University of Arkansas – Fort Smith
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General Syllabus

BIOL 42103 Virology

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

Prerequisite: BIOL 20003/20001 General Microbiology/ Lecture

Effective Catalog: 2018~2019

I. Course Information

A. Catalog Description
A study of the representative bacterial, animal, and plant viruses.

II. Student Learning Outcomes

A. Subject Matter
Upon completion of this course the students will be able to:

1. Describe and analyze the structure of a typical virus
2. Evaluate the diversity of viruses
3. Compare and contrast viral methods of host cell entry
4. Compare and contrast viral replication methods
5. Compare and contrast viral methods of host cell escape
6. Characterize various roles viruses play in nature

B. University Learning Outcome
Virology enhances student abilities in the following areas:

Communication Skills
Students will appropriately communicate factual information and reasoning in a written form via essay exam questions and written analysis of primary literature. Students will communicate factual information and reasoning verbally in a socially appropriate manner by interacting with classmates in small group settings when discussing literature.

Ethical Decision Making
Students will identify ethical dilemmas appropriate for use of animal or human subjects in scientific research.

Analytical Skills
Quantitative Reasoning: Students will utilize a number of mathematical models commonly used in virolgy research. Students will critically evaluate scientific papers obtained from primary sources.

III. Major Course Topics

A. Structure and classification
   1. Virus types
   2. Classification systems
B. The process of infection
   1. Animal cells
   2. Plant cells
   3. Bacterial cells
C. Viral replication
   1. RNA viruses
   2. DNA viruses
   3. Retroviruses
D. Viruses and hosts
   1. Infection
   2. Immunity
   3. Transmission
   4. Viruses in populations
E. Viral Evolution
   1. Viruses and selection
   2. Emerging viruses