

## METX 119L, Microbiology Lab Summer Session I, 2018

Instructor: Todd Hillaker  
T/W/Th 8:30am to 12:30pm  
Thimann Labs, room 229

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### Lab Schedule

Week 1	Tue. 6/26 Introduction Lab Safety Ex 1 Microscopy Calibration & Micrometry	Wed. 6/27 Ex 2 Media preparation Ex 3 Serial Dilutions & plating	Thu. 6/28 Ex 3 Serial Dilutions II Ex 1 Microscopy I Simple stain Isolation of a pure strain
Week 2	Tue. 7/3 Ex 4 Water quality analysis Ex 5 Food microbiology Isolation of a pure strain	Wed. 7/4 Holiday No Lab Class	Thu. 7/5 Ex 4 Water quality II Ex 5 Food Microbiology II Ex 1 Microscopy II Gram stain Ex 9 <i>E. coli</i> source tracking
Week 3	Tue. 7/10 Ex 4 Water quality III Ex 1 Microscopy II Gram stain continued	Wed. 7/11 Ex 6 Antibiotic susceptibility testing Ex 1 Microscopy III Phase contrast	Thu. 7/12 Ex 6 Antibiotic susceptibility testing II Ex 7 Growth Kinetics Ex 8 Pure strain (start O.N.)
Week 4	Tue. 7/17 Ex 9 <i>E. coli</i> Source Tracking Genomic DNA isolation Ex 8 Characterization of a pure strain Genomic DNA isolation	Wed. 7/18 Ex 9 <i>E. coli</i> Source Tracking Polymerase chain rxn. Ex 8 Characterization of a pure strain Polymerase chain rxn.	Thu. 7/19 Ex 9 <i>E. coli</i> Source Tracking Agarose gel electrophoresis Ex 8 Characterization of a pure strain II Agarose gel /Sequencing prep Ex 10 Bacteriophage
Week 5	Tue. 7/24 Ex 8 Sequence analysis Ex 10 Bacteriophage II	Wed. 7/25 Ex 10 Bacteriophage III	Thu. 7/26 Lab Practical Exam

**Optional text:** *Prescott's Microbiology*, (On reserve at the science library)  
Recommended: A photographic Atlas for the Microbiology Laboratory

**Grading:** 10% Lab notebook  
65% Laboratory reports/assignments  
15% Lab practical exam  
10% Attendance, class participation, & lab safety

### **Lab notebook**

The importance of recording observations is stressed in this course, and a detailed record of class exercises and experiments is strongly encouraged. Notes should be in chronological order, and include written descriptions and drawings of microorganisms encountered, as well as raw data from experimental procedures. Occasionally, written descriptions and drawings will be turned in for grading. These assignments should be inserted or taped into laboratory notebooks upon return. Your notebook will be assessed periodically for content, and collected for grading at the end of the quarter.

### **Lab reports**

The data collected from experiments conducted in class will be used to generate lab reports. Your reports should follow the format found in the journal *Applied & Environmental Microbiology*. All reports should be typed (double spaced) and include computer-generated graphs and tables as necessary. In some cases, only a partial report will be required depending upon the exercise. Please refer to specific assignment overviews provided.

Each full lab report should include:

- A well thought out title
- A "brief" introduction describing the experiment
- A materials & methods section
- The results of the experiment (text + supporting tables, graphs, & figures)
- A discussion of the results
- A references section

In addition to laboratory reports, there will also be in-class assignments (microscopy work, etc.), homework questions, and library assignments given during the quarter.

### **Exam**

The lab practical will primarily test your understanding of the laboratory materials and methods utilized during the course. The exam will include short answer and multiple choice type questions. Use of laboratory equipment and techniques will be required to answer questions.

### **Attendance & class participation**

The experiments conducted will require the coordinated efforts of at least two, sometimes four, and occasionally all of the students in the class. Some of the class assignments will require the entire time period scheduled to complete. It is therefore imperative that you arrive on time and prepared. Students will be evaluated individually on timeliness, preparation, and participation.

### **Lab safety**

Proper use and disposal of hazardous reagents, live organisms, and equipment is mandatory. Instructions on how to safely handle the materials used in this class will be provided daily.

Final grade assignment: A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F < 60%

**Late Assignments:** All assignments will be collected at the beginning of lab meetings. Late assignments will be penalized 10% of their total point value for each class period they are late.

**Note:** The last day to drop the course is 7/2/18  
The last day to withdraw from the course is 7/13/18