

BIOLOGICAL SCIENCES (BSC)

BSC1005 BIOLOGICAL PRINCIPLES FOR NON-MAJORS (3.00 Credits)

Course designed to give students an understanding of the principles of Biology, while focusing on the nature and activities of living organisms. Course primarily for non-science majors.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

BSC1005L BIOLOGICAL PRINCIPLES FOR NON-MAJORS LAB (1.00 Credits)

Two hours of laboratory weekly which provides hands on activities that develop basic laboratory skills while reinforcing basic concepts in biology.

Dissection exercises may be a component of this course.

Total Contact Hrs: 32.00

Lab Hrs: 32.00

Fees: LABORATORY FEE \$25.00

Complete all the courses in one of the following options:

- Option 1 - Pre or Corequisite: BSC1005 (minimum grade: D)
- Option 2 - Pre or Corequisite: ENY1001 (minimum grade: D)

BSC1084 BASIC ANATOMY AND PHYSIOLOGY (3.00 Credits)

A basic anatomy and physiology survey course for students in allied health fields. The curriculum provides a brief introduction to physiological chemistry and physics, a study of basic cell biology, and a survey of human anatomy and physiology through the study of each organ system. Selected topics of pathology are introduced as appropriate to the audience. This course is not a substitute for anatomy and physiology I (BSC2085) and anatomy and physiology II (BSC 2086). Students who have successfully completed anatomy and physiology I (BSC 2085) or anatomy and physiology II (BSC 2086) with a grade of C or better may not enroll in BSC 1084. Additionally, BSC 1084 cannot be used as a substitute for BSC 2085 or BSC 2086, when required for a specific program of study.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

BSC1311 INTRODUCTION TO MARINE BIOLOGY (3.00 Credits)

This course is designated to introduce non-science major students to the physical, chemical, and biological features of the world ocean and the main groups of living marine organisms that inhabit it. Basic marine ecology will be included.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

BSC2010 INTRODUCTION TO BIOLOGY I (3.00 Credits)

This course is the first of a two-semester sequence introducing science majors to biological principles including cell structure, function, communication, reproduction, biochemistry and metabolism, classical and molecular genetics, and genetic engineering. Upon successful completion of this course, the students will be able to explain the methods of science, describe the characteristics of life, describe structure, function, and communication of cells, distinguish mitosis and meiosis, describe cell energetics, photosynthesis and respiration, solve genetics problems, and describe major advances in genetic engineering. Three hours lecture per week.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in one of the following options:

- Option 1 - Corequisite: BSC2010L (minimum grade: C), Pre or Corequisite: CHM1040 (minimum grade: C)
- Option 2 - Corequisite: BSC2010L (minimum grade: C), Pre or Corequisite: CHM1045 (minimum grade: C)

BSC2010L INTRODUCTION TO BIOLOGY I LABORATORY (1.00 Credits)

This laboratory course is the first of a two- course sequence introducing science majors to biological principles including cell structure and function, cell reproduction, biochemistry and cell metabolism, classical and molecular genetics, and genetic engineering. Three hours laboratory per week.

Total Contact Hrs: 48.00

Lab Hrs: 48.00

Fees: LABORATORY FEE \$34.00

Complete all the courses in one of the following options:

- Option 1 - Pre or Corequisite: BSC2010 (minimum grade: C) and CHM1040 (minimum grade: C)
- Option 2 - Corequisite: BSC2010 (minimum grade: C), Pre or Corequisite: CHM1045 (minimum grade: C)
- Option 3 - Corequisite: BSC2010 (minimum grade: C), Pre or Corequisite: CHM1040 (minimum grade: C)

BSC2011 INTRODUCTION TO BIOLOGY II (3.00 Credits)

This course is the second of a two-course sequence introducing science majors to biological principles including a study of the diversity of organisms, evolution and population dynamics, and ecology. Three hours lecture per week.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in the following option:

- Option 1 - Prerequisite: BSC2010 (minimum grade: C) and BSC2010L (minimum grade: C), Pre or Corequisite: BSC2011L (minimum grade: C)

BSC2011L INTRODUCTION TO BIOLOGY II LABORATORY (1.00 Credits)

This course is the second of a two-course sequence introducing science majors to biological principles including a study of the diversity of organisms, evolution and population dynamics, and ecology. Dissection exercises included. Special fee charged.

Total Contact Hrs: 48.00

Lab Hrs: 48.00

Fees: LABORATORY FEE \$42.00

Complete all the courses in the following option:

- Option 1 - Prerequisite: BSC2010 (minimum grade: C) and BSC2010L (minimum grade: C), Pre or Corequisite: BSC2011 (minimum grade: C)

BSC2085 HUMAN ANATOMY AND PHYSIOLOGY I (3.00 Credits)

A survey of the structure, function, and chemistry of the human body considering the following topics: chemistry, body organization, the cell, tissues, membranes, glands, the integumentary system, the skeletal system, the muscular system, the nervous system, and the special senses. 3 hours of lecture per week. CHM 1032, CHM 1040, or CHM 1045 is very strongly recommended (see your program requirements).

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in the following option:

- Pre or Corequisite: BSC2085L (minimum grade: C)

BSC2085L HUMAN ANATOMY AND PHYSIOLOGY I LABORATORY (1.00 Credits)

A survey of the structure, function, and chemistry of the human body considering the following topics: chemistry, body organization, the cell, tissues, membranes, glands, the integumentary system, the skeletal system, the muscular system, the nervous system, and the special senses. 3 hrs. lecture per week. CHM1032, CHM1040, or CHM1045 is strongly recommended. The laboratory relates to BSC2085 lecture course.

