

**MB 441/541 Lab Schedule – Winter 2018**

	<b>Date</b>	<b>Activity</b>	<b>Notes</b>
<b>Week 1</b>	Tues, Jan. 9	Appendix A	Introduction to project, streak plate & microscope
		Exercise 1	Standard Plate Count (SPC)/Spiral Plating
		<b>Food Project</b>	<b>Part I: Food Selection (due by end of lab)</b>
<b>Week 2</b>	Tues, Jan. 16	<b>Dilution Problems</b>	<b>Due at beginning of lab</b>
		Exercise 1	finish
		Exercise 2	Direct Microscopic Count (DMC)
		Exercise 3	Preservatives
<b>Week 3</b>	Tues, Jan. 23	<b>Exercise 1</b>	<b>Report due at beginning of lab</b>
		<b>Exercise 2</b>	<b>Worksheet due at beginning of lab</b>
		Exercise 3	finish
		Exercise 4	Pasteurization ( <b>prepare dilution scheme</b> )
		Exercise 5	Bacteriophages
<b>Week 4</b>	Tues, Jan. 30	<b>Food Project</b>	<b>Part II: Research of Food (uploaded into Canvas by each student, by 5 pm)</b>
		Exercises 4, 5	finish
		Exercise 6	Rapid Methods of Food Analysis: DNA isolation, PCR
<b>Week 5</b>	Tues, Feb. 6	<b>Exercise 3</b>	<b>Report due at beginning of lab</b>
		Exercise 6	finish
		Exercise 7	Traditional Methods - <i>Salmonella</i>
		Exercise 8	Rapid Methods of Food Analysis: ELISA
<b>Week 6</b>	Tues, Feb. 13	<b>Exercises 4, 5</b>	<b>Reports due at beginning of lab</b>
		<b>Food Project</b>	<b>Part III: Dilution Schemes (due at beginning of lab)</b>
		Exercise 7, 8	finish
		Exercise 9	Computer Modeling
<b>Week 7</b>	Tues, Feb. 20	<b>Exercise 6</b>	<b>Report due at beginning of lab</b>
		Food Project	Part I: Spoilage Organisms = Standard Plate Count, Yeast & Molds, <i>Pseudomonas</i> , Psychrotrophs, <i>Bacillus</i> , Lactic Acid Bacteria (LAB)
<b>Week 8</b>	Tues, Feb. 27	Food Project	Part II: Indicator Organisms = Coliforms.
		<b>Exercises 7, 8, 9</b>	<b>Worksheets due at beginning of lab</b>
<b>Week 9</b>	Tues, March 6 Mon, March 12	Food Project	Plate counts
		<b>Final Exam</b>	<b>2 hours</b>
<b>Week 10</b>	Tues, March 13	<b>Food Project</b>	<b>Part IVa: PowerPoint presentation due by 5 pm</b>
			<b>Part V: Written Report (uploaded into Canvas by each student, by 5 pm)</b> <b>Part IVb: Oral Report presented during lab (Session 1: 8:30-10:25, Session 2: 10:25-12:20)</b>

**All items are due by 8:30 am (at the start of lab), unless otherwise indicated.**

### **Learning Outcomes for MB 441/541**

1. Demonstrate the ability to perform basic microbiological techniques used in the food industry
2. Accurately report observations made during laboratory exercises.
3. Expected to acquire ability to conduct and analyze experimental measurements relevant to microbiology.
4. Acquire basic skills needed to learn detailed food microbiological procedures as the need arises.
5. Acquire the ability to use the primary literature to search for information on food-borne pathogens and properties of foods.
6. Make predications, assess and articulate for a specific food the microorganisms important in quality, spoilage and disease.
7. Graduate students will have to demonstrate detailed understanding about a particular food and the microorganisms important in spoilage and disease.

### **Learner Expectations:**

1. Attend lab (on time) and stay the entire lab period.
2. Read laboratory exercises in lab manual before they are to be performed.
3. Bring lab manual to class.
4. Come prepared to take final exam (i.e. do not wait until the night before to cram).
5. Participate in learning activities and complete tasks on time.
6. Be a good team player and do not let other members of the team do all the work.

