

Biology (BIOL)

BIOL 110 BIOLOGICAL INQUIRY (4)

Lecture, 3 hours. Laboratory, 3 hours. A factual and conceptual exploration of the living world through presentataion, student inquiry and laboratory exercises. Topics include the bases of life; organization of living systems, from molecules to ecosystems, and their interactions; genetics, evolution and ecology. Satisfies GE, category B2 (Biological Sciences) and the GE laboratory science requirement. Not applicable to the biology major.

BIOL 115 INTRODUCTION TO BIOLOGY (3)

Lecture, 3 hours. The unifying concepts of biology. Topics include the chemical and physical basis of life; cellular structure and function; molecular and Mendelian genetics; reproduction, development, structure and function of representative plants and animals; and evolution and ecology. Satisfies GE, category B2 (Biological Sciences). Not applicable to the biology major.

BIOL 121 DIVERSITY, STRUCTURE AND FUNCTION (4)

Lecture, 3 hours. Laboratory, 3 hours. First in three-semester series required for biology majors. Introduces the extraordinary diversity of life and evolutionary relationships between groups of organisms, and compares body plans. For biology majors, satisfies GE, categories B2 or B3.

BIOL 122 GENETICS, EVOLUTION AND ECOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Second in three-semester series required for biology majors. Introduces mechanism of inheritance, evolution, and ecology. Recent advances in understanding processes underlying ecological and evolutionary relationships will be emphasized. For biology majors, satisfies GE, categories B2 or B3. May be taken before BIOL 121.

BIOL 123 MOLECULAR AND CELL BIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Third in three-semester series required for biology majors. Introduction to cell and molecular biology, with emphasis on molecular processes, cellular physiology, and regulatory mechanisms. For biology majors, satisfies GE, categories B2 or B3. Prerequisites: BIOL 121 and 122 or consent of instructor and CHEM 115AB. Concurrent or prior enrollment in CHEM 335A recommended.

BIOL 220 HUMAN ANATOMY (4)

Lecture, 3 hours. Laboratory, 3 hours. Survey of the body systems. Designed for pursuing careers in the allied health professions. Satisfies GE, category B3 and GE laboratory requirement. Prerequisite: BIOL 110 or 115, or 121/122.

BIOL 224 HUMAN PHYSIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. An integrated examination of the human body as an efficient system maintained by a complex of interacting, homeostatic mechanisms. Includes fundamental principles of function of major organ systems. Designed for those pursuing careers in the allied health professions. Satisfies GE, category B3 and GE laboratory requirement. Prerequisites: BIOL 110 or 115, or 121/122 and CHEM 115AB or 105.

BIOL 240 GENERAL MICROBIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. An introduction to the organization and characteristics of microorganisms, including bacteria, fungi, protists and viruses. Topics include their role in agriculture, industry and disease processes. Prerequisites: BIOL 110 or 115, and CHEM 115AB or 105.

BIOL 240 GENERAL MICROBIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. An introduction to the organization and characteristics of microorganisms, including bacteria, fungi, protists and viruses. Topics include their role in agriculture, industry and disease processes. Prerequisites: BIOL 110 or 115, and CHEM 115AB or 105.

BIOL 307 HUMAN NUTRITION (3)

Lecture, 3 hours. Concepts of modern nutrition, including some discussion of principal nutritional problems and modern food processing methods. Prerequisites: BIOL 110, 115 or BIOL 121/122 and one course in beginning chemistry.

BIOL 308 ENVIRONMENTAL TOXICOLOGY (3)

Lecture, 3 hours. Information needed to formulate a philosophy of chemical use: the nature of the interaction of toxicants and living organisms; categories of toxicological activity; toxicological evaluation and environmental monitoring; and governmental regulations and procedures. Satisfies GE, category B3 (specific Emphasis in Natural Sciences). Prerequisite: BIOL 110, 115 or 121/122.

