Biology 119L, Microbiology Lab
Summer Session I, 2009

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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Important Summer Session 2009 Dates

	Session I	7-wk Sess	8-wk Sess	10-wk Sess	Session II
Last day to **enroll/add** online	June 27 (Sat) (11:59 pm)	June 27 (Sat) (11:59 pm)	June 27 (Sat) (11:59 pm)	July 4 (Sat) (11:59 pm)	Aug 1 (Sat) (11:59 pm)
Last day to **drop** online	June 28 (Sun) (11:59 pm)	June 28 (Sun) (11:59 pm)	June 28 (Sun) (11:59 pm)	July 5 (Sun) (11:59 pm)	Aug 2 (Sun) (11:59 pm)
Withdrawal Period at Summer Office (no refund)	June 29 – July 10 (8:00-4:00)	June 29 – July 17 (8:00-4:00)	June 29 – July 24 (8:00-4:00)	July 6 – July 31 (8:00-4:00)	August 3 – August 14 (8:00-4:00)
Note that during Summer Session there is no auditing of classes, no "Add by Petition" and no "Administrative Drop by Instructor". Failure to attend class does not constitute a "Drop". All deadlines are final.					

Lab Schedule

Week 1 Microscopy	Tue. 6/23 Introduction Media preparation Microcosm	Wed. 6/24 Brightfield micro. Micrometry Bacterial staining	Thu. 6/25 Phase contrast micro. Wet mount slide Motility
Week 2 Isolation & Enumeration	Tue. 6/30 Serial dilution Water quality analysis MPN & MF Fomite sampling	Wed. 7/1 Isolation of a pure culture Water quality II MPN & MF Food Safety	Thu. 7/2 Isolation II Water quality III MPN Food Safety II
Week 3 Antibiotics & Resistance	Tue. 7/7 Kirby-Bauer method Water quality IV, MPN Bacteriophage isolation	Wed. 7/8 Kirby-Bauer II Phage isolation II	Thu. 7/9 Growth kinetics Phage isolation III Effects of UV light

Week 4 Identification of an Unknown	Tue. 7/14 Strain characterization Fluorescence micro.	Wed. 7/15 Strain characterization II Library	Thu. 7/16 DNA fingerprinting Genomic DNA extract
Week 5 Molecular Techniques	Tue. 7/21 DNA fingerprinting PCR amplification	Wed. 7/22 DNA fingerprinting Gel electrophoresis & analysis	Thu. 7/23 Lab Practical

Text: *Brock Biology of Microorganisms,* (On reserve at the science library)
Suggested reading: *Bergey's Manual of Determinative Bacteriology* (Science library)

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

Lab reports

Students will be required to report on assigned experiments. Each lab report should include:

- A "brief" introduction of the experiment(s) conducted. (One or two paragraphs)
- The results of the experiment(s). Often in the form of tables, graphs, & figures.
- A discussion of the results. The discussion section should include any conclusions that can be drawn from the results, and thoughts on a future experiment that would follow naturally.

The reports should be typed (double spaced) and include computer-generated graphs and tables as necessary. Papers should be brief. Answers to any assigned questions should be included on a separate page.

Lab notebook

The importance of recording observations is stressed in this course. Students will be encouraged to keep a detailed record of the experiments performed during the course. 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.

Exam

The lab practical will primarily test students on their 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 students 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.