BIOLOGY (BIOLO)

BIOLO 1100 (L1 900L)
Survey of Biology
4 Credit Hours
This biology course promotes scientific literacy for non-science majors and interested students. Organisms are studied from their behavioral, ecological, hereditary and evolutionary perspectives. An inquiry-based approach to understanding biological processes is emphasized. Students explore the relevance of biology to contemporary issues in human society. (3 Lecture hours, 2 lab hours)
Prerequisite: MATH 0465 or MATH 0481 (or college equivalent) with a C or better, or a qualifying score on the mathematics placement test or a qualifying A.C.T. math score. Course requires Reading Placement Category One.
Course types: Life Sciences, Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1110 (L1 905L)
Environmental Biology
4 Credit Hours
An interdisciplinary study of the environment investigating how nature works and how things are interconnected. Based on an understanding of ecological concepts and principles, students examine lifestyle issues and critically analyze the relationship among population, natural resources, land use, agriculture, biodiversity, industrialization and pollution. Environmental problems are examined from scientific, ethical, economic and sociological perspectives to enable students to understand the relevance of biology to contemporary issues in human society. (3 lecture hours, 2 lab hours)
Prerequisite: Course requires Reading Placement Category One.
Course types: Life Sciences, Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1120 (L1 906)
Introduction to Genetics
3 Credit Hours
This course provides an introduction to the principles of genetics emphasizing the significance of genetics to human culture, including classical transmission genetics, molecular genetics and biotechnology, and the genetics of populations. (3 lecture hours)
Prerequisite: MATH 0481 (or college equivalent) with a grade of C or better or a qualifying score on the Math Placement Exam. Course requires Reading Placement Category One.
Course types: Life Sciences, Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1130 (L1 906L)
Fundamentals of Biotechnology
4 Credit Hours
Application of living organisms and their products in industry, medicine, agriculture, forensics, and environmental science. This multidisciplinary course introduces fundamental principles of biology and chemistry that are used to develop biotechnology and surveys various fields of biotechnology. Topics include biochemistry, recombinant DNA, bioinformatics, medical biotechnology, and bioremediation. Laboratory includes techniques that are routinely used in biotechnology such as chromatography, electrophoresis, and genetic transformation of cells. This course is intended for both science majors and non-science majors. (3 lecture hours, 3 lab hours)
Prerequisite: Course requires Reading Placement Category One.
Course types: Life Sciences, Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1151 (L1 910L/BIO 910)
Principles of Biological Science
5 Credit Hours
An introduction to biology for the biological science major and interested students. Topics include the philosophy of science, scientific method, chemical organization of life, cell biology, cellular metabolism, genetics, molecular genetics, molecular biology, evolution, and biodiversity of the Bacteria, Archaea, protists, and Fungi. (4 lecture hours, 3 lab hours)
Prerequisite: MATH 0481 (or college equivalent) with a grade of C or better or qualifying score on the mathematics placement test or a qualifying A.C.T. math score. Course requires Reading Placement Category One.
Course types: Life Sciences, Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1152 (L1 910L/BIO 910)
Principles of Biological Science
5 Credit Hours
Continuation of Biology 1151. An introduction to higher levels of biological organization from the organism to the ecosystem. Topics include diversity of the plants and animals, organismal structure and physiology, behavior, population ecology, community ecology, ecosystem ecology, and environmental biology. (4 lecture hours, 3 lab hours)
Prerequisite: BIOLO 1151 with a grade of C or better.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1200
Introduction to Animal Research in the Field
2-3 Credit Hours
Students will be introduced to field-based animal research through the opportunity to directly observe and model how ecologists study wildlife in their natural habitats. The field component of the course, comprising at least 50% of the course contact time, offers students the opportunity to accompany researchers as they conduct experiments and gather data on various animal species in the natural setting. Through these outdoor, on-site learning experiences, students will be introduced to some of the latest research trends shaping the fields of wildlife biology, animal behavior, conservation biology, ecology, and wildlife management. Field-based research experiences will be enriched through related lectures, seminars, discussions, and group presentations. This course is repeatable up to three times so long as the location of the field study component of the course is different each time. (2 to 3 lecture hours)
Prerequisite: Course requires Reading Placement Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1205
Ecoregion Field Study
1-3 Credit Hours
This course will introduce students to fundamental ecological concepts by travelling to a particular ecoregion. Course content will focus on the region's unique ecology, biodiversity, evolutionary processes, and natural habitats. Immersive, field-based learning experiences will be enriched by lectures, seminars, and group presentations addressing the relevant research trends, management directives, and conservation initiatives shaping the long-term sustainability of the selected ecoregion. This course is repeatable up to three times as long as the ecoregion visited is different in each case. (1 to 3 lecture hours)
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1210
Topics in Sustainability
1-3 Credit Hours
This course will introduce students to the theory, principles, and practices of environmental sustainability and build on this foundational understanding while focusing on a particular sustainability issue. Topics that relate to the global goals for sustainable development for this in-depth study include: food systems, biodiversity, resource management, energy resources, water resources, climate disruption, environmental health, circular economies, and land use. Immersive field-based and experiential learning experiences will be enriched by lectures, readings, group discussions, and civic engagement activities addressing the specific sustainability topic. The course will tackle relevant sustainability challenges and explore potential solutions to address these challenges and make global, local, and personal connections. This course is repeatable up to three times as long as the sustainability topic covered and/or the field study destination are different in each case. (1 to 3 lecture hours)
Prerequisite: Course requires Reading Placement Category One.