BIOL 309 BIOLOGY OF CANCER (3)

Lecture, 3 hours. Biological, clinical, environmental and psychosocial aspects of cancer explored through the perspectives of medical researchers, physicians, patients and health educators. This lecture series is intended for students of all majors, for those in the health professions and for the general public. It is designed so that everyone (regardless of scientific background) will benefit. Satisfies GE, category B3 (Specific Emphasis in Natural Sciences). Prerequisite: BIOL 110, 115 or 121/122.

BIOL 311 SEXUALLY TRANSMITTED DISEASES (3)

Lecture, 3 hours. Biological, environmental, societal and psychosocial aspects of sexually transmitted diseases. Satisfies GE, category B3 (Specific Emphasis in Natural Sciences). Prerequisite: BIOL 110, 115 or 121/122.

BIOL 312 BIOLOGICAL OCEANOGRAPHY (3)

Lecture, 3 hours. An introduction to the world's oceans with emphasis on the way in which their physical properties support life. Satisfies GE, category B3. Prerequisite: BIOL 110, 115 or 121/122.

BIOL 314 FIELD BIOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. A course emphasizing plant and animal communities of Northern California. Satisfies GE, category B3 (Specific Emphasis in Natural Sciences) and GE laboratory requirement. Prerequisite: BIOL 115 or 121/122.

BIOL 315 PLANTS AND CIVILIZATION (3)

Lecture, 3 hours. Field trips. Historical and evolutionary interrelationships between humans and domesticated plants, including the origins of agriculture and its development. Satisfies GE, category B3. Prerequisite: BIOL 110, 115 or 121/122.

BIOL 318 BIOLOGY OF AGING (3)

Lecture, 3 hours. Examines the biological processes occurring in a cumulative fashion in the course of human senescence, including the medical and social consequences. Satisfies GE, category E. Prerequisite: BIOL 110, 115 or 123.

BIOL 322 INVERTEBRATE BIOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. Exploration of the systematics, functional morphology, behavior, and ecology of invertebrate animals. Prerequisite: BIOL 121 and 122.

BIOL 323 ENTOMOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. A comprehensive foundation in the biology of insects, with emphasis on ecology, behavior, evolution, and systematics. Emphasis on the diagnostic features of insects and their major orders. Prerequisites: BIOL 121 and 122.

BIOL 327 VERTEBRATE BIOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. Exploration of the systematics, behavioral ecology, biogeography, evolution, and conservation biology of fish, amphibians, reptiles, birds, and mammals. At least one weekend field trip. Prerequisites: BIOL 121 and 122.

BIOL 328 VERTEBRATE EVOLUTIONARY MORPHOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Trends in the evolution of structure and function in the vertebrates. This course focuses on morphological adaptations at the organ system level that have enabled vertebrates to diversify and succeed in a wide range of habitats and environments. Prerequisites: BIOL 121 and 122.

BIOL 329 PLANT BIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. An overview of plant biology, with focus on structure, function, reproduction, and evolution. Emphasis is on flowering plants, but a survey of all plant and plant-like organisms, both modern and extinct, is included. Prerequisites: BIOL 121 and 122.

BIOL 330 PLANT TAXONOMY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. An introduction to the principles and practices of plant taxonomy, including approaches to classification, data analysis, and a survey of vascular plant families in the California flora. A minimum of two Saturday field trips is required. Prerequisites: BIOL 121 and 122.

BIOL 331 AQUATIC BOTANY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. An overview of the ecology, evolution, physiology, conservation and practical uses of marine, estuarine, and freshwater plants and algae. Required field trips may be scheduled outside of scheduled class time. Prerequisites: BIOL 121 and 122.

BIOL 333 ECOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. A current overview of this field, with in-depth coverage of ecology at the population, community, and ecosystem level. Emphasis on diverse taxa and habitats, hypothesis testing, and data collection and analysis. Prerequisites: BIOL 121 and 122 and MATH 165.

