Syllabus

Course Description

Laboratory experience with brightfield microscopy; aseptic and pure culture techniques; staining and observation of microorganisms; identification of unknown bacteria; environmental influences and control of microbial growth; antibiotic sensitivity and resistance; bacterial examination of water; medical microbiology.

Credit Hours: 2
Prerequisite(s): Credit or concurrent registration in BIOS 350.
Laboratory: Science and Engineering Laboratories-East (SEL-E), Room 3083

Course Objectives

- Learn how to perform basic techniques such as culturing, staining, and microscopy
- Learn and perform tests that are used to identify and characterize bacteria
- Become familiar with microbiological references commonly used by scientists
- Write a scientific paper in grammatically-correct English with proper format and tone
- Learn how to recognize plagiarism and how to avoid plagiarizing reference materials

Staff Information

Coordinator: Andrea McGinley, Ph.D.
E-mail: amario3@uic.edu
Phone: (312) 996-6284
Office: SEL-East, Room 3075 (through 3083)
Office Hours: By appointment.

Blackboard

http://blackboard.uic.edu

Announcements will be e-mailed to you and posted on Blackboard. It is your responsibility to verify the proper functioning of your UIC email address and check this regularly.
Required Course Materials

- **Benson's Microbiological Applications.** Laboratory Manual in General Microbiology, 13th Ed. (short version). 12th edition and used copies are also acceptable.

Purchasing options:

1. A full color, spiral-bound, paperback version of the 13th ed. lab manual is available from the UIC Bookstore ([http://www.uicbookstore.org](http://www.uicbookstore.org)).
2. A full color, electronic version of the 13th ed. lab manual is available from the UIC Bookstore. Ensure you will be able to print pages and bring them to lab before choosing an ebook, and consider the cost of printing throughout the semester.
3. Full-color spiral-bound paperback used copies of the older 12th edition are available from amazon.com and other online sources. Please be aware “used” copies of a textbook used in a microbiology lab may be dirty depending on how meticulous the previous owner was about not touching their lab book with gloved hands, and may be missing some report pages. Exercise page numbers do not always match the 13th edition, but the content is mostly the same.

**PLEASE NOTE:** You must have your own copy (paperback or eBook) of Benson’s Microbiological Applications, 13th or 12th edition. Photocopying the lab manual’s chapters is a violation of copyright law and this will not be condoned by the staff of BIOS 351.

- It is required that you bring your own Black Sharpie marker pens (Fine Point) to every lab session.

- **Beginning on 3/12/15,** you will need a reusable/disposable flame-retardant lab coat. You will be isolating *Staphylococci* and *Streptococci* samples from yourself during these labs, which pose a potential health hazard. These lab coats are available from the UIC Bookstore for $5.99. It is recommended you wear these during the entire semester for your own protection, but they are not required until 3/12/15. Ziploc bags will be provided for you to store your lab coat in lab when not in use. **DO NOT TAKE YOUR LAB COAT HOME AFTER USE.**

- **Beginning on 2/10/15,** you will need a lab notebook that has carbon or carbonless-copy pages for completing your Unknown Identification project. You may use a notebook from another lab class; you will need approximately 20 consecutively-numbered pages.
Course Requirements

Quizzes (Best 10 of approximately 13) 100 points
Laboratory Reports 100 points
Unknown Project Paper 200 points
Practical Examinations 200 points

TOTAL 600 points

Course Grades

<table>
<thead>
<tr>
<th>Point Range</th>
<th>Percentage Range</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 537</td>
<td>90 – 100 %</td>
<td>A</td>
</tr>
<tr>
<td>477 – 536</td>
<td>80 – 89 %</td>
<td>B</td>
</tr>
<tr>
<td>417 – 476</td>
<td>70 – 79 %</td>
<td>C</td>
</tr>
<tr>
<td>357 – 416</td>
<td>60 – 69 %</td>
<td>D</td>
</tr>
<tr>
<td>&lt; 357</td>
<td>&lt; 60 %</td>
<td>F</td>
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Point adjustments will be made to account for variation in the teaching and grading styles of the teaching assistants. At the end of the semester each section’s average will be adjusted upwards to 75% OR the average of the highest scoring section, whichever is higher. This is the curve. Your grade can only increase as a result of the curve, it will not be lowered. After this adjustment to normalize grades between each section, final grades are assigned based on the above point ranges.

Note: students in the sections with the highest averages may not receive an appreciable point adjustment. This reflects the positive influence of your TA on your grade throughout the semester.

