

COCONINO COMMUNITY COLLEGE  
COURSE OUTLINE

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Revised by: M. Inigo  
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Status: Permanent  
Effective: Fall 2016

December 4, 1991 General  
March 23, 2001  
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February 01, 2016

- A. Identification:
1. Subject Area: Biology (BIO)
  2. Course Number: 205 SUN #BIO 2205
  3. Course Title: Microbiology
  4. Credit Hours: 4
  5. Course Description: Microbes and their relationships to health, ecology, and related areas. Prerequisite: BIO 181 or Consent of Instructor. General Education: Physical and Biological Sciences. Three lecture. Three lab. Fall, Spring.
- B. Course Goals: To give students a greater understanding of the principles of microbiology and the role that microbes play in everyday life.
- C. Upon completion of this course, student will be able to
1. categorize microorganisms by domain and kingdoms and explain the relationship among the biological domains;
  2. communicate laboratory results in written form;
  3. identify and describe the common morphologies among bacteria;
  4. describe bacterial growth at the cellular and population levels;
  5. describe the major metabolic pathways and relate them to microbial growth and ecology;
  6. describe microbial genetics, including mechanisms of genetic recombination;
  7. list and describe the events of a viral multiplication cycles;
  8. explain the fundamental principles of antimicrobial therapy and describe the common modes of action of antimicrobial drugs
  9. and discuss commercial, industrial, and biotechnological applications of microbes.
- D. Course Outcomes Assessment will include:
1. course grades determined by the instructor as outlined in the course syllabus;
  2. comprehensive final exam
  3. and instructor-evaluated long-term project.
- E. Course Content will include:
1. cellular and colonial morphology of microbes;
  2. microbial Nutrition and metabolism;
  3. microbial genetics;
  4. infectious disease and antimicrobial resistance;
  5. bacteria and archaea;
  6. viruses and other noncellular pathogens;
  7. protozoa, algae, fungi, and parasitic worms;

8. mechanical, Chemical, and Physical Control of Microorganisms;
9. antimicrobial agents chemotherapy;
10. environmental microbiology;
11. applied and industrial microbiology;
12. the human microbiota and its relationship to human physiology and health;
13. major concepts related to the history of modern microbiology;
14. and tools and techniques of the microbiology laboratory.