DIVISION OF ARTS AND SCIENCES  
DEPARTMENT OF NATURAL SCIENCES  
COURSE SYLLABUS

COURSE/COURSE NUMBER/ CREDIT HOURS

Microbiology MCB 2010 ; CRN 10929 ; 3.0 Credit Hours (Fall 2014 Semester)

PREREQUISITES

BSC 1010 and CHM 1045 with a grade of C or better

CLASS MEETING TIMES

Lecture: 0930-1215 Tuesday, Room D110  
Lab: 0930-1215 Friday, Room D109

CLASS METHOD

Traditional Classroom Course (class meets in person)

INSTRUCTOR

Mark Preziosi  
markpreziosi@hotmail.com  
805-813-5407 (cell)

OFFICE HOURS

By scheduled appointment only.

COURSE DESCRIPTION

Includes a description and taxonomy of microorganisms including bacteria, viruses, protozoa and fungi. Involves discussion of the history, significance and applications of the field. Presents lecture, Socratic hybrid online distance learning and hands-on experience with differential staining, selective media, sterile transfer and culture techniques. Also addresses regulation of microbial growth, aseptic and antiseptic technique, antibiotic sensitivity and antibiotic therapy, microbial physiology and metabolism, microbial genetics, acquired and innate immunity to microbes, wound healing as it relates to microbial infections, and the ecological and epidemiological aspects of microbial growth. Designed for students in the allied health professions, marine science and those intending to go on to major in other fields in the biological sciences and health professions.

REQUIRED TEXTBOOK

MICROBIOLOGY: AN INTRODUCTION, 11th edition  
Authors: Tortora, Funke, and Case  
Pearson/Benjamin Cummings Publishers  

RECOMMENDED TEXTBOOK

MICROBIOLOGY DEMYSTIFIED, 2nd edition  
Authors: Betsey and Keogh  
McGraw-Hill Publishers  
ISBN: 978-0-07-176109-3
COURSE OBJECTIVES

Upon course completion, students should be able to:

1. Understand and be familiar with scientific terminology (vocabulary) as it relates to the subject material.
2. Be able to engage in critical thinking such that simple to intermediate microbiological problems can be resolved using data presented in class and/or the course textbook.
3. Understand the unifying principles of biology/microbiology.
4. Become familiar with the basic types of microbial life found within the three (3) domains of life and the process of cellular evolution.
5. Understand basic biological chemistry, prokaryotic/eukaryotic cellular structure and function, aerobic/anaerobic metabolism, photosynthesis, cell membrane morphology and physiology, cell-to-cell communication, and microbial genetics.

COURSE SCHEDULE

Please Note: The course schedule is subject to change as required to meet either course or student needs. If you miss a class, it is YOUR responsibility to stay current.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 Aug 2014</td>
<td>Syllabus Review ; Microbiological Disciplines ; Unifying Principles of Biology ; Characteristics of Life ; Cell Types</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>02 Sep 2014</td>
<td>History of Microbiology ; Water ; Atoms, Elements, Molecules, Compounds</td>
<td>Chapters 1, 2</td>
</tr>
<tr>
<td>09 Sep 2014</td>
<td>Inorganic, Organic, Biochemistry ; Cellular Energy ; Cellular Evolution</td>
<td>Chapters 2, 5, 10 pp. 273-281</td>
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<tr>
<td>16 Sep 2014</td>
<td>Prokaryotic Morphology ; Eukaryotic Morphology</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>23 Sep 2014</td>
<td>Test # 1</td>
<td>Test – 100 Points</td>
</tr>
<tr>
<td>30 Sep 2014</td>
<td>Eukaryotic Morphology ; Cell Membrane Morphology and Physiology</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>07 Oct 2014</td>
<td>Aerobic Respiration ; Anaerobic Respiration/Fermentation</td>
<td>Chapter 5</td>
</tr>
<tr>
<td>14 Oct 2014</td>
<td>Photosynthesis ; Carbon/Nitrogen/Phosphorus/Sulfur Cycles</td>
<td>Chapter 5, 27</td>
</tr>
<tr>
<td>21 Oct 2014</td>
<td>Microbial Growth ; Control of Microbial Growth</td>
<td>Chapters 6, 7</td>
</tr>
<tr>
<td>28 Oct 2014</td>
<td>Test # 2</td>
<td>Test – 100 Points</td>
</tr>
<tr>
<td>04 Nov 2014</td>
<td>Viruses/Bacteriophages/Prions</td>
<td>Chapter 13</td>
</tr>
<tr>
<td>18 Nov 2014</td>
<td>Archaea, Bacteria, Eukarya</td>
<td>Chapters 11, 12</td>
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<tr>
<td>25 Nov 2014</td>
<td>Pathogenic Microbiology</td>
<td>Chapters 11, 12</td>
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<tr>
<td>02 Dec 2014</td>
<td>Host Microbe Interactions ; Antibiotic Therapy</td>
<td>Chapters 15, 20</td>
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<tr>
<td>09 Dec 2014</td>
<td>Test # 3</td>
<td>Test – 100 Points</td>
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</tbody>
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EXAMS

