

## **BIO205: Microbiology for Health Professionals**

**Lead instructor: Mark Rosati, 602-285-7101**

### **ASU Transfer Information:**

- MIC 205 (3), MIC 206 (1) , Natural Science - General (SG), Natural Science - General (SG)
- NOTE: May not be used for Microbiology Major Credit unless a diagnostic test is passed.

### **Lecture Format:**

- Power Point is used during every lecture period to present lecture material.
- Power Point outlines are provided to supplement every lecture.
- Students are expected to take additional notes during lecture.
- Online and written study guides are provided to supplement every lecture.

### **Laboratory Format:**

- Hands-on activities are performed during every lab session by individual students or groups of 4.
- Activities include exposure to microorganisms and chemicals.
- Each student is expected to demonstrate their proficiency at operating lab equipment.
- Activities include weekly data acquisition and 2 formal written laboratory reports.

### **Examination and Quiz Format:**

- In class multiple-choice and short answer exams (4).
- In class short answer and multiple choice quizzes (4).
- Optional cumulative multiple choice final (1).

### **Assignments:**

- Readings in chapters (16) of textbook (students may choose textbook from selected list).
- Group presentations (poster and PowerPoint) (2 Robin Cotter only).
- Research papers (2).
- Scientific lab papers (2).

### **Attendance:**

- Attendance is required and will be recorded in both lecture and laboratory.

**Prerequisites:**

- High school biology with a grade of C or better; BIO 156 or BIO 181 is highly recommended.
- Students are expected to have a basic understanding of the following:
  1. Cell structure
  2. Membrane structure
  3. Membrane function
  4. DNA replication
  5. Protein synthesis
  6. Enzymes
  7. Metabolism
  8. Cell respiration and fermentation
  9. Cell reproduction
  10. Mendelian genetics
  11. Chemistry of solutions
  12. pH, acids, bases, and buffers
  13. Osmosis and diffusion
  14. Use of microscopes
  15. Use of balances
  16. Use of pipettes & volumetric devices
  17. Use of pH meters
  18. Use of spectrophotometers

**Skills that help students succeed in this course:**

- Ability to understand written and verbal instructions are essential.
- Strong study habits and time management skills are essential.
- College level reading and writing abilities are important.
- High School Algebra skills and basic computer literacy are important.
- Basic computer literacy is important (navigating the internet, using search engines and searching library data bases).