BIOLOGICAL SCIENCES

Biology is the study of living organisms from those composed of one cell to those made of trillions of cells and everything in between, including bacteria, mushrooms, humans, other animals, and plants. Biology majors also receive a strong foundation in other science fields, as these are relevant to living organisms. For example, all living things are made of molecules. So to understand how these molecules will interact in living organisms, biology majors will receive a foundation in chemistry. Students in the biology program at Oxnard College will learn about the diversity of living organisms and will become skilled in laboratory techniques. Various career options in biology will also be explored.

The Associate in Science in Biology for Transfer (AS-T) is recommended for those students planning to transfer to a California State University school as it provides certain guarantees upon transfer. The AS-T in Biology is also recommended for students planning to transfer to the University of California or other four-year institution as a biology major as it will meet the majority of their lower-division degree requirements. See a counselor for more information regarding the specific degree requirements for your transfer institution and assist.org (https://assist.org/). For students interested in the wonder of the living world, the Oxnard College Biology program is the place to be.

University of California Credit Limitation on Transfer of Biology Courses

The UC will give credit for *only* **one** Biology series:

Course ID	Title	Units/ Hours
BIOL R101 & R101L	General Biology and General Biology Laboratory [1]	4
or		
BIOL R120 & R120L	Principles of Biology I and Principles of Biology I Lab: Intro to Cellular and Molecular Biology	5

1
No credit will be given for BIOL R101 + BIOL R101L if taken *after* BIOL R120 + BIOL R120L.

NOTE: The UC limits enrollment in some courses. See Overview tab for more information.

Anatomy Courses

ANAT R101 General Human Anatomy 4 Units
Formerly: ANAT 100
In-Class Hours: 35 lecture, 105 laboratory
Prerequisites: BIOL R101 or BIOL R101H; and BIOL R101L; and MATH R005 or MATH R015; and ENGL R097 or eligibility for ENGL R101 as determined by the college's multiple measures assessment process
C-ID: BIOL 110B
This course is organized into two parts: lecture and laboratory. The lecture portion is an introduction to gross anatomy as well as organization and histology of human organ systems. The laboratory portion reinforces the lecture material and consists of hands-on experiments and demonstrations used to illustrate the principles and concepts of anatomy. These include but are not limited to microscope use, model and specimen examination, dissection of the cat as well as other livestock organs and demonstration of the dissected human cadaver. This course meets the requirements of students anticipating transfer to university, medical school, dental school, holistic medicine, kinesiology programs and other health care certificated programs.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2, B3
IGETC: 5B, 5C

Biology Courses

BIOL R100 Marine Biology 3 Units
Same-As: MST R100
In-Class Hours: 52.5 lecture
Advisories/Rec Prep: READ R095 or ESL R095 and ENGL R097 or ENGL R100 or ENGL R101
This course provides an introduction to the diversity of marine organisms and the physical and biological processes that influence their life history, behavior, distribution, and anatomical structure. Topics also address the interactions of these organisms and processes in a variety of habitats, marine ecology, and marine conservation.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2
IGETC: 5B

BIOL R100L Marine Biology Laboratory 1 Unit
Same-As: MST R100L
In-Class Hours: 52.5 laboratory
Prerequisites: BIOL R100 or concurrent enrollment
Advisories/Rec Prep: READ R095 or ESL R095 and ENGL R097 or ENGL R100 or ENGL R101
This laboratory course provides an introduction to the diversity of marine organisms and the physical and biological processes that influence their structure, life history, and behavior.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B3
IGETC: 5C

BIOL R101 General Biology 3 Units
In-Class Hours: 52.5 lecture
Advisories/Rec Prep: BIOL R101L or concurrent enrollment; ENGL R095 and ENGL R097 or ENGL R100 or ENGL R101 or ENGL R101H or concurrent enrollment
This course is an introduction to the science of life, cell biology, metabolism, diet, genetics, evolution and ecology and will include current issues and news on these topics. Credit will not be awarded for both the regular and honors versions of a course. Credit will be awarded only for the first course completed with a grade of C or better or "P.".
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2
IGETC: 5B

