

Program Description

The biology program emphasizes the relationship between structure and function of living systems and the concept that biological processes can be studied at different levels of organization. The program provides a balanced blend of mathematics, chemistry, physics and traditional and modern biology including the advanced topics essential to students continuing their studies at the university. Life is explored at the molecular, cellular, organismal and ecological levels.

Associate in Science Degree

The Associate in Science Degree can be obtained by completing the 44-46 unit major with a grade of "C" (2.0) or better in each course, the general education requirements, and electives for a total of 64-66 units.

Required Courses

	Units
BIOSC 1—Organismal Biology	5
BIOSC 2—Cell and Molecular Biology	5
CHEM 1 & 2—General Chemistry (5 & 5 units)	10
CHEM 3 & 4—Organic Chemistry (5 & 5 units)	10
MATH 30 & 31—Analytic Geometry and Calculus (3 & 3 units)	
OR	
MATH 20 & 21—Analytic Geometry & Calc. (4 & 4 units)	6-8
PHYS 2 & 4—General Physics (Non- Calculus) (4 & 4 units)	
OR	
PHYS 6 & 7—Physics for Science/ Engineering (4 & 4 units)	8
	44-46

BIOSC 1

5 Units

Principles of Organismal Biology

Prerequisite: CHEM 1 (may be taken concurrently).

Course Advisory: SCC minimum English standard.

Covers evolution, ecology, and the diversity of life. The laboratory component includes invertebrate and vertebrate dissection and weekend and all day field trips. Essay and objective exams, research papers, and lab practica will be used to evaluate student success. (BIOSC 1 & 2 = CAN BIOL SEQ A). *Three hours lecture, six hours lab.*

BIOSC 2

5 Units

Principles of Cell and Molecular Biology

Prerequisite: CHEM 1. Course Advisory: SCC minimum

*English standard. An introduction to basic concepts of cell and molecular biology that includes Mendelian and molecular genetics. Laboratory work includes performing current procedures in molecular biology with accurate reporting in scientific style. Written laboratory reports, practical tests, written exams which include essay, short answer, and objective questions, and a comprehensive lecture final will be used to evaluate student success. (CAN BIOL 2) (BIOSC 1 & 2 = CAN BIOL SEQ A). *Three hours lecture, six hours lab.**

Biology

BIOSC 5 Introductory Physiology <i>Prerequisite:</i> A grade of "C" or better in CHEM 10. <i>Course Advisory:</i> SCC minimum English standard; it is recommended that BIOSC 6 be taken before BIOSC 5. A physiology course that studies normal mechanisms and homeostatic relationships of most systems of the body from the molecular to the gross levels. The laboratory relates microstructure to function; utilizes a variety of instruments and techniques for measuring body parameters; and establishes the rationale for determining functional status. Student evaluation is primarily through written and practical examinations, including a comprehensive final examination. A portion of the student's evaluation depends on other written work. (CAN BIOL 12) (BIOSC 5 & 6 = CAN BIOL SEQ B). <i>Three hours lecture, six hours lab.</i>	5 Units	BIOSC 12 L Environmental Science Laboratory <i>Prerequisite:</i> BIOSC 12 (may be taken concurrently) <i>Course Advisories:</i> Eligibility for ENGL 1 and SCC minimum math standard. A course that uses laboratory and mandatory fieldtrip techniques to examine the ecological roles of organisms, resource use, and pollution/waste. <i>Three hours lab.</i>	1 Unit
BIOSC 6 Human Anatomy <i>Course Advisories:</i> SCC minimum English and math standards. A study of the structure of the human body involving histology, gross dissection and prepared human materials. Student progress will be evaluated with lab practica and lecture tests which will include essay questions and objective questions. (CAN BIOL 10) (BIOSC 5 & 6 = CAN BIOL SEQ B). <i>Three hours lecture, six hours lab.</i>	5 Units	BIOSC 14 Principles of Microbiology <i>Prerequisite:</i> CHEM 10. <i>Course Advisory:</i> SCC minimum English standard. The study of the morphology, physiology, genetics, taxonomy, and ecology of microorganisms. The course also includes principles of immunology, the control of microbes, and their relationship to disease. Laboratory exercises cover aseptic techniques, identification, staining, and microbial growth among others. (CAN BIOL 14). <i>Three hours lecture, three hours lab.</i>	4 Units
BIOSC 10 Anatomy and Physiology <i>Prerequisite:</i> A grade of "C" or better in CHEM 160 or one year of high school chemistry. <i>Course Advisory:</i> SCC minimum English standard. Presents a study of the structure and function of the major human organ systems. The lab involves the study of the cadaver and human prosections, microscopic anatomy, and physiological testing. Student evaluations will include written exams and laboratory practica, and may include additional written assignments. <i>Three hours lecture, six hours lab.</i>	5 Units	BIOSC 15 Introduction to Biology <i>Prerequisite:</i> None. <i>NOTE:</i> Not open for credit to students who have completed BIOSC 1 or 2. <i>Course Advisories:</i> Eligibility for ENGL 1; SCC minimum math standard. A non-majors biology course that introduces basic concepts of living organisms including aspects of biological chemistry, cell structure and function, physiology, genetics, evolution, and ecology. Students must successfully complete both the lecture AND lab portions of the course. Lecture and lab exams, written reports, and a project as well as a comprehensive final will be used for evaluation. <i>Three hours lecture, three hours lab weekly, including field trips.</i>	4 Units
BIOSC 12 Environmental Science <i>Course Advisories:</i> Eligibility for ENGL 1 and SCC minimum math standard. Examines the basic concepts of biology (especially ecology), chemistry, and physics to study: 1) human population growth; 2) short and long-term use of resources (such as soil, food, land, renewable and non-renewable energy, water, and air); and 3) the production of pollution and other wastes. <i>Three hours lecture.</i>	3 Units	BIOSC 16 Introduction to Human Biology <i>Prerequisite:</i> None. <i>NOTE:</i> Not open for credit to students who have completed BIOSC 1, 2, 5, 10 or 15. <i>Course Advisories:</i> SCC minimum English and math standards. An introduction to general biology with emphasis on the human model. Includes cell structure and function, human evolution, anatomy and physiology, genetics, and the human impact on the environment. Tests which include essay questions and a comprehensive final examination will be used to evaluate student success. This is a course for non-majors. <i>Three hours lecture.</i>	3 Units

