

BIOL 117 Introductory Physiology**Credit Hours:** 4**Scheduled hours per week**

Lecture: 3

Lab: 2

Other: 0

Catalog Course Description: A continuation of Biology 115, the course focuses on the structure, function, and diversity of reproductive, developmental, functional, and integrative mechanisms in plants and animals. In combination with the accompanying laboratory (BIOL 117L), the course represents the second in an integrated sequence required of biology major transfer students, students who elect biology as a minor in the Multidisciplinary studies BA degree program, or to fulfill the general education requirement in science. Students must register for both a lecture section and a laboratory section.

Pre-requisites: BIOL 115; CHEM 115; CHEM 116**Co-requisites:** CHEM 116**Course Learning Outcomes:****Topics to be studied:**

Upon successful completion of the course, students will be expected to show/be able to:

- Knowledge and understanding of plant and animal diversity
- Knowledge and understanding of plant and animal evolution
- Formulate hypotheses and design experiments related to biological principles
- Evaluate information and form conclusions based on experimental findings
- Critical thinking to solve problems using experimental data and information
- Solve applications using material gleaned from scientific literature
- Critical reading skills of scientific literature

Lecture Portion:

- Evolutionary processes;
- Speciation;
- Phylogenies and the history of life;
- Diversity of life to include Bacteria, Archaea, Protista, Fungi, Animals, and Plants;
- Animal anatomy and physiology to include development, structure and function, osmoregulation, gas exchange and circulation, chemical signals, electrical signals, reproduction, and immunity;
- Plant anatomy and physiology to include transport, chemical signals, and reproduction.

Lab Portion:

- Critical reading of scientific literature;
- Phylogenetics;
- Electrophoresis;
- Performing dissections of representative animal and plant specimens;
- Performing qualitative and quantitative analyses of organic compounds;
- Formulating research hypotheses;
- Designing experiments to test research hypotheses;
- Scientific writing and reporting of experimental findings

Relationship of Course to Program or Discipline Learning Outcomes:

Relationship of Course to Science Learning Outcomes:	
Students will learn the process and reasoning behind the Scientific Method and be able to conduct experiments that meet the requirements of the model.	X
Students exhibit the basic safety-related rules and regulations of working in the lab.	X
Students be able to recount the basic safety tenants associated with a specific scientific discipline.	X
Students will become proficient at Science Writing.	X
Students will recognize and identify the applications of their specific discipline in the 'real world.'	X
Students will accurately recount important milestones in the history of scientific inquiry in their discipline.	X
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Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	X
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
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Special requirements of the course:

N.A.

Additional information:

N.A.

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