introduce classical and contemporary methods of cell study. Three lectures and three lab hours per week.

Typically offered: Fall Only**BIO-3320 Molecular Biology (4 Credits)****Requisite(s):** BIO-1202,BIO-3320L,CHE-2102

A survey of nucleic acid structure, function, and regulation in prokaryotic and eukaryotic organisms, emphasizing modern techniques and their uses in answering questions at the molecular level. Laboratory exercises allow students to gain experience in molecular biological research. Three lectures and three lab hours per week.

Typically offered: Spring Only**BIO-3350 Physiology (4 Credits)****Requisite(s):** BIO-1202,BIO-3350L,CHE-2102

A study of the functions of vertebrate organs and organ systems, and the homeostatic mechanisms that underlie them. Included are discussions of the cellular and physiochemical bases of homeostasis. Three lectures and three lab hours per week.

Typically offered: Fall Only**BIO-3360 Human Pathophysiology (4 Credits)****Requisite(s):** BIO-3310 Cell Biology

Pathophysiology is the study of the human body's reaction to adverse conditions. This course will elucidate the basic changes that occur in disease states such as cellular injury, inflammation and hemodynamic changes as well as the underlying mechanisms of genetic disease, environmental disease and cancer. Disease symptoms, treatment and diagnosis will also be introduced. Students will develop critical thinking skills through engagement in problem-based learning through the use of case studies.

Typically offered: Fall Only**BIO-4000 Special Topics in Biology: Marine Biology in Belize (3 Credits)****Requisite(s):** BIO-2250,CHE-2102

Cross-listed with: BIO-1102, BIO-5401 and PSY-4014. Discussion and analysis of problems in biology that are not covered in regular course work. The specific content of the course will remain flexible in response to student and departmental interest.

Typically offered: As Needed

BIO-4001 Marine Biology in Honduras (3 Credits)**Requisite(s):** Take BIO-2250 CHE-2102;

Marine Biology in Honduras. Course requires travel to Honduras.. Please contact Dr. Nolan, at KNolan@stfranciscollege.edu or (718) 489-5439 for additional information.

Typically offered: As Needed**BIO-4002 Special Topics in Biology: Biotechnology (3 Credits)****Requisite(s):** Take BIO-2250 CHE-2102;

Course will include topics such as Genomics, Proteomics, and Systems Biology.

Typically offered: As Needed**BIO-4003 Special Topics in Biology: Honoring the Parks (3 Credits)****Requisite(s):** Take BIO-2250 CHE-2102;

This 3 credit course will focus on the ecology, sustainability, and history of national and local parks in the NYC area. These parks include the Fire Island National Seashore, Jamaica Bay Wildlife Refuge, Ellis Island, the Tenement Museum, and the new Brooklyn Bridge Park. We will also go on a Oyster Schooner in LI. There is a fee of \$550 that will cover camping in Fire Island, ferries, LIRR, and admissions to such locales as the Tenement Museum and the Oyster Schooner. It will also cover food and dorm (including camping on June 5) from June 3-10. You will read and write a book report about diseases in early NYC immigrants and keep a journal. You must register for this course by filling out a sheet signed by Dr. Nolan. Please e-mail her if interested: knolan@sfc.edu

Typically offered: As Needed**BIO-4004 Seminar: Marine Mammal Cognition (3 Credits)**

This course is designed with two main components: A lecture component on campus at SFC and an experiential learning component that includes travel to Santa Cruz California. The course revolves around marine mammal cognition but general aspects of cognitive psychology. Topics covered will include basic experimental design, sensation/perception, intelligence and consciousness, logic, concept formation, language"" studies with marine mammal species, and ethics. Students will learn about and observe data collection sessions with captive, trained seals, sea lions, sea otters and dolphins. The ecology of sea lion habitat as well as marine mammal physiology will also be explored.

Typically offered: As Needed**BIO-4005 Topic: Parasitology (4 Credits)****Requisite(s):** BIO-4005L, BIO-2250 and CHE-2102

Parasitology is the study of how organisms can take over and harm another organism. Sometimes it can be lethal. We will study examples of protozoa, worms, and insects that parasitize both plants and animals. Lecture will focus on the mechanisms of how parasites infect hosts, and life cycles of these parasites. If there are treatments or drugs available we will learn how these work. Lab will focus on parasites of plants and animals, especially live parasites of dead fish. We will also study preserved slides and dissect whole preserved specimens, as well as conduct local field trips to a vet's office and research labs.