BIOSC 18**3 Units****Biology of Sex**

Course Advisories: SCC minimum English and math standards. Our biological bases of sex and sexuality will be discussed and compared with other organisms. Essay and objective exams as well as written assignments will be used for student evaluations; the final exam will be comprehensive. *Three hours lecture.*

BIOSC 19**4 Units****Marine Biology**

Course Advisories: Eligibility for ENGL 1 and SCC minimum math standard. A non-majors course that studies the diversity and natural history of life in the marine environment with an emphasis on the adaptations of organisms to their environment. Lecture and laboratory exams, written reports and several field trip activities are required to fulfill the course requirements. Some field trips may involve a fee. *Three hours lecture, three hours lab.*

BIOSC 47**.5-3.0 Units****Independent Study**

Prerequisite: A grade of "C" or better in 12 units of credit, including 4 units from within the discipline.
Course Advisories: Eligibility for ENGL 1; statistics may be useful for data analysis. Designed for students who intend to major in biological sciences or pre-professional programs. May be repeated to a maximum of 3 units, including initial enrollment. *One and one-half to nine hours weekly by arrangement.*

BIOSC 49H**1-3 Units****Biology Honors**

Prerequisites: Eligibility for Honors Program; BIOSC 1, BIOSC 2, BIOSC 5, BIOSC 14, or BIOSC 15 (any of these courses may be taken concurrently). Requires approval of a faculty member sponsor and the Dean of the Math-Science Division. *Course Advisory: Eligibility for ENGL 1.* Requires students to complete an independent student project under the supervision of a member of the faculty. The project may be a laboratory or field study or a library study that leads to a thesis. In all cases, the final written product should show integration and synthesis of ideas. *Three to nine hours weekly by arrangement.*

BIOSC 99**.5-2.0 Units****Biology Honors: Special Dissection**

Prerequisites: Completion of 24 units of college credit with a minimum GPA of 3.3; a minimum of 5 units in the discipline with a grade of "B" or better; an ability to work independently; permission of the Division Dean based on instructor availability. An independent study project designed to increase understanding of human anatomy through detailed dissection and other projects assigned by the supervising instructor. The student will be evaluated through oral examination and evaluation of dissections. May be repeated to a maximum of 6 units, including initial enrollment. *Three to six hours weekly by arrangement.*

Special Topics

These courses, numbered 48, 98, or 148 depending upon their transferability, are courses of contemporary interest centered on changing knowledge and important issues in the field. Announcements of Special Topics courses appear in the Schedule of Classes.