BIOL R101H Honors: General Biology 3 Units
In-Class Hours: 52.5 lecture
Advisories/Rec Prep: ENGL R095 and ENGL R097 or ENGL R100 or ENGL R101 or ENGL R101H; concurrent enrollment in BIOL R101L
This course is an introduction to the science of life, cell biology, metabolism, diet, genetics, evolution and ecology and will include current issues and news on these topics. Honors work challenges students to be more analytical and creative through expanded assignments, real-world applications, and enrichment opportunities. Credit will not be awarded for both the honors and regular versions of a course. Credit will be awarded only for the first course completed with a grade of C or better or "P.".
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2
IGETC: 5B

BIOL R101L General Biology Laboratory 1 Unit
In-Class Hours: 52.5 laboratory
Prerequisites: BIOL R101 or BIOL R101H or concurrent enrollment
Advisories/Rec Prep: MATH R005 or MATH R015
This is a laboratory course designed to be taken in conjunction with BIOL R101 as an introduction to biology laboratory practices for non-majors as well as those considering majoring in Biology. The laboratory exercises cover the scientific method, basic biochemistry, microscopy, cellular organization, cellular energy transformation, cellular reproduction, genetics, and evolution.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B3
IGETC: 5C

BIOL R120 Principles of Biology I 4 Units
In-Class Hours: 70 lecture
Prerequisites: CHEM R120 and MATH R005 or MATH R015
Advisories/Rec Prep: ENGL R097 or ENGL R100 or ENGL R101
The first semester of biology for majors introduces the student to principles of cellular and molecular biology. Knowledge from a breadth of disciplines related to health, medical and research science careers is examined including: biochemistry, metabolism, molecular biology, genetics, cellular biology, recombinant DNA, developmental biology, microbiology and molecular evolution. While the diversity of life is surveyed, an emphasis is placed on the biology worldview derived from experimental data of specific model genera, animal cell culture systems and prokaryotic/eukaryotic viruses. The method of generating hypothesis based research results and the role of paradigms in advancing biological science theory are examined.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2
IGETC: 5B

BIOL R120L Principles of Biology I Lab: Intro to Cellular and Molecular Biology 1 Unit
In-Class Hours: 52.5 laboratory
Prerequisites: BIOL R120 or concurrent enrollment
C-ID: BIOL 190
This is a laboratory course designed to complement the BIOL R120 lecture course, the first course in the series of biology courses for majors. The current methods employed by investigators in the biological sciences are presented. These include, but are not limited to microscopy, differential centrifugation, chromatography, electrophoresis, spectrophotometry, recombinant DNA methods and PCR.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B3
IGETC: 5C

BIOL R122 Principles of Biology II 4 Units
In-Class Hours: 70 lecture
Prerequisites: MATH R005 or MATH R015; BIOL R120 and BIOL R120L; ENGL R097 or ENGL R100; or ENGL R101 or ENGL R101H or concurrent
This course, intended for biology majors, includes a survey of the basic biology and diversity of unicellular and multicellular organisms and examines the basic principles governing evolution of organisms and interactions between organisms and the environment. It emphasizes general biological principles, classification, structure, function and evolutionary adaptations of organisms (including plants, fungi, animals, and unicellular organisms) to their environments, and ecological principles.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2
IGETC: 5B

BIOL R122L Principles of Biology II Laboratory 1 Unit
In-Class Hours: 52.5 laboratory
Prerequisites: BIOL R122 or concurrent
C-ID: BIOL 140, BIOL 135 S
This course, intended for biology majors, is a survey of the diversity of unicellular and multicellular organisms, their anatomy, functional morphology, physiology, development, and interactions with each other and their environment.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B3
IGETC: 5C

BIOL R155 Principles of Botany 3 Units
In-Class Hours: 52.5 lecture
Prerequisites: BIOL R101 or BIOL R120 and MATH R005 or MATH R015
This course is intended for biology majors and covers comparative diversity, structure, and function of plants. Topics include development, morphology and physiology, taxonomy and systematics. Principles of population and community ecology and ecosystem interactions are emphasized.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2
IGETC: 5B

