### Course Title
Microbiology Lab

### Course Number
MCB 2010L

### Prerequisites
None

### CRN
11305

### Credit Hours
1.0

### Contact Hours
45

### Class Meeting Times
(Note: the last class meeting is Wednesday, December 16 from 8:00-10:30 am.)

### Class Method
Technology-Enhanced. This course is designed to meet face-to-face and online. Students should access the online portion of the course at: [http://online.fkcc.edu](http://online.fkcc.edu).

### Instructor
Dr. Bill Irwin
william.irwin@fkcc.edu
Office: Key West Campus C-209
Office phone: 305-809-3129

### Office Hours
Office hours for the semester will be posted on my office door (C 209).

### Course Description
Includes a description and taxonomy of microorganisms including bacteria, viruses, protozoa and fungi. Involves discussions of the history, significance and applications of the field. Presents lecture, Socratic, hybrid on line 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.

### Course Objectives
By the end of this course, students should be able to:

- Use appropriate scientific terminology (vocabulary) as it relates to the Microbiology and unicellular organisms;
- Find solutions to problems related to microbiological issues such as pathology or ecosystem influences;
- Explain the principles of biology and microbiology and how living things survive and reproduce;
- Describe the basic types of microbial life found within the three (3) domains of life and the process of cellular evolution;
- Explain basic biological molecules and the chemistry of living organisms;
- Describe prokaryotic and eukaryotic cellular structure and explain the function of cellular structures;
- Explain the processes of aerobic and anaerobic metabolism and photosynthesis;
- Describe cell membrane morphology and physiology;
- Explain cell-to-cell communication and the function of biofilms and other cell communities;
- Explain processes of microbial genetics and biotechnology.
**REQUIRED MATERIALS:** Microbiology: An Introduction Plus MasteringMicrobiology with eText -- Access Card Package, 12/E

**PUBLISHER** ©2016 • Benjamin Cummings

**AUTHORS** Gerard J. Tortora, Berdell R. Funke and Christine L. Case

**ISBN** 9780321928924

**REQUIRED ONLINE ACCESS** When students receive their MasteringMicrobiology (MM) registration code, they should register online and enter course code: MICROFALL2015 to join this course. If students purchase a used textbook, they will need purchase an access code for Mastering Microbiology directly at: http://www.masteringmicrobiology.com.

**PROPOSED COURSE SCHEDULE**

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Topic</th>
<th>Textbook Reading/Study Assignments</th>
<th>Online Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wed</td>
<td>26-Aug</td>
<td>Safety / Mathematics of Microbiology</td>
<td>Appendix B</td>
<td>Online Assignment Lab-A</td>
</tr>
<tr>
<td>Wed</td>
<td>2-Sep</td>
<td>Microscopy</td>
<td>Chapter 3</td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td>9-Sep</td>
<td>Graham Staining</td>
<td></td>
<td>Online Assignment Lab-B</td>
</tr>
<tr>
<td>Wed</td>
<td>16-Sep</td>
<td>Microbial Growth</td>
<td>Chapter 6</td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td>23-Sep</td>
<td>Antimicrobial Chemicals I</td>
<td>Chapter 20</td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td>30-Sep</td>
<td>Antimicrobial Chemicals II</td>
<td>Chapter 20</td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td>7-Oct</td>
<td><strong>Exam #1</strong></td>
<td></td>
<td></td>
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<tr>
<td>Wed</td>
<td>14-Oct</td>
<td>PCR</td>
<td></td>
<td>Online Assignment Lab-C</td>
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<tr>
<td>Wed</td>
<td>21-Oct</td>
<td>Gel Electrophoresis</td>
<td></td>
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<tr>
<td>Wed</td>
<td>28-Oct</td>
<td>Prokaryotes</td>
<td>Chapter 11</td>
<td></td>
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<tr>
<td>Wed</td>
<td>4-Nov</td>
<td>Eukaryotes</td>
<td>Chapter 12</td>
<td></td>
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<tr>
<td>Wed</td>
<td>11-Nov</td>
<td><strong>Veterans Day - No Classes</strong></td>
<td></td>
<td></td>
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<tr>
<td>Wed</td>
<td>18-Nov</td>
<td>Viruses</td>
<td>Chapter 13</td>
<td>Online Assignment Lab-D</td>
</tr>
<tr>
<td>Wed</td>
<td>25-Nov</td>
<td><strong>Thanksgiving Break - No Classes</strong></td>
<td></td>
<td></td>
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<tr>
<td>Wed</td>
<td>2-Dec</td>
<td>Genetic Transformation I</td>
<td></td>
<td>Online Assignment Lab-E</td>
</tr>
<tr>
<td>Wed</td>
<td>9-Dec</td>
<td>Genetic Transformation II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td>16-Dec</td>
<td><strong>Exam #2 (8:00 - 10:30 AM)</strong></td>
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**STUDENT EVALUATION AND COURSE POLICIES**

