

MICROBIOLOGY LABORATORY

FALL 2013

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<u>Date</u>	<u>LABORATORY</u> <u>Topic</u>	<u>Lab Number</u>
Aug 22	Lab Protocol & Safety	Pages ix - xi
Aug 27	Microscopy, Survey of microorganisms	1,5
Aug 29	Ubiquity of microorganisms, Aseptic technique	6, 8
Labor Day –Sept 2		
Sept 3	Smear prep, Simple and Negative staining	10, 11, 12
Sept 5	Gram stain	14
Sept 10	Spore and Acid fast staining, Motility	15, 16, 17
Sept 12	Pure culture technique, Effect of temp & pH on growth, Anaerobes	9, 19, 26, 28
Sept 17	Enumeration, complete previous labs	20
Sept 19	Skills tests, intro to culture maintenance & prep	18 (demo)
Sept 24	Fermentation tests	38
Sept 26	Hydrolytic tests	39
Oct 1	Decarboxylase Rx, Biochemical tests	40
Oct 3	Complete previous labs	
Oct 8	WBC counts, Review for test	58
Fall Break Oct. 10 -14		
Oct 15	LAB TEST 1	
Oct 17	Unknowns	36
Oct 22	Unknowns	36
Oct 24	Unknowns	36
Oct 29	Unknowns results , Phage lab	36
Oct 31	DNA ext. & PCR	
Nov 5	Gel & Gene Clean	
Nov 7	Oligodynamic effect, Alcohol and antiseptic sensitivity	31, 32, 34
Nov 12	Sequence Analysis, Water quality test	47
Nov 14	Water quality, Staph ID	47, 52

<u>LABORATORY</u>		
<u>Date</u>	<u>Topic</u>	<u>Lab number</u>
Nov 19	Propagated Epidemic, UV effects, Complete previous labs	30, 47
Nov 21	Kirby-Bauer test, Food counts	33, 46
Nov 26	Yogurt Prep, Alcohol conversion, Review session	51
Thanksgiving Break Nov. 27th – Dec 1		
Dec 3	LAB TEST II	

August 28 = Last Day to add or drop without a grade

October 14 = Last day to withdraw with W

**THE DEPARTMENT OF BIOLOGICAL SCIENCES STRONGLY SUPPORTS
THE ACADEMIC HONOR CODE AS STATED IN THE STUDENT HANDBOOK AND
CODE OF STUDENT LIFE AND WILL NOT TOLERATE ACADEMIC DISHONESTY**

Grading:

Laboratory Grade:

Lab Tests & Quizzes: 400 pts
Tests – 150 pts. each
Quizzes – 25 pts. each
Unknown Culture ID 200 points
Lab Notebooks 200 points
Lab Evaluation: 200 points
Attendance – 100 pts.
Skills test – 100 pts.

**Total Points for Course
Grades:**

TOTAL 100 % = 1000 points

A = 90 – 100 %

B = 80 – 89 %

C = 70 – 79 %

D = 60 – 69 %

F = > 60%

W = < 60 %

(+/- Grades will not be assigned in this course)

Lab Tests

Two lab tests will be given each worth 150 points. Test dates are located on the syllabus and will not be flexible. They will consist of a series of questions, short answer, used to evaluate your understanding of laboratory material.

Unknown Culture ID

Identification of an unknown culture will be worth 200 points. Points will come from correct gram staining, and correctly identifying your culture using the techniques learned

in the first half of lab. This is an individual activity meaning you cannot use your peers or your lab TA for help. All literature and on-line data may be used as well as the *Bergey's Manual of Determinative Bacteriology*, identification flow chart, which will be available in the lab.

Lab Notebooks

Every student is responsible for keeping an organized lab notebook worth 200 points. Notebooks will randomly be collected throughout the semester for grading. Grading will be contingent upon the completion of the following standards:

Before coming to class

- *Title and date.* Each entry requires a descriptive title and date with month/day/year, and lab exercise number.
- *Objectives.* Statement of the goals for the lab exercise in a few short sentences or bullets.
- *Methods/Procedures.* Brief description of the laboratory procedure to show that you have read the lab before coming to class. In the case that we are completing multiple exercises be sure to leave room in your notebook to add notes and drawings when needed.
 - Use of drawings and inclusion of data tables is required to make full points.

In class

- *Results.* In this section you will be able to make notes while in lab and include specific data. Also draw pictures of specimen when needed unless part of "laboratory report".
- *"Laboratory Report"* section from each lab exercise in book must be completed in your notebook. This consists of questions and drawings. Please copy information into your spiral notebook and thoroughly complete each report. By writing this in your spiral notebook you will be able to sell back your lab manual.
- *Conclusion,* a brief description of what you learned and observed. List any difficulties you may have encountered, and state the results of your work. If the results were unexpected, reflect on why this may be the case. Remember, this is science and sometimes everything doesn't go as planned.

Lab Evaluation

This evaluation will be based on attendance, preparedness, and participation (disinfect bench before and after, wash hands before and after, appropriate dress, etc.). Skill and efficiency of lab techniques will also be reflected in your lab evaluation points. "Skills tests" will include evaluation on how well you perform an aseptic culture, pure culture, streak plate, and gram stain that you will have learned in previous labs. Culture maintenance will prepare you for unknowns.

Note:

1. **BIOL 425** is a stand alone lab meaning that it can be taken separate from the lecture. However to take the lab you must either be enrolled in the lecture, **BIO 425**, or have taken the lecture portion of the course previously. **BIO 246** lecture **will not** satisfy this requirement.
2. **Test dates** will not be changed except under extraordinary circumstances (e.g. hurricanes, snowstorms, etc).
3. **You are NOT allowed to drop or miss a TEST.** If uncontrollable circumstances prevent you from taking a test, you **MUST** notify the teaching assistant (e.g. telephone and leave a message or email) with an acceptable excuse at or before the time of the test. The instructor reserves the right to define what is an acceptable excuse. General

examples: **Simply not being prepared is NOT an acceptable excuse**, while sickness, family emergencies and transportation problems are generally sufficient excuses.

4. Please be sure to **turn off** your cell phones before laboratory starts and **during exams**. **Restroom breaks** are not allowed during exams.

5. Attendance in **laboratory is mandatory** and any absences could result in a lower lab grade. **Tardiness** is disruptive to the class and could result in lower evaluation scores.

6. A **lab coat** is required for every lab. Safety goggles or glasses will be worn for most labs. A set of colored pencils is needed for laboratory drawings. Sandals and open-toed shoes are not appropriate footwear in lab.

TEXT:

Laboratory: Custom Lab Manual (ISBN-10: 0-39-023963-1) taken from H. J. Benson. Microbiological Applications You must buy a new lab manual – used manuals are unacceptable! Manual are available in local bookstores. Do not order this manual online as the manual is customized for this course (Required)