Expectations of Students

Academic Integrity

- Any act of academic dishonesty will be punished severely. These acts include but are not limited to falsification of data, plagiarism of published materials, copying of another
Expectations of Students (continued)

student’s work (from this or any other semester), and cheating on quizzes or exams. The UIC Guidelines Regarding Academic Integrity may be found at http://www.uic.edu/ucat/catalog/GR.shtml#qa

Students with Disabilities

Students with disabilities who require accommodation for access and participation in this course should contact the coordinator as soon as possible after the start of the semester. All such students must contact the UIC Disability Resource Center, obtain a Letter of Accommodation (LOA), and submit your LOA to the course coordinator. Appropriate accommodations can then be arranged to support you. Check http://drc.uic.edu/ or call 312-413-2183 for more information.

Health and Safety

You will work with microorganisms in this lab that have the potential to cause human disease. All stock organisms used are certified ATCC strains and are recommended for use in educational Microbiology. Many have been genetically modified to reduce their risk to humans. However, you must still be aware that you are working with live microorganisms with the potential to infect you and others if handled carelessly. Safety procedures are in place to protect you and will be enforced rigorously. More details are found in the “Lab Supplies, Procedures, & Safety” document, which includes a Safety Contract you are required to sign in order to participate in this lab.

Individuals with a normal immune system who follow all safety procedures are at very low risk of becoming ill as a result of handling the microorganisms used in this lab. Students who have a deficiency in their immune system, are taking immuno-suppressant drugs, or are pregnant may be in a higher risk group. These students should consult their physician for advice and notify the course coordinator. Students who are primary care providers for immunosuppressed individuals, infants, or the elderly should be especially rigorous in following safety procedures, such as wearing gloves and lab coat for all labs, and being careful to not touch personal belongings or clothes with their gloves. Leave the germs in the lab; don’t take them home with you! If any of these situations is applicable to you, please discuss your concerns with the course coordinator.

Attendance and Quizzes

- You must attend the lab section for which you are registered. There are no make-up labs; do not assume that it is ok for you to miss lab due to travel plans.
Expectations of Students (continued)

- Pre-lab quizzes are given frequently throughout the term. Therefore, you must come prepared for every lab. Potential quiz questions will be posted on Blackboard to help you in your preparation. Each quiz will be worth 10 points.

- Quizzes are distributed at the beginning of your lab section and are collected after 10 or 15 minutes. If you miss a quiz because of tardiness or absence, you will receive zero (0) points for that quiz. There are no make-up quizzes. At the end of the semester, your quiz score will be the sum of your ten highest-scoring quizzes.

- You are expected to know the names and proper spelling of the organisms, media, and reagents discussed in the laboratory exercises. Each of your answers must sound the same as the actual answer when pronounced out loud. If your answer does not sound the same when pronounced out loud, you will not receive credit for your answer.

Laboratory Reports and Lab Notebook Page Submissions

- Laboratory Reports will be collected as indicated on the Lab Schedule. You must submit all relevant reports before you leave the lab for the day. Under no circumstances will late reports be accepted by your teaching assistant. Each Laboratory Report is worth 10 points.

- Laboratory Notebook Pages from a carbon-copy notebook are required for some labs, as indicated on the schedule. If you fail to submit more than five of the Laboratory Notebook Pages, five points will be deducted from your final point total for each of the additional missing reports. Your teaching assistant may record a report as missing if it is poorly completed.

Unknown Project Paper

- Guidelines for writing the sections of the paper will be posted on Blackboard before the unknown project is completed. When writing your paper, do not use guidelines or students’ papers from previous semesters. This is not acceptable for any reason! In a recent semester, more than 10 students were accused of academic dishonesty because they copied from each other or copied from papers submitted in previous semesters.

- Your assignments will be considered late if submitted any later than 15 minutes after the scheduled beginning of your lab section. The grade you earn will be penalized by 5% for each business day that an assignment is late beginning with the day that the assignment is due. For example-- if an assignment is due in your 12:00 PM section, and you submit your assignment at 12:20 PM, your grade for that assignment will be lowered by 5%.
you submit your assignment after 12:00 PM the next day, your grade will be lowered by 10%.

- If you need to submit an assignment after your lab section has ended for the day, you should bring it to the course coordinator’s office (SEL 3075). If the coordinator is not there, give your paper to the TA inside the lab. They will sign and date the paper and leave it for your TA. You must have someone verify the date and time of your submission. No papers will be accepted outside of normal lab hours – if the lab is closed, you will need to wait until the lab reopens to turn in your assignment.

- Do not email your assignments to your teaching assistant or to the course coordinator. Do not leave your assignments under the door – they will be discarded.

**Practical Examination**

- A comprehensive practical examination will be given in the last lab meeting as indicated on the Lab Schedule.

- Additional information regarding the examination will be posted on Blackboard.

- If you miss the practical examination, you will be assigned a grade of INCOMPLETE ONLY IF YOU 1) contact the course coordinator and 2) provide proof of a valid excuse. Otherwise, you will receive zero (0) points for the final exam and fail the course.