<table>
<thead>
<tr>
<th>STUDENT GRADE DETERMINATION</th>
<th>FKCC GRADING SCALE</th>
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</thead>
<tbody>
<tr>
<td>40 %</td>
<td>90% or above</td>
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<tr>
<td>2 Exams @ 100 points each = 200</td>
<td>A</td>
</tr>
<tr>
<td>20 %</td>
<td>80%-89%</td>
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<tr>
<td>5 Online Assignments @ 20 points each = 100</td>
<td>B</td>
</tr>
<tr>
<td>40 %</td>
<td>70%-79%</td>
</tr>
<tr>
<td>~10 Quizzes, Exercises &amp; Presentations @ 10-30 points each = 200</td>
<td>C</td>
</tr>
<tr>
<td>(Lab activities will be organized into a &quot;lab notebook&quot; for grading.)</td>
<td>60%-69%</td>
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<tr>
<td>40 %</td>
<td>D</td>
</tr>
<tr>
<td>Total Grade (500 total points)</td>
<td>Below 60%</td>
</tr>
<tr>
<td>100 %</td>
<td>F</td>
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</tbody>
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Communications Policy

- Students are expected to log into the course D2L site regularly (daily is recommended but at least every 48 hours is expected) to read announcements and check the forums.
- Students should utilize the online discussion forums for assistance with questions about course material. Forums may be created by the instructor for discussion of specific course information or for topics such as study group coordination. For general questions, please use the Class Questions forum.
- Occasionally, time-sensitive announcements such as changes in due dates, exam information, etc. will be posted in the Announcements section. The student should log on to frequently (once per day is best but at least every other day is expected) to check for time-sensitive messages. The student is responsible for all information published here. In general, all participants should look through the Discussion Board and Announcements before posting a question because that same question may have already been asked and answered.
- Students should only use their official FKCC email address for class communication. Students are expected to check their FKCC email account regularly. The instructor will only respond to email messages to a student’s official FKCC email address.
- In order to better serve our faculty and students, all D2L users should click the “Logout” link when completing online course work. By logging off instead of just closing the internet browser window, D2L server space is freed and system performance is optimized. Logging off will also more accurately record each student’s time logged into the course.

Reading Assignments and Homework

- To succeed in this course, you should do all assigned textbook readings, preview quizzes, post-class quizzes and online assignments. It is also recommended that you review class notes frequently. The most successful students are usually those who form study groups that meet regularly (weekly or more often) throughout the course to review material and learn by questioning and teaching each other.
- Pre-class homework assignments are designed to reinforce and complement textbook material prior to class. It is advised that you preview each chapter using the chapter summary, study each chapter thoroughly and do the questions at the end of the chapter before completing the online assignment.
- The post-class online assignment will normally be due within a few days after class to give you time to review the material. They are designed to help you assess whether or not you have learned relevant material through textbook reading, online study and class participation. You should be able to complete the online review assignment with the same confidence you would have taking a class exam; if you struggle with the question on the post-class assignment, then you should review the material further and contact your instructor for guidance on how to adjust your learning methods.
- Online homework is worth a substantial portion of your grade. Late homework assignments and online quizzes may be penalized or not be accepted. Do not wait until "the last minute" to do your online assignments as you may have technical problems that may keep you from completing them on time.
- Online assignments can be found on the course website at: http://www.masteringbiology.com. It is the responsibility of each student to be aware of the due dates and times of all assignments as posted on the Mastering Biology website.

Participation

- Participation in every lab session is expected of all students. Due to the nature of the labs, “make-up” sessions will rarely (if ever) be possible. If a student is unable to participate in a lab, they will likely lose substantial grade points.
- Although many activities will be conducted in groups, each student should actively participate. Each student is responsible for developing their own skills and knowledge during the lab sessions!
- Students must keep a lab notebook (a 1 1/2 inch binder will be sufficient) containing all handouts, lab activities, notes, drawings, quizzes and assessments from the course. Students will periodically submit this notebook for grading as directed by the instructor. The notebook should be maintained in an organized, chronological fashion and must be brought to every class section.
• Arriving late, leaving early, cell phone use, non-class-related computer usage or any other disruption of class may result in dismissal from the class.

• Please note that the instructor may withdraw a student from a course for excessive absences. For the purposes of this class, “excessive absences” is defined as any combination of 3 or more absences, late arrivals or times leaving early. "Excused absences," such as those for emergency situations, may be allowed to the purposes or make-up exams or homework but are still considered absences for the withdrawal policy.

• If you are not able to attend class you are still responsible for understanding any and all material that is discussed in class and for obtaining any announcements that were made in class pertaining to the course. It is your responsibility to contact the instructor as soon as possible after your absence to find out what you missed.

• Electronic devices of any kind may not be used in class at any time unless specifically directed by the instructor. Students using electronic devices may be directed to surrender them to the instructor for the duration of the class or directed to leave the classroom for the remainder of the class session; note that this will result in a record of "absent" or "left early" for attendance purposes.

Exam Policy:

• Each exam and exam review will normally take up one entire class meeting. The use of electronic devices is strictly prohibited during exams.

• Makeup exams are generally not offered but may be offered to students with emergencies if they can provide acceptable documentation of the emergency (e.g., hospital admit slip, etc.). The instructor reserves the right to change the format and content of any makeup exams.

• Any missed exam will receive a grade of 0 points in grade calculation.

• The final exam may not be made up for any reason.

Copyright Notice

• The materials and content provided in this course is intended only for registered Florida Keys Community College students who have paid their tuition and fees to attend this course. Materials that are affected include, but are not limited to, text, still images, audio recordings, video recordings, simulations, animations, diagrams, charts, and graphs. Every effort has been made to insure these materials are not disseminated to anyone beyond those who have legally registered for this course. Download, revision, or distribution of course material with anyone other than registered classmates and the instructor is strictly prohibited.

Students are expected to understand and follow all FKCC Policies found in the current Student Handbook.