BIOL 335 MARINE ECOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. An overview of current topics in marine ecology and conservation with emphasis on ecology of coastal ecosystems. Extensive focus on field and laboratory research projects. Includes experimental design, data analysis, and presentation. At least three 5-hour field trips outside of scheduled class time. Prerequisites: BIOL 121 and 122 and MATH 165.

BIOL 337 BEHAVIORAL ECOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. Examines how the behavior of animals functions to optimize their fitness. Explores such topics as foraging, altruism, breeding systems, sexual selection, deceit, communication systems, and aggression with emphasis on techniques for formulating and testing hypotheses. Prerequisites: BIOL 121 and 122.

BIOL 338 ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Examines microbial ecology and diversity along with biotechnological applications of microbes in agriculture, wastewater treatment, bioremediation, and biofuel production. Satisfies the ENSP Hazardous Materials Management and Water Quality Technology core requirement. Prerequisites: BIOL 121/122 and CHEM 115AB, or consent of instructor.

BIOL 339 MYCOLOGY (4)

Lecture, 2 hours. Laboratory and field, 6 hours. Principles and techniques for studying fungi and allied organisms, including the development of laboratory culture, identification and field work on terrestrial and aquatic fungi. Prerequisites: BIOL 121 and 122.

BIOL 340 GENERAL BACTERIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. An introduction to prokaryotes covering their cell structure, metabolic diversity, interactions with other organisms, and pivotal roles in biogeochemical cycling. Laboratory projects develop skills essential for studies of bacteria. Laboratory in two 1.5 hour sessions per week. Prerequisites: BIOL 123 and CHEM 335A.

BIOL 341 EVOLUTION (4)

Lecture, 3 hours. Laboratory and field, 3 hours. A broad examination of the patterns and processes involved in the evolution of life on earth. Includes inquiry into the origin of life, microevolutionary processes, systematics, and large-scale evolutionary history. Prerequisite: BIOL 123.

BIOL 342 MOLECULAR GENETICS (4)

Lecture, 3 hours. Laboratory, 3 hours. Gene structure and function at the level of DNA, RNA and protein interactions. Emphasis on molecular analytical techniques used for genetic analysis in a diversity of prokaryotic and eukaryotic organisms. Prerequisites: BIOL 123 and CHEM 335A.

BIOL 343 MOLECULAR MICROBIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. The biochemical and molecular processes of pathogenic organisms within the four major groups of microbes: bacteria, parasites, fungi, and viruses. Prerequisites: BIOL 123 and CHEM 335A.

BIOL 344 CELL BIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. An introduction to structural and molecular organization of eukaryotic cells and tissues. Specific topics will represent the central core of cell biology and are concerned mainly with those properties that are common to most eukaryotic cells. Prerequisites: BIOL 123 and CHEM 335A.

BIOL 346 INTRODUCTION TO BIOINFORMATICS (4)

3 Lecture, 2 hours. Laboratory, 6 hours. Principles and techniques of accessing E260biomolecular databases and analyzing retrieved sequences of nucleic acids and proteins. Statistical tools, sequence alignments, pattern mapping, structural modeling, and phylogenetics will be explored. Examples will be selected from plants, animals, fungi, protists, bacteria and viruses. Laboratory will involve computer exercises, projects, discussions and student presentations. Prerequisite: BIOL 123 or consent of instructor.

BIOL 347 ENVIRONMENTAL PHYSIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Course examines the adaptations and physiological responses that allow animals to live under widely different environmental conditions. Laboratory and field exercises will utilize modern techniques of physiological measurement to examine adaptive strategies among and between species in different environmental conditions. Prerequisite: BIOL 123.

BIOL 348 PLANT PHYSIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Concepts and principles of plant function. The following areas are investigated in detail: photosynthesis, water relations, mineral nutrition, and plant growth regulation. Prerequisite: BIOL 123.

