

### **MBIO 2014 General Microbiology**

**Catalog Description:** Survey of microorganisms, their role in the ecosystem, their impact on and use by man. The basic structure, growth and metabolism of bacteria and viruses will be examined. Immunological principles and their application to microbiology will also be presented. Emphasis in laboratory on sterile technique and culturing microorganisms on various diagnostic media. Three hours lecture and three hours lab weekly.

**Prerequisite:** Anatomy & Physiology I (BIOL 2214) with a grade of "C" or better or both Principles of Biology I (BIOL 1544) and Fundamentals of Chemistry (CHEM 1074) with grade(s) of C or better. (Other chemistry or biology courses may also meet prerequisite requirements, for further information please contact the Science Department.)

**Credit hours/ Contact hours/ Load hours:** 4/6/5

**Target Audience/ Transferability:** MBIO 2014 is an introductory microbiology laboratory science course appropriate for science majors and non-majors alike. . The course applies toward the general education requirements for baccalaureate degrees granted by state-funded colleges and universities. This course transfers to the University of Arkansas as 2013 and 2011L. Students should consult the degree plans of transfer institutions to determine how the course transfers in a particular program. This course is also required for students in respiratory therapy and nursing AAS degrees.

**Student Learning Outcomes:** Students completing this course will:

- Explain how scientific processes apply to the understanding of microorganisms.
- Identify the impact of microbes on life at the individual, societal, and ecological levels.
- Define terms and explain microbiological principles sufficient for professional application and further study.
- Demonstrate basic microbial lab techniques and analyze experimental results.
- Develop writing and research skills.

**Topics:** MBIO 2014 is conducted in accordance with the Undergraduate Microbiology Curriculum Guidelines recommended by the American Society for Microbiology Core Themes and Concepts:

- Microbial Cell Biology
- Microbial Genetics
- Microbial Interactions and Impact of Microbes on Humans, which include
  - Host-microbe interactions that result in infection
  - Principles of epidemiology as they apply to the effect of microorganisms on the human population
  - General methods for the prevention and control of infectious disease transmission
- Microbial Interactions and Impact of Microorganisms in the Environment
- Integrating Themes of Microbiology

Northwest Arkansas Community College  
Division of Science & Mathematics

Historical events key in the development of microbiology included as appropriate to each topic

**Forms of Assessment:**

Minimum requirements:

- Written exams that include higher order thinking questions
- Lab notebooks/ write-ups
- Summary or interpretation of at least one scientific article
- Literature research paper or presentation
- Final exam that includes some comprehensive questions.