Typically offered: As Needed**BIO-4403 Endocrinology (3 Credits)****Requisite(s):** BIO-2250

A survey of the cells and organs of internal secretion and their products. The endocrine secretions and their interactions will be considered as will mechanism of target signaling. Three lecture hours per week.

Typically offered: As Needed**BIO-4405 Immunology (4 Credits)****Requisite(s):** BIO-2250, BIO-4405L

This course is a study of the cell biology, biochemistry, molecular biology, and histology of the human and mouse immune systems. Three lectures and three lab hours per week.

Typically offered: As Needed**BIO-4409 Neurobiology (4 Credits)****Requisite(s):** BIO-2250, BIO-4409L

A study of nervous system organization, function, and development. Major concepts in neurobiology including impulse conduction, synaptic transmissions, sensory processing, motor function, and memory. Three lectures and three lab hours per week.

Typically offered: As Needed**BIO-4420 Virology (4 Credits)****Requisite(s):** BIO-2250, BIO-4420L, CHE-2102

Provides an introduction to bacterial, animal, and plant virology. General methodology or virus research, virus structure, biochemistry of viral replication, and general features of virus-host cell interaction. Laboratory work includes basic experimental techniques applied to selected bacteriophages and animal viruses. Two lectures and three lab hours per week.

Typically offered: As Needed**BIO-4450 Pharmacology (3 Credits)****Requisite(s):** BIO-1202 or BIO-1141

A study of drugs and drug actions, including pharmacokinetics and pharmacodynamics. This course reviews the mechanism of action of various classes of drugs. Three lectures per week.

Typically offered: As Needed**BIO-4480 Bioinformatics (4 Credits)****Requisite(s):** BIO-2250, BIO-4480L, CHE-2102

An introduction to the theory, strategies, and practice of data management and analysis in molecular biology. including DNA and protein sequence analysis, biological databases, genomic mapping, analysis of gene expression. Three lectures and three lab hours per week.

Typically offered: As Needed**BIO-4990 Internship in Biology (1-4 Credits)**

Internship in Biological sciences based on student/mentor agreement. Internships must be approved by the department Chairperson.

Typically offered: As Needed**BIO-4995 Independent Study in Biology (1-4 Credits)**

Independent study under the direction of a faculty member. For Biology majors only.

Typically offered: All Sessions**BIO-4998 Biology Seminar (1 Credit)****Requisite(s):** Senior standing

Discussion of topics reflecting research and current problems in the biological sciences in a seminar format. Specific areas of discussion vary from semester to semester. Topics are announced in advance. A written paper and oral presentation are required. For Biology majors with senior standing only.

Typically offered: Fall Only

BIO-5101 History of Medicine in America (3 Credits)

This course surveys the major challenges and advancements in biology and medicine in America from the early 17th century to present day and the impact of these advancements on American society. The roles of race, religion, socioeconomic class, gender and sexual orientation in determining access to health care and treatment protocols will be explored and analyzed.

Typically offered: All Sessions

BIO-5310 "Honors Seminar: Ethical, Legal & Social Implications of the Human Genome Project" (3 Credits)

Cross-listed with: SOC-5402. The Human Genome was sequenced completely in 2002. This is a database that includes all of our genetic code. Not only did this research revolutionize science, it also inevitably impacted numerous spheres of our social life and continues to do so. In this course, we will learn about the human genome and the possibilities this knowledge generates for social consideration and social change. We will answer the following questions. Why do we want to study our genes? Who should have access to my genome? Who owns the genome? Should we be changing our genes? The areas of concern are: fairness in the use of genetic information; privacy and confidentiality; social consequences and stigmatization; reproductive issues; clinical issues uncertainties; ethical and legal concerns; conceptual and philosophical implications; health and environmental issues and the commercialization of gene products.

Fulfills General Education Requirement: NPW, SEH

Typically offered: Fall Only

BIO-5401 Special Topics in Biology: Marine Biology in Belize (3 Credits)

Cross-listed with: BIO-1102, BIO-4000 and PSY-4014. Discussion and analysis of problems in biology that are not covered in regular course work. The specific content of the course will remain flexible in response to student and departmental interest. Course requires travel. Contact Dr. Nolan, Chairperson-BIO at knolan@sfc.edu

Typically offered: As Needed

BIO-5402 Marine Biology in Honduras (3 Credits)

Requisite(s): Take BIO-2250 CHE-2102;

Marine Biology in Honduras. Course requires travel to Honduras.. Please contact Dr. Nolan, at KNolan@stfranciscollege.edu or (718) 489-5439 for additional information.