BIOL 349 ANIMAL PHYSIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Principles and concepts of animal function, with emphasis on cellular and biochemical/molecular bases of physiological activities in tissues and organ systems, environmental adaptations, and comparative homeostatic mechanism. Prerequisite: BIOL 123.

BIOL 382 PARASITOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. The biology, epidemiology, ecology, pathogenesis, diagnosis, and prevention of parasitic diseases affecting animals and humans. Students will learn about the host-parasite relationship in the context of how social, economic, and ecological factors contribute to parasitic infections and disease. Labs involve microscopic identification of prepared and live specimens. Prerequisite: BIOL 347 or BIOL 349.

BIOL 383 VIROLOGY (4)

Lecture, 3 hours. Discussion, 1 hour. Viruses: their characteristics, classification, genetics, and host-parasite interactions, including methods of disease prevention, control, and applications in biotechnology. Prerequisites: BIOL 123 and CHEM 335A.

BIOL 385 CONTEMP ISSUES IN BIOLOGY (3)

Lecture, 3 hours. Selected topics related to the quality of life and the search for perspectives on the future. May be repeated with different topics. Satisfies GE, category B3 (Specific Emphasis in Natural Sciences). Prerequisite: BIOL 110, 115 or 121/122.

BIOL 390 BIOLOGY COLLOQUIUM (1)

Lecture, 1 hour. Presentations by visiting scholars, departmental faculty, and master's degree candidates on current research and contemporary issues in biology. All majors and graduate students are encouraged to enroll each semester, although no more than 2 units are applicable to the biology major (BIOL 390) or MA degree (BIOL 590).

BIOL 398 NON-MAJORS TEACHING PRACTICUM (1-3)

Application of prior knowledge towards supervised instructional experience in biology courses. Intended for professional growth and lifelong learning for non-major undergraduates in biology. May be repeated for up to a total of 4 units; only graded units may apply to the biology minor. Prerequisites: prior completion of the course for which instructional assistance is to be provided, with a grade of B or better, consent of the instructor, and an approved petition to enroll.

BIOL 426 NEUROBIOLOGY AND NEURAL NETWORKS (4)

Lecture, 2 hours. Laboratory, 3 hours. Theoretical and experimental approach to studying basic concepts of electrophysiology, neuronal electrical activity and neuronal circuitry in invertebrate and vertebrate animals. Lab exercises include E420 studies of neuronal networks in crayfish, horseshoe crabs, and sea hares. Prerequisites: BIOL 115 or BIOL 121/122 and PHYS 210B or PHYS 214; or consent of instructor.

BIOL 460 ICTHYOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. At least one weekend field trip. Morphology, classification, distribution, ecology, and evolutionary history of fishes. Prerequisite: BIOL 327 or 328.

BIOL 463 HERPETOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. Classification, functional and evolutionary morphology, environmental physiology, and ecology of reptiles and amphibians. Includes at least one weekend field trip. Prerequisite: BIOL 327 or 328.

BIOL 465 ORNITHOLOGY (4)

Lecture, 2 hours. Laboratory and field, 6 hours. Avian classification, anatomy and life histories, including such topics as molts, distribution, migration and breeding habits. Prerequisite: BIOL 327 or 328.

BIOL 468 MAMMALOLOGY (4)

Lecture, 3 hours. Laboratory and field, 3 hours. Characteristics, classification, physiological ecology, habitats, behavior, reproduction, distribution and evolution of mammals. Prerequisite: BIOL 327 or 328.

BIOL 472 DEVELOPMENTAL BIOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Patterns of animal development. This course is designed to provide students with a comprehensive appreciation of the developmental process, presenting detailed descriptions of developmental mechanism along with a conceptual framework for understanding how development occurs. Prerequisite: BIOL 342, 343, 344, or 383.