## BASIC INFORMATION

### Instructor

Dr. Linda Bruslind, Nash 322, 737-1842, bruslindl@oregonstate.edu

### Pre-requisites/Co-requisites

Pre-requisites: MB 302, MB 303; Co-requisite: MB 440/540

### Office Hours

During lab periods or by appointment (email instructor for available days/times)

### Required Learning Resources

- MB 441/541 lab manual
- Compendium of Methods for the Microbiological Examination of Foods (on reserve in library, one copy in Dr. Bruslind's office for borrowing in vicinity)
- FDA Bacteriological Analytical Manual or BAM (on the web)
- Modern Food Microbiology, 7<sup>th</sup> edition by Jay (text for MB 440/540)
- The USDA National Nutrient Database for Standard Reference (on the web)

### GRADING (approximate, subject to marginal changes)

Final Exam	35 pts.
Food Project	160 pts.
Dilution Set	15 pts.
Lab Worksheets (4)	40 pts.
<u>Lab Reports (5)</u>	<u>125 pts.</u>
Total	375 pts.

Final grades are assigned on a straight percentage basis: 93-100% = A; 90-92% = A-; 87-89% = B+; 83-86% = B; 80-82% = B-; 77-79% = C+; 73-76% = C; 70-72% = C-; 67-69% = D+, 63-66% = D, 60-62% = D-, below 60% = F. There will be no curve, if the average is above 75%. If you choose S/U grading, you need to get 70% (C-) to get an "S". Election of S/U grading should be known only to the student and their academic advisor.

### Lab coats

Each student must provide their own long-sleeved lab coat, to be left in the lab for the duration of the term or brought by the student each week. **Students without a lab coat will be asked to leave the lab.**

### Care of Valuables

Items of value should **not** be brought to the lab because of danger of theft or damage. The Department of Microbiology is not responsible for personal items brought to lab.

### TurnItIn

Assignments required to be uploaded to Canvas will utilize the plagiarism prevention service TurnItIn to check assignment content against Internet sources, academic journal articles, and the papers of other OSU students, for common or borrowed content. TurnItIn generates a report that highlights any potentially unoriginal text in your paper. Papers submitted through Turnitin will be added to the OSU TurnItIn database and may be checked against other OSU paper submissions. Students retain all rights to their written work.

### Accommodations of Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations.

While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

### **Course Policies**

- **Missed labs:** Attendance is mandatory. Except for extremely exceptional circumstances (as determined by the instructor), **there is no way to make up a missed lab.** If you have more than one absence, you will receive an incomplete if passing the course, an "F" if not passing the course. Arriving at the laboratory more than 10 minutes late two times constitutes an absence.
- **Tardiness:** Students are expected to be on time and be fully participatory for the scheduled lab time. Arriving at lab more than 10 minutes late two times will count as 1 absence. Arriving greater than 30 minutes late to lab will be considered an absence.
- **Missed final exam:** No make-up exam will be given. Missing the final exam will constitute a zero.
- **Lab reports/assignments:** Expectations for the lab reports, worksheets, and the class project are explained in detailed in the following pages. The lab schedule indicates due dates. All assignments are due at the beginning of lab (8:30 am), unless otherwise indicated. Lab items handed in after 8:30 am but before the end of lab (12:20 pm) will be deducted 10%; items handed in before 5 pm on the day due will be deducted 20%. Items handed in the following day before 5 pm will be deducted 50%. After that items will not be accepted.
- **Correspondence:** emails sent to instructors or TAs must be done using a student's ONID account.
- **Grading:** students have 2 weeks from the time that graded items/exams are returned (or available for pick-up) to contest a score. Please look your papers over carefully! Points will be posted on Canvas several times throughout the term. Check to make sure all your grades are recorded correctly.
- **Extenuating Circumstances:** exceptions to the course policies will be made only in the case of truly extenuating circumstances (i.e. serious illness, death in the family, car accident) that are documented (i.e. doctor's note). The instructors retain the right to decide if circumstances are extenuating or not.

### **Prohibited Academic Misconduct:**

<http://studentlife.oregonstate.edu/studentconduct/academicmisconduct>

Students are expected to be honest and ethical in their academic work. Academic misconduct is defined as any action that misrepresents a student or group's work, knowledge, or achievement, provides a potential or actual inequitable advantage, or compromises the integrity of the education process. It includes:

- cheating- use of unauthorized materials, information, tools, or study aids
- falsification- fabrication or invention of any information.
- assisting- any action that helps another engage in academic misconduct.
- tampering- interfering with an instructor's evaluation of work by altering materials/documents.
- plagiarism- representing the words/ideas of another person or presenting someone else's words, data, expressed ideas, or artistry as one's own.

When evidence of academic dishonesty comes to the instructor's attention, the instructor will document the incident, permit the accused student to provide an explanation, advise the student of possible penalties, and take action. The instructor may impose any academic penalty up to and including an "F" grade after consulting with his/her department chair and informing the student of the action taken.

All persons must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office.