University of Arkansas - Fort Smith
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General Syllabus

BIOL 2013 Introduction to Organismal Biology

Credit Hours: 3 Lecture Hours: 3 Laboratory Hours: 0

Prerequisite or corequisite: CHEM 1403 College Chemistry I

Effective Catalog: 2018- 2019

I. Course Information

A. Catalog Description

Study of the general principles of biology from an organismal perspective. Topics include ecological and evolutionary concepts, global and community biodiversity, and the basic principles of physiology in plants and animals. Course intended for science majors.

B. Additional Information - None

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Demonstrate a conceptual understanding of evolutionary processes, population ecology and genetics, speciation, community ecology, ecosystems, and global ecology.
2. Demonstrate knowledge of the broad organismal composition of global biodiversity, including major groups of viruses, bacteria, archaea, protists, fungi, algae, plants, and the animal phyla.
3. Demonstrate a basic understanding of plant physiology, including structure/function relationships, transport and nutrition, defense/environmental reactions, and reproduction.
4. Demonstrate a basic understanding of animal physiology, including structure/function relationships, the role of water and nutrition, gas exchange and circulation, nervous and sensory systems, signaling and movement, immune responses, and reproduction.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills: Students will critically evaluate scientific papers obtained from primary sources. Students will judge whether methodology was appropriated to test a given hypothesis and if conclusions made follow logically from results.

Communication Skills (written and oral)

In reading and listening, the student will determine the meaning of words on the basis of context, identify facts as opposed to opinion, and perceive the tone and bias of a message. Students will effectively communicate scientific ideas and principles.

Ethical Decision Making

The students will conduct themselves in an ethical manner and evaluate ethical considerations during discussions of molecular research activities common to the discipline of cell biology.

Global & Cultural Perspectives

Students will reflect upon global discipline of health and be able to work in a group comprised of diverse cultures and cultural perspectives.

III. Major Course Topics

A. The Molecular Basis of Life
   1. The Science of Biology
B. Evolution
   1. Genes within Populations
   2. The Evidence for Evolution
   3. The Origin of Species
C. Diversity of Life on Earth
   1. The Origin of Diversity of Life
   2. Seedless Plants
   3. Seed Plants
   4. Animal Diversity and the Evolution of Body Plans
D. Animal Form and Function
   1. The Animal Body and Principles of Regulation
E. Ecology and Behavior
   1. Behavioral Biology
   2. The Biosphere
   3. Conservation Biology