BIOL R155L Principles of Botany Laboratory 1 Unit
In-Class Hours: 52.5 laboratory
Prerequisites: BIOL R155 or concurrent enrollment
C-ID: BIOL 155
This course involves laboratory and field studies of the characteristics and relationships of selected plants from the major divisions. Students will learn the principles of taxonomy, and will gain practice in identification of species by means of keys. This course will offer an introduction to the basic experimental techniques and instrumentation used in the investigation of plant physiology.
Grade Modes: Letter Graded
Field Trips: Will be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B3
IGETC: 5C

BIOL R170 Biological Marine Resource Management 1 Unit
Same-As: MST R170
In-Class Hours: 52.5 laboratory
Corequisites: GEOL R178 or MST R178
This field course is an introduction to topics in marine biology related to current resource management issues in this region. Trips to natural areas where biological, geological, and oceanographic resources can be observed will be combined with related information about resource management at the federal, state, and local levels.
Grade Modes: Letter Graded, Student Option- Letter/Credit, Pass/No Pass Grading
Field Trips: Will be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: None
Transfer Credit: CSU
UC Credit Limitations: None
CSU GE-Breadth: None
IGETC: None

BIOL R199 Directed Studies in Biology Related Topics 1-3 Units
In-Class Hours: 52.5-157.5 laboratory
Prerequisites: BIOL R100 and BIOL R100L; or BIOL R101 and BIOL R101L; or, MST R100 and MST R100L; or, BIOL R120 and BIOL R120L
Designed for students interested in furthering their knowledge of Biology on an independent study basis. These studies may require a combination of laboratory and library research. Project findings will be presented in a scientific poster format, video, protocol or research publication.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: None
Transfer Credit: CSU
UC Credit Limitations: None
CSU GE-Breadth: None
IGETC: None

Microbiology Courses

MICR R100 Principles of Microbiology 3 Units
In-Class Hours: 52.5 lecture
Prerequisites: MATH R005 or MATH R015 and CHEM R104 (or higher) and ANAT R101 and PHSO R101 and BIOL R101 or BIOL R101H or BIOL R120
Advisories/Rec Prep: ENGL R101
This course is an introduction to the structure, metabolic activities, utility and pathogenicity of bacteria, fungi, algae, protozoa and viruses. The topics will include distribution, metabolism, molecular genetics, biotechnology, immunity, cancer, probiotics and the physical/chemical methods used in control of microbes and cellular pathogens. The principles of disease transmission, prevention and immunity will also be presented. The diversity of the microbial world and its applications to improving human health and quality of life are emphasized.
Grade Modes: Letter Graded
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2
IGETC: 5B

MICR R100L Principles of Microbiology Laboratory 2 Units
In-Class Hours: 105 laboratory
Prerequisites: MICR R100 or concurrent enrollment
This course is an introduction to the structure, metabolic activities, utility and pathogenicity of bacteria, fungi, algae, protozoa and viruses. The topics will include distribution, metabolism, molecular genetics, biotechnology, immunity, cancer, probiotics and the physical/chemical methods used in control of microbes and cellular pathogens. The principles of disease transmission, prevention and immunity will also be presented. The diversity of the microbial world and its applications to improving human health and quality of life are emphasized.
Grade Modes: Letter Graded
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B3
IGETC: 5C

Physiology Courses

PHSO R101 Human Physiology 5 Units
In-Class Hours: 52.5 lecture, 105 laboratory
Prerequisites: ANAT R101 and CHEM R104 or CHEM R110 and ENGL R097 and MATH R005 or MATH R015 or placement as determined by the college's multiple measures assessment process
C-ID: BIOL 120B
This course emphasizes principles of cellular and systemic functions of the human body. Lecture topics include scientific method, basic inorganic and organic chemistry, solute as well as water transport and balance, homeostatic mechanisms, and functions of the major organ systems. This course emphasizes demonstrations and techniques of commonly utilized laboratory equipment. Laboratory topics will primarily consist of analysis, interpretation and evaluation of data gathered relating to homeostatic mechanisms, functions of the major organ systems and disease. Experiments reinforce material presented in lecture.
Grade Modes: Letter Graded
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: A1
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: B2, B3
IGETC: 5B, 5C

- Biology, Associate in Science for Transfer (http://catalog.vcccd.edu/oxnard/programs-courses/biological-sciences/biology-ast/)

For more information contact:

Department Chair
Dr. Shannon Newby (805) 678-5050 snewby@vcccd.edu