# METX 119L, Microbiology Lab
## Summer Session I, 2017

Instructor: Todd Hillaker  
T/W/Th 8:00am to 12:00noon  
T/W/Th 1:00pm to 5:00pm  
Thimann Labs, room 229  

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## Lab Schedule

| Week 1          | Tue. 6/27 Introduction  
| Lab Safety  
| Ex 1 Microscopy Calibration & Micrometry | Wed. 6/28 Ex 2 Media preparation  
| Ex 3 Serial Dilutions & plating | Thu. 6/29 Ex 3 Serial Dilutions II  
| Ex 1 Microscopy I  
| Simple stain  
| Isolation of a pure strain |
| Week 2          | Tue. 7/4 Holiday  
| No Lab Class | Wed. 7/5 Ex 4 Water quality analysis  
| Ex 5 Food microbiology  
| Isolation of a pure strain | Thu. 7/6 Ex 4 Water quality II  
| Ex 5 Food Microbiology II  
| Ex 1 Microscopy II  
| Gram stain  
| Ex 9 E. coli source tracking |
| Week 3          | Thu. 7/13 Ex 6 Antibiotic susceptibility testing II |
| Tue. 7/11 Ex 4 Water quality III  
| Ex 1 Microscopy II  
| Gram stain continued | Wed. 7/12 Ex 6 Antibiotic susceptibility testing  
| Ex 1 Microscopy III  
| Phase contrast | Thu. 7/14 Ex 7 Growth Kinetics  
| Ex 8 Characterization of a pure strain  
| Ex 9 E. coli Source Tracking Genomic DNA isolation  
| Ex 8 Characterization of a pure strain II |
| Week 4          | Thu. 7/20 Ex 9 E. coli Source Tracking Agarose gel electrophoresis |
| Tue. 7/18 Ex 9 E. coli Source Tracking Polymerase chain rxn.  
| Ex 8 Characterization of a pure strain | Wed. 7/19 Ex 9 E. coli Source Tracking  
| Ex 10 Bacteriophage isolatn. |
| Week 5          | Thu. 7/27 Lab Practical Exam |
| Tue. 7/26 Ex 10 Bacteriophage III  
| Microscopy TBA | Wed. 7/27 Ex 10 Bacteriophage III  
| 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:** Computers are available (for biology lab class assignments only) in Thimann 207.