There will be three (3) exams each worth 100 points and each exam will be cumulative to include material presented throughout the entire course. Additionally, each exam may include both lecture and textbook material.

HOMEWORK

Homework is worth 100 points and is due on 18 Nov 2014. Late homework will not be accepted.

All homework is to be submitted in hard-copy format. Electronic submission of homework will not be accepted.

CLASS POLICIES

1. All cell phones are to remain off during class.
2. Missed laboratories cannot be made up for any reason whatsoever. Additionally, homework from missed labs will not be accepted and the student will receive a grade of zero (0) on any missed homework assignment.
3. Makeup tests are allowed only with a written doctor's excuse and must be taken the same day as the final exam.
4. Test dates are available the first day of class and students should prepare in advance to take tests as scheduled. All exams will be closed book/notes.
5. The final exam cannot be made up for any reason whatsoever.
READING ASSIGNMENTS

To succeed in this course each student should minimally read the assigned textbook readings as presented in the course schedule and review class notes frequently. The most successful students are those who form study groups which meet regularly (weekly or more) throughout the course to review material and learn by questioning and teaching each other.

**Vocabulary** is key to success in this course. Failure to master the scientific vocabulary associated with this course will likely result in poor performance on both tests and class participation activities.

PARTICIPATION

Students are expected to attended and participate in every class. Many students are unsuccessful in this course because they believe if they just "show up" they will pass. The lectures address only a sub-set of the material which needs to be mastered and which will be subsequently tested on the exams. **Arriving late, leaving early, cell phone/computer usage or any other disruption of class may result in dismissal from the course.**

GRADING SCALE

This course consists of:

1. Three (3) exams, each worth 100 points
2. Two (2) homework assignments, each worth 100 points

Total possible points available = 500 points

Final grades are a function of total points accumulated during the course as indicated in the table below:

NOTE: Test (exam) scores are not curved and, in the event a test or final grade is lower than expected, extra credit will not be given to raise a grade.

<table>
<thead>
<tr>
<th>Final Grade</th>
<th>Point Distribution</th>
<th>Percentage Distribution</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>450-500</td>
<td>90-100%</td>
</tr>
<tr>
<td>B</td>
<td>400-449</td>
<td>80-90%</td>
</tr>
<tr>
<td>C</td>
<td>350-399</td>
<td>70-80%</td>
</tr>
<tr>
<td>D</td>
<td>300-349</td>
<td>60-70%</td>
</tr>
<tr>
<td>F</td>
<td>&lt;300</td>
<td>&lt;60%</td>
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Students are expected to familiarize themselves with FKCC policies which can be found in the current Student Handbook.