Typically offered: As Needed

BIO-5403 Special Topics in Biology: Honoring the Parks (3 Credits)

This course will focus on the ecology, sustainability, and history of national and local parks in the NYC area. Parks are at the core of what makes our area unique and exciting, providing natural oases as well as critical reflections on our past. This course will be hands-on and exploratory: We will visit parks and experience them for ourselves, while also digging into their deeper role in shaping our city and culture. The parks we visit and learn about may include Jamaica Bay Wildlife Refuge, Ellis Island, the American Museum of Natural History, the Tenement Museum, and Brooklyn Bridge Park, among others.

Typically offered: As Needed

BIO-5404 "Special Topics in Biology: Hunger- Biotechnology, Conservation" (3 Credits)

Approximately 1 billion people around the world go hungry every day, with roughly an equal number of people lacking sufficient access to potable water. However, the problem is not insufficient world resources; the amount of food refuse produced yearly is roughly equivalent to the amount of food required to feed the hungry for one year. Called the world's greatest solvable problem," there are many potential solutions to hunger such as advancements in agricultural biotechnology as well as increased efforts towards the development of sustainable communities and environmental conservation. Each solution comes with its own benefits and limitations. This course will explore hunger both worldwide and within the US and includes a service learning as well as an immersion experience on a sustainable working farm to fortify concepts and build global citizenship.

Typically offered: As Needed

BIO-5405 "Special Topics in Biodesign Biotechnology, Conservation" (3 Credits)

Everyday objects are designed for human use, yet many contribute to chemical and plastic pollution, carry a high carbon footprint, and may live in landfills for centuries after their use is completed. What if we could grow a house, or replace toxic processes with harmless ones? In considering how to minimize our impact on the planet, and what a grown" future might look like, we will speculate, learn, and critique through the interdisciplinary practices of Biodesign. In this seminar, participants will take part in the Biodesign Challenge, which links students with a team of expert consultants, access to extensive resources, and participation in the biodesign community through webinars and other events throughout the semester. Through speculative and creative thinking, research and innovation, teams of students will envision, develop, and prototype a biodesign project addressing a real problem with an achievable design Together the honors class will analyze each team's proposal select one to represent SFC at the Biodesign Challenge summit in June 2022.

Typically offered: As Needed

Health Science

HS-1001 Health Issues (2 Credits)

Provides an overview of select current issues in the area of health. Data necessary for making informed decisions will be presented. Personal and societal attitudes, beliefs, and values implicit in the decision-making process will be discussed as they relate to health behavior and, consequently, health outcomes. 2 CREDITS. EVERY SEMESTER. DAY. EVENING. NOTE This course does not fulfill the 2-credit core requirement for HCM majors.

Fulfills General Education Requirement: FH2

Typically offered: All Sessions

HS-1201 Community Health (3 Credits)

An introductory course in community health issues, including basic concepts of community health; overview of government, foundations, private agencies, and voluntary health organizations; health care reform issues; the nine different areas of community health programming, such as chronic and communicable disease control measures, health promotion, and health education.

Fulfills General Education Requirement: FH2

Typically offered: Fall Only

HS-1206 Safety and First Aid (3 Credits)

A survey of home, school, and community programs in safety and first aid. Methods of safety research, Haddon's matrix, rating calculation, identification of accident types, methods to control causation and responsibilities of individuals, and the community for safe living. Procedures for temporary care of victims of accidents and sudden illness. Successful completion of this course leads to American Red Cross Certification in Standard First Aid and Personal Safety (includes Adult CPR).

Fulfills General Education Requirement: FH2

Typically offered: All Sessions

HS-1207 Nutrition (3 Credits)

An introductory course in human nutrition that includes its importance to optimum physical and emotional health. The nutrients—carbohydrates, proteins, lipids, water, vitamins, and minerals—are studied as to their composition, usage in the human body, where found in foods, how digested and utilized in the human body. Body requirements, patterns of diet for various groups, and specific conditions, as well as social and cultural influences on food selection are studied.

Fulfills General Education Requirement: FH2

Typically offered: All Sessions

HS-1302 Consumer Health (3 Credits)

Consumer problems are viewed in terms of economic, sociological, psychological, and biological consequences to the individual and the community; consumer attitudes and behavior regarding needs, desires, and response to advertising, incorrect labeling, health insurance, life insurance, Medicare, over-the-counter drugs, cosmetics, health fads and quackery, consumer protection agencies, evaluation of products, and other topics of interest to the consumer.