BIOL 480 IMMUNOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. The component elements of the immune response; antigens and antibodies; theories of antibody synthesis, cellular reactions, hypersensitivity; immunogenetics. Prerequisites: one core course from each of the following U.D. core areas: Physiology, Molecular and Cell Biology.

BIOL 481 MEDICAL MICROBIOLOGY (5)

Lecture, 3 hours. Laboratory, 6 hours. Mechanisms of infectious diseases caused by bacteria and fungi, host-parasite interactions in the disease process, therapeutic modalities and infection control. Laboratory techniques for the cultivation, isolation, and identification of pathogenic bacteria and fungi. Emphasis is on methods and procedures currently utilized in diagnostic laboratories. Prerequisite: BIOL 343 or BIOL 340.

BIOL 484 HEMATOLOGY (4)

Lecture, 3 hours. Laboratory, 3 hours. Blood: the normal and abnormal structure and function of red cells, white cells, and hemostatic mechanisms. Prerequisite: BIOL 347 or BIOL 349.

BIOL 485 BIOMETRY (4)

Lecture, 3 hours. Laboratory, 3 hours. Introduces students to quantitative analysis of biological data. The nature of biological data, principles of experimental design, and essential statistical tools used by biologists to analyze their results. Examples used in the course will be drawn from physiology, ecology, evolution, and medicine. Laboratory sections will involve computer exercises, discussions, and student presentations. Prerequisites: BIOL 123 and MATH 165.

BIOL 491 LIBRARY AND INFORMATION RESEARCHS: NATURAL SCIENCES (2)

Techniques for finding library and information resources in the life sciences. Course covers use and evaluation of print and electronic information sources, including online and Internet databases, research strategies and techniques, compiling and preparing bibliographies, scientific writing form and style, and organization of personal reference files. Prerequisite: at least one biology course or consent of instructor.

BIOL 494 INDEPENDENT RESEARCH DESIGN (1)

Directed study under guidance of a faculty mentor to design a research project in biology through readings in primary literature and application of information from relevant upper-division course work. Prerequisites: cumulative GPA of 2.5, upper-division standing in biology, consent of instructor, and approved petition to enroll.

BIOL 495 SPECIAL STUDIES (1-4)

Investigations to meet an advanced specialized study need beyond the department curriculum. The project should be planned and described in written form with consent of the faculty sponsor. Prerequisites: a major or minor in biology with an upper-division standing; consent of instructor and department chair, and approved petition to enroll.

BIOL 496 SENIOR RESEARCH (2)

Experimental or observational research for the B.S. Degree conducted under the guidance of one or more of the biology faculty. A written report and an oral presentation of results in a public forum are required. Prerequisites: BIOL 494, senior standing in the major.

BIOL 497 SELECTED TOPICS (1-4)

Intensive study of biological topics, which will vary from semester to semester. May be repeated for credit and may be applicable to the requirements for a major in biology. Prerequisite: consent of instructor.

BIOL 498 BIOLOGY PRACTICUM (1-4)

Application of previously studied theory through supervised instructional work experience in biology. Intended for professional growth for undergraduates. Enrollees are required to write an evaluation of their course experience. May be repeated for up to a total of 4 units. Prerequisites: upper-division standing in biology, consent of the instructor in whose course the student will be working, and an approved petition to enroll.

BIOL 499 INTERNSHIP IN BIOLOGY (1-4)

Work that provides training in the use of biological skills in the community. Requires written agreement by students, faculty sponsor, on-the-job supervisor and field experience coordinators; please see department office for details. May be repeated for up to 8 units of credit; 3 hours per week for each unit. Cr/NC grading only.

BIOL 500S GRADUATE SEMINAR (1-2)

Advanced seminars exploring diverse topics in biological sciences. Topics vary from semester to semester, depending on faculty interest and expertise. This course may be repeated for credit.