Total Contact Hrs: 32.00

Lab Hrs: 32.00

Fees: LABORATORY FEE \$21.00, LABORATORY FEE \$21.00

Complete all the courses in the following option:

- Pre or Corequisite: BSC2085

BSC2086 HUMAN ANATOMY AND PHYSIOLOGY II (3.00 Credits)

A continuation of the Anatomy and Physiology sequence, including the following topics; the circulatory system, the respiratory system, the digestive System, the urinary system, fluid and electrolytes and the reproductive System. CHM 1032, CHM 1040, or CHM 1045 is very strongly recommended (see your program requirements). 3 hours of lecture per week.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in the following option:

- Option 1 - Prerequisite: BSC2085 (minimum grade: C) and BSC2085L (minimum grade: C), Pre or Corequisite: BSC2086L (minimum grade: C)

BSC2086L HUMAN ANATOMY AND PHYSIOLOGY II LABORATORY (1.00 Credits)

Laboratory experiments coordinated with BSC1086, including microscope observation, study of anatomical models and dissection. Dissection exercises included.

Total Contact Hrs: 32.00

Lab Hrs: 32.00

Fees: LABORATORY FEE \$28.00

Complete all the courses in the following option:

- Option 1 - Prerequisite: BSC2085 (minimum grade: C) and BSC2085L (minimum grade: C), Pre or Corequisite: BSC2086 (minimum grade: C)

BSC2421 INTRODUCTION TO BIOTECHNOLOGY (3.00 Credits)

This lecture based course provides an introduction to concepts and principles associated with current accepted biotechnological practices in the areas of laboratory safety cell culture techniques, laboratory skills (measurements and calculations), preparation of solutions, use of various instruments and microscopy. In addition, methods of DNA extraction, amplification, gene cloning, nucleic acid and protein electrophoresis and DNA finger printing will be covered.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in the following option:

- Option 1 - Prerequisite: BSC2010 (minimum grade: C) and BSC2010L (minimum grade: C), Corequisite: BSC2421L (minimum grade: C)

BSC2421L INTRODUCTION TO BIOTECHNOLOGY LABORATORY (1.00 Credits)

This laboratory course provides hands-on experience in basic and common biotechnology laboratory techniques in the areas of laboratory safety, culture techniques, laboratory skills (measurements and calculations preparations of solutions, use of various laboratory instruments), and microscopy. In addition, methods in DNA extraction and amplification, gene cloning, nucleic acids, and protein electrophoresis and fingerprinting will be demonstrated.

Total Contact Hrs: 48.00

Lab Hrs: 48.00

Complete all the courses in the following option:

- Option 1 - Prerequisite: BSC2010 (minimum grade: C) and BSC2010L (minimum grade: C), Pre or Corequisite: BSC2421 (minimum grade: C)

BSC2910 DIRECTED INDEPENDENT RESEARCH (0.00 Credits)

Students (individually or in a group) will conduct research projects or certain aspects of research projects under the supervision of the instructor. This course is intended to help students acquire skills in applying research principles and obtaining practice in rigorous data collection and reporting. Hours may vary. Permission of Instructor Required.

Total Contact Hrs: 48.00

Other Hrs: 48.00

BSC2949 CO OP WORK EXPERIENCE (3.00 Credits)

A course designed to provide training in a students field of study through work experience. Students are graded on the basis of documentation of learning acquired as reported by student and employer. Requires Departmental permission.

Total Contact Hrs: 144.00

Other Hrs: 144.00

BSC4848 SCIENTIFIC COMMUNICATION (3.00 Credits)

Introduces students interested in scientific research to various techniques and software important for data processing and presentation of research data. Students learn to effectively present research to the general public and to the scientific community in written form, such as research proposals, conference presentations, seminars and publications.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

Complete all the courses in the following option:

- Prerequisite: ENC1101 (minimum grade: C)

BSC4911 INDEPENDENT RESEARCH IN THE BIOLOGICAL SCIENCES (4.00 Credits)

Students (individually or in a group) will conduct research projects or certain aspects of research projects. This course is intended to help students acquire skills in applying research principles and obtaining practice in rigorous data collection and reporting. Hours may vary. Instructor permission required. The instructor may incorporate any 5 or more objectives as appropriate to the given student project.

Total Contact Hrs: 64.00

Lecture Hrs: 64.00

BSC4930 SPECIAL TOPICS IN BIOLOGICAL SCIENCE (0.00 Credits)

Course centers around topics of current interest or of special interest to students or instructors. Topics or focus may vary from semester to semester. Hours may vary.

Total Contact Hrs: 48.00

Lecture Hrs: 48.00

BSC4948 SENIOR INTERNSHIP (3.00 Credits)

A course designed to provide training in a students field of study through work experience. Students are graded on the basis of documentation of learning acquired as reported by student and employer. Prerequisite: Co-Op Department approval. Students will be assigned specific course prefixes related to their academic major prior to registration. All students must contact the Co-operative Education Office to obtain registration approval. Placement by Testing Department.

Total Contact Hrs: 144.00

Other Hrs: 144.00

Fees: EDU/ACCIDENT INSURANCE \$4.75