BIOLO 1215
Introduction to Animal Biology
1-3 Credit Hours
Students will be introduced to fundamental ecological concepts and principles by studying a particular animal species or related group of animals. Course content will focus on understanding the natural history, behavior, evolution, and conservation of the animal(s) selected. Immersive field-based excursions and experiential learning experiences will be enriched by lectures, readings, and discussions addressing research techniques, species and ecosystem management, and conservation initiatives shaping the long-term preservation of the animal group. This course is repeatable up to three times as long as the animal group studied and/or the field study destination is different in each case. (1 to 3 lecture hours)
Prerequisite: Course requires Reading Placement Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1800
Special Project
1-3 Credit Hours
Special project courses in biology cover topics not otherwise covered by general education courses and other courses in the Catalog for the biology discipline. These courses require direct experience and focused reflection in an in-depth study of a specific biology topic and/or the critical analysis of contemporary issues in biology. They are targeted to self-selected students with an interest in the subject matter and involve active participation. The course delivery incorporates an experiential component of no less than 30 percent but not to exceed 70 percent. This experiential component may include field studies, interdisciplinary learning, and/or the practical application of biology concepts, theories, principles and methods with a specific focus. All courses require an orientation session to deliver academic and experiential information (syllabus, academic requirements, field preparation, logistics, etc.). This course may be taken four times for credit as long as a different topic is selected each time.
Prerequisite: Course requires Reading Placement Test Score-Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1820
Selected Topics I
3 Credit Hours
Introductory exploration and analysis of selected topics in biology with a specific theme indicated by course title listed in college class schedule. This course may be taken four times for credit as long as different topics are selected. (8 lab hours)
Prerequisite: Course requires Reading Placement Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1821
Selected Topics II
3 Credit Hours
Introductory exploration and analysis of selected topics in biology with a specific theme indicated by course title listed in college class schedule. This course may be taken four times for credit as long as different topics are selected. (2 lecture hours, 2 lab hours)
Prerequisite: Course requires Reading Placement Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 1840
Independent Study
1-4 Credit Hours
Exploration and analysis of topics within biology to meet individual student-defined course description, goals, objectives, topical outline and methods of evaluation in coordination with and approved by the instructor. This course may be taken four times for credit as long as different topics are selected. (2 to 8 lab hours)
Prerequisite: Consent of instructor is required. Course requires Reading Placement Test Score-Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 2150
Ecology
4 Credit Hours
Introduction to the field of ecology. Ecological principles and concepts pertaining to ecosystems, communities and populations are examined. Emphasis is given to experimentation in the field. (2 lecture hours, 4 lab hours)
Prerequisite: BIOLO 1151 and BIOLO 1152 or equivalent. Course requires Reading Placement Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 2151
Cell Biology
4 Credit Hours
Advanced examination of the morphology and physiology of eukaryotic and prokaryotic cells. Coverage includes organelle structure and function, cell membranes, the cytoskeleton, extracellular matrices, enzymes, bioenergetics, cell division, gene expression, cell movement, and cell communication. Course is intended for the biological science major and has a lab component. (3 lecture hours, 2 lab hours)
Prerequisite: BIOLO 1152 with a grade of C or better, or equivalent and CHEMI 1552 with a grade of C or better, or equivalent. Course requires Reading Placement Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 2800
Special Project
1-3 Credit Hours
Advanced experiential courses in biology cover topics not otherwise covered by general education courses and other courses in the catalog for the biology discipline. These courses require direct experience and focused reflection in an in-depth study of a specific biology topic and/or the critical analysis of contemporary issues in biology. They are targeted to self-selected students with an interest in the subject matter and involve active participation. The course delivery incorporates an experiential component of no less than 30% but not to exceed 70%. This experiential component may include field studies, interdisciplinary learning, and/or the practical application of biology concepts, theories, principles, and methods with a specific focus. All courses require an orientation session to deliver academic and experiential information (syllabus, academic requirements, field preparation, logistics, etc.)
Prerequisite: At least one course in Biology or consent of instructor. Course requires Reading Placement Test Score-Category One.
Course types: Physical/Life Science (A.A.S., A.G.S.)

BIOLO 2860
Internship (Career & Technical Ed)
1-4 Credit Hours
Course requires participation in Career and Technical Education work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. (5 to 20 lab hours)
Prerequisite: Consent of instructor and 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Dean from the academic discipline where the student is planning to earn credit.
Course types: Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.), Physical/Life Science (A.A.S., A.G.S.)

BIOLO 2865
Internship Advanced (Career & Tech Ed)
1-4 Credit Hours
Continuation of Internship (Career and Technical Education). Course requires participation in Career & Technical Education work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. (5 to 20 lab hours)
Prerequisite: Consent of instructor and 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Dean from the academic discipline where the student is planning to earn credit.
Course types: Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.), Physical/Life Science (A.A.S., A.G.S.)

BIOLO 2870
Internship (Transfer)
1-4 Credit Hours
Course requires participation in work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. (5 to 20 lab hours)
Prerequisite: Consent of instructor and 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Dean from the academic discipline where the student is planning to earn credit.
Course types: Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.), Physical/Life Science (A.A.S., A.G.S.)

BIOLO 2871
Internship - Advanced (Transfer)
1-4 Credit Hours
Continuation of Internship (Transfer). Course requires participation in work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. (5 to 20 lab hours)
Prerequisite: Consent of instructor and 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Dean from the academic discipline where the student is planning to earn credit.
Course types: Contemporary Life Skills (A.A., A.S., A.A.S., A.G.S.), Physical/Life Science (A.A.S., A.G.S.)