Fulfills General Education Requirement: FH2

Typically offered: Fall Only

HS-1305 Coping with Stress (3 Credits)

This interdisciplinary course explores theories, research, and techniques related to the impact and management of stress. Emphasis upon the application of stress reduction techniques through class exercises in progressive muscle relaxation, autogenic and imagery training, systematic desensitization, assertiveness training, time management, and problem-solving.

Fulfills General Education Requirement: FH2

Typically offered: All Sessions

HS-1306 Healing and Wholeness (3 Credits)

Exploring healing and wholeness from many perspectives, this course is an overview of healing from the traditions of the shaman to contemporary faith healers, from ancient roots through modern medicine—Chinese medicine, Ayurvedic medicine, and homeopathy as well as alternative medicines and holistic therapies and ways to self-healing through dream journals and meditation.

Fulfills General Education Requirement: FH2

Typically offered: Spring Only

HS-1403 Women's Health Issues (3 Credits)

Accurate information about their own health needs enables women to become more active participants in their own health care. Issues include physicians attitudes toward women, knowing ones own body, contraception, pregnancy, rape, family violence, hysterectomy and mastectomy, mental health issues, and patients rights in the health system. 3 credits. Fall; evening.

Fulfills General Education Requirement: FH2

Typically offered: Fall Only

HS-1419 "Death, Loss, and Grief" (3 Credits)

Investigates the processes of death, loss, and grief while focusing upon the manner in which patterns of dealing with death are interwoven with patterns of living. The family, religion, medicine, economy, law, and community are considered. Specific issues addressed include the moral and legal aspects of euthanasia and the right to die; the hospital, hospice, and home as alternative sites for dying; definitions of life and death; religious and cultural burial customs; and the bereavement process. The implications of these issues are explored for health care practitioners and other individuals in the helping professions as well as for people in their daily lives. 3 credits. Spring; evening.

Fulfills General Education Requirement: FH2

Typically offered: Spring Only

HS-1501 Introduction to Public Health (3 Credits)

An introductory course in the study of public health the content of course will focus on basic material related to the five public health foundation: Health Services, Epidemiology, Social/Behavioral, Science, Environmental Health and Biostatistics. Discussion will include the biomedical basis of public health, some historical developments of public health, and the role of health ethics especially in research and future challenges. The course will also present an introduction to the cross-cutting areas of public health including: communication, and informatics, diversity and culture, leadership, public health biology, professionalism, program planning, and systems thinking.

Fulfills General Education Requirement: FH2

Typically offered: Fall Only

HS-2150 Methods in Teaching Health (3 Credits)

Development and application of health education methods to trainers who will teach disease prevention and health promotion to diverse audiences. Focus on developing health literacy across the lifespan for each constituency. 3 credits. Fall semester; day.

Fulfills General Education Requirement: FH2

Typically offered: Fall Only

HS-2151 Theory & Research in Health Promotion (3 Credits)

Review of empirical research including basic interpretation of elementary statistical tests and techniques. Literature review of behavior maintenance, adoption, change and management theories drawn from the public health and social sciences. Prerequisite: HS 2150. 3 credits. Spring semester; day

Fulfills General Education Requirement: FH2

Typically offered: Spring Only

HS-2240 Introduction to Environmental Public Health (3 Credits)

This introductory course will examine the root causes and the scientific understanding of the major environmental health problems associated with urban communities. The course will examine key historical trends and look at current trends and new emerging issues facing densely-populated urban cities. Topics covered include an examination of both indoor and outdoor environmental pollutants and biological hazards related to food, water, sanitation, air quality, noise, radiation, and occupational or indoor hazards. Specific pollutants of interest will be discussed, including asbestos, heavy metals, pesticides, PCBs, radiation, mold, tobacco smoke and other allergens with relevance to their impact on public health. Environmental disasters, either naturally occurring or artificially induced, i.e., as acts of terrorism, will also be examined as a potential vehicle of disease and threat to public health. The course will also look at current trends in novel urban design, construction, and urban planning (so-called green construction") as a means of mitigating environmental hazards and promoting public health. The course will conclude with an examination of the scientific basis for policy decisions and regulations that aim to control environmental hazards and lessen their impact on the health of urban communities.

Fulfills General Education Requirement: FH2

Typically offered: Fall Only

HS-2406 Epidemiology (3 Credits)

An introductory study of the factors influencing the nature and causes of communicable diseases and chronic conditions in human populations. The study of principles, practices, theories, and methods related to the control and prevention of disease prepares the student for practical application of statistics. Topics include the natural history of diseases in various population groups, environmental and biological factors influencing the emergence of disease, and the investigation of a community health problem.

