

BIOL 436 Animal Physiology

Credit Hours: 3

Scheduled hours per week

Lecture: 3

Lab: 0

Other: 0

Catalog Course Description: In-depth current treatment of physiological principles which operate at various levels of biological organization in animals of diverse taxonomic relationships, with emphasis on vertebrate physiology. (3 lecture hours per week) (Pre-requisites: BIOL 101/103; BIOL 102/104 or BIOL 115/115L; BIOL 117/117L) Offered in Spring Semester of even numbered years.

Pre-requisites: BIOL 101, BIOL 102, BIOL, 103, BIOL 104 or BIOL 115, BIOL 115L, BIOL 117, BIOL 117L

Co-requisites: N/A

Course Learning Outcomes:

- To describe normal function of the plasma membrane.
- Identify structures of the nervous system and describe their functions.
- Describe structure and function of major types of muscle.
- Compare and contrast vertebrate and invertebrate muscle.
- Describe the cardiac cycle in vertebrates.
- Compare cardiovascular function in selected vertebrates and invertebrates.
- Compare respiratory function in selected vertebrates and invertebrates.
- Describe structure and function of the vertebrate kidney.
- Compare excretion and osmoregulation in selected vertebrates and invertebrates.
- Identify structures and function of digestive systems in selected specimens.

Topics to be studied:

- Biomembranes and membrane potential
- Nervous systems and neurophysiology
- Muscle structure and physiology
- Cardiac structure and physiology
- Excretory systems and osmoregulation
- Sensory physiology
- Respiratory systems
- Digestive systems

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.	

Students be able to recount the basic safety tenants associated with a specific scientific discipline.	
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
5/3/2016	

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.	X
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.	X
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.	
5/3/2016	

Special requirements of the course:

N/A

Additional information:

N/A

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