BIOL 510 SELECTED TOPICS IN BIOLOGY (2-4)

Intensive study of biological topics, which will vary from semester to semester. Prerequisites: adequate undergraduate preparation in the topic under consideration and graduate or last-semester-senior standing with consent of instructor.

BIOL 511 CONSERVATION GENETICS (2)

Lecture, 1 hour. Discussion, 1 hour. An examination of the scientific approaches applied to species conservation. Although molecular genetic approaches will be emphasized, a variety of other approaches will also be considered (e.g. captive breeding, population viability analysis, and translocation). Prerequisite: consent of instructor.

BIOL 512 CONSERVATION ECOLOGY (2)

Lecture, 1 hour. Discussion, 1 hour. A seminar format with occasional lectures. An advanced exploration of current topics in the rapidly expanding field of conservation ecology. Specific topics considered will vary from semester to semester, depending on student interests. However, topics will commonly include habitat fragmentation and loss, global climate change, metapopulation dynamics, biological invasions, restoration ecology, and design and management of preserves. Prerequisite: BIOL 300.

BIOL 513 SPECIATION (2)

Lecture, 1 hour. Discussion, 1 hour. Examination of the theoretical and empirical approaches to defining species and a detailed survey of speciation modes and mechanisms. Lectures provide a framework for student led discussion of specific topics and case studies. Prerequisite: consent of instructor.

BIOL 515 MACROEVOLUTION (2)

Lecture, 1 hour. Discussion, 1 hour. A seminar format with occasional lectures. A topical and historical overview of the major macroevolutionary transitions that have occurred during the history of life. Particular attention will be given to broad patterns of change over time at higher levels of structural/organismic organization. Prerequisite: consent of instructor.

BIOL 516 BIOENERGETICS (2)

Lecture, 1 hour. Discussion, 1 hour. A seminar format with occasional lectures. An in-depth examination of energy flow through living organisms at all levels of biological organization, from molecules to populations. Topics may include cellular metabolism, animal energetics, thermoregulation, fasting physiology, locomotion, foraging energetics, reproductive energetics, life history theory, community energetics and population energetics. Prerequisite: consent of instructor.

BIOL 517 PARADIGMS IN PARASITOLOGY (2)

Lecture, 1 hour. Discussion, 1 hour. A seminar format with occasional lectures. Parasitology is a subject area that crosses many biological disciplines, and concepts in parasitology can be applied to any field of science. Students may choose topics that most closely relate to their research interests. Topics may include: ecology of emerging infectious diseases, how parasites affect their host's behavior, co-evolution of host-parasite associations, RNA editing, and how parasites evade the immune system. Prerequisite: consent of instructor; parasitology background not required.

BIOL 518 BIOTECHNOLOGY (2)

Lecture, 1 hour. Discussion, 1 hour. A seminar format with occasional lectures. The field of biotechnology is moving at a rapid pace, and many of the molecular and biochemical techniques are being applied to a wide variety of biological disciplines. Topics include: Structure-based approach to drug design, expressing recombinant proteins, DNA vaccines, and toxicity screening. Prerequisite: consent of instructor.

BIOL 544 ADVANCED CELL BIOLOGY (4)

Development and applications of major concepts in modern cell biology. Specific topics will include membrane structure and properties, metabolic pathways and physiology of energy conversion, cell signaling and principles of intercellular communication, cell-cycle dynamics and macromolecular regulation of cell division. Prerequisites: BIOL 344, and BIOL 348 or 349.

BIOL 545 RECOMBINANT DNA LAB (4)

Laboratory, 9 hours. Discussion, 1 hour. Techniques for the manipulation of DNA through gene cloning applicable in the study of all biological processes. Prerequisites: BIOL 342 or 344 and either BIOL 340 or CHEM 445.

BIOL 578 PROJECT CONTINUATION (1-3)

Designed for students working on their thesis or master's project but who have otherwise completed all graduate coursework toward their degree. This course cannot be applied toward the minimum number of units needed for completion of the master's degree. Prerequisite: permission of the graduate coordinator. Cr/NC only.

