



School of Molecular & Cellular Biology
MCB 101, Spring 2025
Introductory Microbiology Lab

Instructor

Renee Alt
232 Burrill Hall
rlalt@illinois.edu
217-333-4306

Instructional Team

Brooke Burris Sections: E and F E-mail: bburris2@illinois.edu	Molly Crowder Sections: Prep Email: mollykc2@illinois.edu	Meghan Connolly Sections: D Email: meghanc6@illinois.edu
Lewis Kwon Section: B and G E-mail: ohhyunk2@illinois.edu	Lauren Buccelli Sections: A and C E-mail: lkb4@illinois.edu	

Class Meeting Schedule

Double weekly sessions on either Monday/Wednesday or Tuesday/Thursday.

Course Overview and Description

Laboratory introduction to the techniques employed in the investigation of microbial activities and properties; experiments designed to familiarize the student with the handling, identification, and characterization of microorganisms and their activities, particularly those of interest to man.

Course Prerequisites, Requirements met (general education, major, minor)

Credit is not given for both [MCB 101](#) and [MCB 301](#). Prerequisite: Credit or concurrent registration in [MCB 100](#).

Student Learning Outcomes

At the end of this course students will be able to:

(Skills)

- analyze scientific process and results via written communication.
- critically assess material prior to manual application and execution of experiments.
- apply mathematical concepts to biological processes and phenomena.

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- construct an appreciation for the presence of bacterial life in various environments.

(Content)

- demonstrate proficiency with basic microbiological techniques.
- illustrate the need for energy and the means to make it.
- explain modes of organismal adaptation.
- employ microbiological techniques, such as staining, observation and biochemical assessments, to discriminate between bacterial strains for identification.

Course Text/Materials Information (both required and recommended)

Required Course Materials:

1. “Introductory Experimental Microbiology: Laboratory Protocols for MCB 101, **Fall 2024**”. Michael Reno, Richard Gonigam, Elizabeth Haywood and Renee L. Alt.
2. Ruler and non-graphing Scientific Calculator, required at every lab and exam

Course Website, Course Tools

Course LMS Canvas <https://canvas.illinois.edu/>

Canvas login: netid password: AD password

Grading Information and Breakdown

All point totals are estimates and may be altered slightly throughout the course of the semester. Students who add the course late, any missed assignments will be counted as your drops.

1. Student grades in MCB 101 will be based on a total of 1000 points. Categories listed below are approximate, but should closely resemble the final distribution.

A. Exams

Midterm Exam	100 points possible
Final exam	100 points possible

B. Lab Assignments

11 Lab Homeworks (20 pts. each; drop 3)	160 points possible
11 Lab notebook assignments (pts. vary)	458 points possible
22 Lab Attendance (6 pts each day, drop 2)	132 points possible
Lab Practical exam (1 day)	50 points possible

Total lab points:	1000 points possible
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All point totals are estimates and may be altered slightly throughout the course of the semester. Students who add the course late, any missed assignments will be counted as your drops.

2. The point totals contained in the following table represent the use of the plus/minus grading system coupled with a 4.0 grade point system. The University has assigned the grade point values shown for each letter grade. Students who earn the points shown below (out of 1,000 possible points) will be guaranteed the indicated letter grade. At semester's end, after the final exam, the faculty will analyze the course grade distribution, and may decrease (to accommodate poor class performance on an examination), but will not increase the points needed for each grade.

MCB 101 Standard Grade Scale

Letter Grade	Point Ranges	Grade Point Value
A+	1000–920	4.000
A	919-883	4.000
A-	882-850	3.667
B+	849-817	3.333
B	816-783	3.000
B-	782-750	2.667
C+	749-717	2.333
C	716-683	2.000
C-	682-650	1.667
D+	649-617	1.333
D	616-583	1.000
D-	582-550	0.667
F	549-0	0.000

MCB 101 Experimental Microbiology
WEEK-BY-WEEK SCHEDULE Spring 2025
WEEK 1 Day 1 W/Th January 22/23, 2025 No Labs Will Meet These Days
WEEK 2 Day 2 M/Tu January 27/28, 2025 Review of Class Information/Policies Review of Basic Laboratory Safety 1: Streak Plate and Aseptic Technique Day 3 W/Th, January 29/30, 2025 1: Streak Plate, Evaluations 1: Spread Plate 1: Simple Stain 2: Gram Stain
WEEK 3 Day 4 M/Tu, February 3/4, 2025 1: Spread Plate, Evaluations 2: Acid-Fast Stain; Spore Stain; Negative Stain; Capsule Stain Last day to add a course into student schedule. Day 5 W/Th, February 5/6, 2025 3: Effectiveness of hand cleaners and RODAC plating, Day 1 Experiment 1 Homework due at 11:59pm February 4

WEEK 4

Day 6 M/Tu, February 10/11, 2025

3: Effectiveness of hand cleaners and RODAC plating, Day 2

4: Enzymes & Environmental Adaptations, Day 1

Lab Report 2 due in Canvas at 11:59pm February 5/6 depending on section

Experiment 2 Homework due at 11:59pm February 6

Day 7 W/Th, February 12/13, 2025

4: Enzymes & Environmental Adaptations, Day 2

6: *Lactobacillus* fermentation of milk and Fermentation of cabbage, Day 1

Experiment 3 Homework due at 11:59pm February 8

WEEK 5

Day 8 M/Tu, February 17/18, 2025

6: *Lactobacillus* fermentation of milk and Fermentation of cabbage, Day 2

Lab Report 3 due in Canvas at 11:59pm February 17/18 depending on section

Experiment 4 Homework due at 11:59pm February 18

Day 9 W/Th, February 19/20, 2025

6: *Lactobacillus* fermentation of milk and Fermentation of cabbage, Day 3

Lab Report 4 due in Canvas at 11:59pm February 19/20 depending on section

WEEK 6

Day 10 M/Tu, February 24/25, 2025

6: *Lactobacillus* fermentation of milk and Fermentation of cabbage, Day 4

Day 11 W/Th, February 26/27, 2025

6: *Lactobacillus* fermentation of milk and Fermentation of cabbage, Day 5

WEEK 7

Day 12 M/Tu, March 3/4, 2025

8: *E. coli* and Coliforms, Day 1

7: Biochemical Tests, Day 1

Experiment 5 Growth Curve (Lab Report) opens in Canvas at 2pm March 4

Experiment 6 Homework due at 11:59pm March 4

Day 13 W/Th, March 5/6, 2025

8: *E. coli* and Coliforms, Day 2

7: Biochemical Tests, Day 2

Lab Report 6 due in Canvas at 11:59pm March 5/6 depending on section

Thursday, March 6, 2025

Exam 1: Covers: Aseptic Technique and Brightfield Microscopy, Staining Techniques in Microbiology, Fomites, Enzymes and Environmental Adaptations, Bacterial Fermentation of Food Products

WEEK 8

M/Tu, March 10/11, 2025

NO LABS WILL MEET THESE DAYS

Day 14 W/Th, March 12/13, 2025

8: *E. coli* and Coliforms, Day 3

Experiment 7 Homework due at 11:59pm March 13

DROP DEADLINE

WEEK 9

Saturday March 15-Sunday March 23, 2025

SPRING BREAK-NO CLASSES