Biology - Science with Biology Concentration

Associate in Science

Minimum of 61-68 credit hours

Biology students strive to understand the fundamental processes of life. Their studies cover everything from plants and animals to fungi and bacteria. Courses cover a wide variety of subjects including microbiology, botany, ecological systems, comparative vertebrate anatomy, zoology, genetics and physiology. Within the biology concentration, students can focus on specialized areas such as environmental science, botany and zoology. A science degree with a concentration in biology gives a student the thorough academic background needed to pursue additional education at a four-year college or university. Once the student graduates with a bachelors degree, career opportunities become available in areas such as ecology, education, pollution control, medical technology, medicine, research, forestry, wildlife management, dentistry and pharmacology.

Course Sequence

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<th>Course ID</th>
<th>Course Name</th>
<th>Credits</th>
<th>Type</th>
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Course Grouping

Major Courses: (16 credit hours); Biological Science: 7 credit hours in Biological Science from the following: BIO 1124; CHEM 1115; 7 credits: BIO 1203; BIO 2114, BIO 2125, BIO 2224, BIO 2225; 7 credit hours: BIO 1203; BIO 2224, BIO 2225

General Education Courses: (37 credit hours) English: ENGL 1113; ENGL 1213; History: HIST 1483 or HIST 1493; Political Science: POLSC 1113; Biology: BIO 1134; Chemistry: CHEM 1215; Physics: PHYS 1114, Humanities: Six credit hours; Social Science: Three credit hours; Mathematics: MATH 1513

Program Notes

Notes: This program is designed for students planning to continue their education at a four-year college or university. See the front general section for information and requirement about University Parallel/Transfer Programs.

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BIO 1124 - GENERAL BIOLOGY I
(Majors)
Prerequisites: ENGL 0203 or adequate placement score or by meeting determined placement measures; MATH 0403 or adequate math placement test score. 4 Credits  An introductory course required for all biology science majors and pre-health profession students. The fundamental principles of biology are described using a cellular approach. Students gain knowledge regarding the chemical basis of life, structural characteristics of cells to include a discussion of energetics, metabolism and genetics. Evolution and ecology are also discussed in order to provide an understanding of both the diversity of living organisms and the living world. Students recognize, discuss and correctly apply fundamental biological principles influencing their personal relationship with other life forms. A discussion of the scientific method, logical (deductive) reasoning, hypothesis testing and some common fallacies and misconceptions that cloud scientific explanations of the natural world are included. Laboratory work, an integral and required part of the course, will enhance the student’s understanding of fundamental biological concepts as well as scientific procedures, laboratory technical skills, dissection and statistical analysis.

BIO 1134 - GENERAL BIOLOGY II
(Majors)
Prerequisites: BIO 1124 4 Credits  This second course in the General Biology series for majors in the biological sciences and related fields, takes organismal approach to studying bacterial, plant and animal diversity, and relates how various morphological features function. A discussion of the scientific method, logical (deductive) reasoning, hypothesis testing and some common fallacies and misconceptions that cloud scientific explanations of the natural world are included. Laboratory work, an integral and required part of the course, will enhance the student’s understanding of fundamental biological concepts as well as scientific procedures, laboratory technical skills, dissection and statistical analysis.

CHEM 1215 - GENERAL CHEMISTRY II
Prerequisites: CHEM 1115 with a grade of “C” or better; MATH 1513 or MATH 1533 with a grade of "C" or better. 5 Credits  This course is a continuation of CHEM 1115 with emphasis on thermochemistry, intermolecular forces, properties of solutions, acid/base properties, kinetics, equilibrium, thermodynamics, electrochemistry, and organic chemistry. Laboratory is an integral part of the course.

CS 1103 - INTRODUCTION TO COMPUTERS AND APPLICATIONS
Prerequisites: Math 0103 or adequate math placement test score; ENGL 203, adequate placement score, or by meeting determined placement measures 3 Credits  This hands-on course affords students a basic understanding of computers and their application. Upon completion of this course, the student will be able to demonstrate the ability to use a computer operating system, an office suite, productivity tools, as well as the Internet at an introductory level. Advanced Standing is available.

ENGL 1113 - ENGLISH COMPOSITION I
Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures 3 Credits  The student will write well-argued, well-constructed paragraphs and essays, and demonstrate the principles of unity, coherence, and organization and which contain specific details and vivid language. The students will locate library material and incorporate researched materials into compositions.

ENGL 1213 - ENGLISH COMPOSITION II
Prerequisites: ENGL 1103 or ENGL 1113 taken within the last year, with strong encouragement for immediate continuation. 3 Credits  In this advanced writing course, students will create essays that explore and evaluate a variety of issues and perspectives suggested by fiction, poetry, drama, essays, and other types of cultural texts. Students will refine and augment the writing techniques they learned in ENGL 1113 or ENGL 1103 to develop well-reasoned, well-structured arguments in a clear, fluid, and engaging prose style.

FA BIO - FACULTY APPROVED BIOLOGICAL SCIENCE ELECTIVE
Prerequisites: 3 Credits  Faculty approved Biological Science elective

HIST 1493 - U.S. HISTORY SINCE THE CIVIL WAR
Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures 3 Credits  After analyzing events in American history from 1400 to 1870 in such areas as revolution, geographic and social mobility, political reform, government precedents and war, the student will be able to identify patterns of present day mobility, describe governmental operations in his society and help resolve conflict in society based on the students search for change, precedents, and conflict in the American past.

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HUM - HUMANITIES ELECTIVE
Prerequisites: 3 Credits  Humanities elective

MATH 1513 - COLLEGE ALGEBRA
FOR BUSINESS, LIFE SCIENCES AND SOCIAL SCIENCES
Prerequisites: MATH 0403 or adequate math placement test score; ENGL 203, adequate placement score, or by meeting determined placement measures 3 Credits  The student will demonstrate an understanding of the general concepts of relation and function and specifically of polynomial, exponential, and logarithmic functions; the ability to solve systems of equations by utilizing matrices and determinants; and the ability to solve practical problems using algebra.

PHYS 1114 - COLLEGE PHYSICS I
Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures and MATH 1513 or higher or APPM 1223, within the last two years
or by evaluation. § Criteria for evaluation is in division office.

4 Credits Students will demonstrate their understanding of useful concepts of kinematics and dynamics, energy and momentum, waves and sound, fluids and thermodynamics by (1) developing numerical and graphical descriptions of physical phenomena, (2) numerically predicting the results of physical occurrences, and (3) applying laboratory skills to analyze real situations. Numerical computations will utilize algebra and basic trigonometry where appropriate.

**POLSC 1113 - AMERICAN FEDERAL GOVERNMENT**
Prerequisites: ENGL 0203, adequate placement score, or by meeting determined placement measures
3 Credits A study of the principles, structure, processes and functions of the United States federal government.

**SCL 1001 - SUCCESS IN COLLEGE AND LIFE**
Prerequisites: ENGL 0106 or adequate reading/writing assessment scores
1 Credit Students will learn best practices for academic, career, and personal success. Students will discover their individual strengths, interests, and values to create a personalized plan; select and utilize resources that are applicable to their growth and success; and engage as active and responsible members of the academic community. This course should be taken during a student's first semester of college work at Oklahoma City Community College and is a required course in degree plans to satisfy the Life Skills requirement.

**SOC SC - SOCIAL SCIENCE ELECTIVE**
Prerequisites:
3 Credits Social Science elective

**SUPP - GUIDED SUPPORT ELECTIVE**
Prerequisites:
3 Credits Guided Support elective