BIOL 590 BIOLOGY COLLOQUIUM (1)

Lecture, 1 hour. A series of lectures by faculty, master's degree candidates and invited guests on current research and contemporary issues in biology. All graduate students are encouraged to enroll each semester, although no more than 2 units are applicable to the MS degree. Cr/NC only.

BIOL 595 SPECIAL STUDIES IN BIOLOGY (1-3)

Investigations to meet highly specialized needs and to explore possible thesis topics. Project should be planned and described in writing with consent of faculty sponsor. Prerequisite: approved petition to enroll.

BIOL 598 GRADUATE PRACTICUM (1-4)

Application of previously studied theory to development and delivery of new instructional materials. Intended to provide professional growth for graduate students. Enrollees are required to write an evaluation of their course experience. Prerequisites: graduate standing in biology, consent of the instructor in whose course the student will be working, and an approved petition to enroll.

BIOL 599 M.S. THESIS (1-3)

Original investigation based on laboratory or field research that meets the department and university standards. Prerequisite: admission to classified standing and advancement to candidacy.

Business Administration (BUS)

BUS 150 BUSINESS AND SOCIETY (3)

A survey of the major fields of management, designed to introduce students to the range of perspectives available in the discipline. Topics will include: accounting, finance, general management, health care management, human resources management, industrial relations, marketing, multinational management, organizational behavior, and systems analysis.

BUS 211 BUSINESS STATISTICS (4)

Topics include collection and presentation of data, discrete and continuous distributions, probability and sampling theory, statistical inference and hypothesis testing. Parametric and nonparametric statistical tests will be examined, including t-tests, Chi-square, and ANOVA. Additional topics include Regression, time series analysis and applications in business forecasting. Prerequisite: computer competency and pre-business math requirement.

BUS 219 E/U COMPUTING TOOLS FOR BUS (3)

A laboratory-intensive course in which students gain a working knowledge of personal and mainframe computer operating systems as well as popular business applications such as spreadsheets and databases.

BUS 225 LEGAL ENVIRONMENT OF BUSINESS (4)

A study of the legal and ethical framework within which management decisions are made. The course emphasizes the sources, functions and processes of law. It surveys a number of areas, including negligence, contracts, product liability and constitutional law, and reviews government regulations in the areas of consumer protection, antitrust, labor and employment law.

BUS 230A FINANCIAL ACCOUNTING (4)

A foundation course designed to provide a basic understanding of the theory and practice of accounting, with emphasis upon basic principles, concepts and controls in relation to external reporting. Prerequisite: computer competency.

BUS 230B MANAGERIAL ACCOUNTING (4)

A foundation course designed to provide a basic understanding of the theory and practice of accounting, with emphasis upon basic principles, concepts and controls in relation to internal reporting. Prerequisite: BUS 230A.

BUS 232 INTRODUCTION TO THE ACCOUNTING CYCLE (1)

An introduction to computer accounting applications, including forecasting, database management, and financial statement preparation using a spreadsheet program. Prerequisites: BUS 230A and 230B. Cr/NC only.

BUS 270 PERSONAL FINANCIAL PLANNING (3)

This course provides comprehensive coverage of personal financial planning in the areas of money management, career planning, taxes, consumer credit, housing and other consumer decisions, legal protection, insurance, investments, retirements, retirement planning, and estate planning. This course may not be used in the business major.

BUS 292 LIBRARY AND INFORMATION RESEARCH: BUSINESS (1-3)

Designed to teach business information research skills: Students will learn how to assess information, how to construct effective search skills, how to construct effective search strategies, how to find and retrieve information, and how to critically evaluate sources. Includes on-line research practice. Electronic and print sources for business research will be covered. Recommended for juniors who have completed most or all of the pre-business program. Cr/NC.