Fulfills General Education Requirement: FH2

Typically offered: Fall Only

HS-3250 Designing Health Promotional Programs (3 Credits)

Requisite(s): HS-2151, Take 2 courses;, From Subject HS;
Students are guided through planning and designing a health promotion program in a content area, setting, and population of their own choice.

Typically offered: Fall Only

HS-3251 Implementation and Evaluation of Health Promotion Programs (3 Credits)

Students are guided through program acceptance, marketing implementation, and evaluation programs. Students will organize and implement a campus-wide health fair and evaluate it.

Typically offered: Spring Only

HS-4000 Special Topic: Obesity - an Epidemic Marine Biology in Belize (3 Credits)

In this course, students will learn about the prevalence of and rise of obesity in our society. Causes of obesity and its effect on health will be explored. Socioeconomic factors such as cheap high calorie food, and increasing urbanization, as well as genetics, cultural differences in perception of food, and its preparation and consumption will be examined. The biology of the effects of weight on organ systems such as the heart and circulation and diabetes will be considered. Models of successful solutions to this problem will be presented, and students will be encouraged to formulate their own solutions.

Typically offered: As Needed

HS-4350 Intro to Research and Bioethics in HP (3 Credits)

Requisite(s): HPSCI majors: are required to take HS-3251 as a prerequisite, HCMGT majors: no prerequisite required.

Provides a dual introduction to concepts and skills that will culminate in the completion of a senior thesis in the seminar. This course introduces a variety of ethical issues related to health. Research skills from topic selection and narrowing through draft writing will be practiced.

Prerequisite: HS 3251. 3 credits, Fall semester, day, beginning Fall 2009.

Fulfills General Education Requirement: FH2

Typically offered: Fall Only

HS-4990 Internship in Allied Health I (1-3 Credits)

Requisite(s): 15 HS credits and permission of chairperson.

Observation and supervised experience in a community setting giving practical application to previously studied concepts and theories related to health promotion or health administration. Minimum of 135 hours in the field placement plus required on-campus meetings as scheduled by the instructor. May be taken for two semesters with the permission of the Chairperson only. **Prerequisites:** 15 HS credits. 3 credits per semester. Every semester.

Typically offered: On Demand

HS-4991 Internship in Allied Health II (3 Credits)

Requisite(s): 15 HS credits and permission of chairperson.

Observation and supervised experience in a community setting giving practical application to previously studied concepts and theories related to health promotion or health administration. Minimum of 135 hours in the field placement plus required on-campus meetings as scheduled by the instructor. May be taken for two semesters with the permission of the Chairperson only. **Prerequisites:** 15 HS credits. 3 credits per semester. Every semester.

Typically offered: On Demand

HS-4995 Independent Study in Health Science Promotion (1-3 Credits)

Requisite(s): 15 HS credits with a B average;, permission of chairperson and proposal are, required.

Independent investigation into a selected health science topic under the direction of a department faculty member. Usually culminates in a major paper. Requires a written proposal accepted by the Chairperson prior to registration. **Prerequisites:** Approval of the Chairperson and 15 HS credits with a B average. 3 credits per semester. Every semester; day and evening.

Typically offered: On Demand

HS-4996 Independent Study in Health Science II (3 Credits)

Requisite(s): HS-600

Same as HS 600; students may elect a second semester as HS 601.

Typically offered: On Demand

HS-4998 Seminar in Health Science (3 Credits)

Requisite(s): Senior Standing, Co-req HS-4350;

Integrating theory and practical experiences in health promotion, this seminar allows in-depth exploration of issues of importance to the field. Completion of a thesis paper and oral presentation encompass the major work in this course.

Typically offered: Fall Only

HS-5420 Healing in a Cultural Context (3 Credits)

This course is an interdisciplinary exploration of the interface of medical sciences and spiritual healing arts. It begins with very early attempts of human beings to explain illness and death and to intervene, then traces that process to the present. The course investigates medical, surgical, spiritual, and psychological interventions within their cultural contexts.

Topics include Chinese medicine, Native American healing, and the phenomenon of miracle cures. Open to Honors students only.

Typically offered: As Needed

Faculty

Chairperson

Dr. Alison Dell

Professors

Burdowski

Corrigan

Lipson

Nolan

Assistant Professor

Dell

Herstoff

Kita

Serrano de Sousa Frias

Tessler

Director of Laboratory

Kovenat

Adjuncts

Batchu

Congo

Ellington

Gooden

Hanson

Lee

Muir

Rivera

Samms

Shashidharan

Sylvester