

FOOD MICROBIOLOGY LABORATORY FALL 2012

FS 417 (UI & WSU)
MMBB 417 (UI)

Day and Time: Tuesday and Thursday
2:30 - 5:20 PM
Suggested time: 2:00 - 4:50 PM

Location: LIFE 170

Credits: 2

Instructors: Dr. Gulhan Unlu
Associate Professor
School of Food Science

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G. Unlu's Office Hours: By appointment
Set up appointments via phone or email (preferred)
Location: Agricultural Biotechnology 205

N. Tammineni's Office Hours: By appointment
Set up appointments via phone or email (preferred)
Location: AgSci 111

Course Objectives:

Main Objective: Obtain a good understanding of laboratory practices in food microbiology and become qualified for setting up or working in a food microbiology laboratory in the food industry or in the federal/state government.

Specific Objectives:

1. Learn the basic activities in a food microbiology laboratory
2. Learn the specific culture media used in cultivation and enumeration of food-borne spoilage and pathogenic bacteria
3. Learn how to isolate, enumerate, and confirm a variety of food-borne pathogenic bacteria
4. Develop an understanding of factors affecting microflora of foods

Course Outline:

<u>Period</u>	<u>Day</u>	<u>Date</u>	<u>Topic</u>
1	T	8/21	Introduction Safety in the food microbiology laboratory <i>No lab report due</i>
2	R	8/23	Basic activities in the food microbiology laboratory (Preparing dilution blanks and media) <i>Combined (8/23, 8/28, and 8/30) lab report due by 9/13</i>
NA	T	8/28	NO LAB – DR. UNLU IS OUT OF TOWN.
3	R	8/30	Basic activities in the food microbiology laboratory (Bacterial transfers, isolating single colonies, preparing slides, simple stain, gram stain) <i>Combined (8/23, 8/28, and 8/30) lab report due by 9/13</i>
4	T	9/4	Basic activities in the food microbiology laboratory (enumeration of food-borne microorganisms) <i>Combined (8/23, 8/28, and 8/30) lab report due by 9/13</i>
5	R	9/6	Water microbiology/Comparison of enumeration methods for coliform and <i>Escherichia coli</i> <i>Lab report due by 9/18</i>
6	T	9/11	Sanitation microbiology <i>Lab report due by 9/20</i>
7	R	9/13	QUIZ 1 Effect of pH and water activity on microbial growth <i>Lab report due on 9/25</i>
8	T	9/18	Rapid identification <i>Lab report due by 10/2</i>
9	R	9/20	Microbiology of fresh fruits and vegetables <i>Lab report due on 10/11</i>
10	T	9/25	Microbiology of sugar products <i>Lab report due on 10/9</i>

Microbiology of canned foods
Lab report due on 10/9

11	R	9/27	Dairy Fermentations Lab report due on 10/18
12	T	10/2	Dairy Fermentations Lab report due on 10/18
13	R	10/4	<i>Bacillus cereus</i> Lab report due 10/25 <i>Clostridium perfringens</i> Lab report due by 10/25
14	T	10/9	QUIZ 2 <i>Bacillus cereus</i> Lab report due 10/25 <i>Clostridium perfringens</i> Lab report due by 10/25
15	R	10/11	<i>Bacillus cereus</i> Lab report due by 10/25 <i>Clostridium perfringens</i> Lab report due by 10/25
16	T	10/16	<i>Bacillus cereus</i> Lab report due by 10/25 <i>Clostridium perfringens</i> Lab report due by 10/25
17	R	10/18	<i>Staphylococcus aureus</i> Lab report due by 11/6
18	T	10/23	<i>Staphylococcus aureus</i> Lab report due by 11/6
19	R	10/25	<i>Staphylococcus aureus</i> Lab report due by 11/6 <i>Listeria monocytogenes</i> Lab report due by 12/4
20	T	10/30	<i>Staphylococcus aureus</i> Lab report due by 11/6

				<i>Listeria monocytogenes</i> Lab report due by 12/4
				<i>Campylobacter</i> Lab report due by 11/29
21	R	11/1		<i>Listeria monocytogenes</i> Lab report due by 12/4
				<i>Campylobacter</i> Lab report due by 11/29
22	T	11/6	QUIZ 3	<i>Listeria monocytogenes</i> Lab report due by 12/4
				<i>Campylobacter</i> Lab report due by 11/29
23	R	11/8		<i>Listeria monocytogenes</i> Lab report due by 12/4
				<i>Campylobacter</i> Lab report due by 11/29
24	T	11/13		<i>Listeria monocytogenes</i> Lab report due by 12/4
				<i>Campylobacter</i> Lab report due by 11/29
25	R	11/15		<i>Listeria monocytogenes</i> Lab report due by 12/4
				<i>Campylobacter</i> Lab report due by 11/29
NA	T	11/20	FALL RECESS (NOV 21-25, 2012)	
NA	R	11/22	FALL RECESS (NOV 21-25, 2012)	
26	T	11/27		<i>E. coli</i> Lab report due by 12/6
				<i>Salmonella</i> Lab report due by 12/13

27	R	11/29	<i>E. coli</i> Lab report due by 12/6
			<i>Salmonella</i> Lab report due by 12/13
29	T	12/4	<i>Salmonella</i> Lab report due by 12/13
30	R	12/6	<i>Salmonella</i> Lab report due by 12/13
NA	W	12/12	QUIZ 4 [Time: 12:30-2:30]
NA	T	12/18	FINAL GRADES DUE

Attendance: Attendance is mandatory. There will not be any make-up lab practices. One absence per student per semester is allowed if the student can demonstrate due cause for the absence such as jury duty, court appointments, hospitalization, traffic accidents, essential travel, etc. Excused absences will be granted upon submission of appropriate documentation (e.g., illness with a physician's note).

Laboratory Format: The format of the class will be a combination of laboratory practices, reading and tabulating results, discussing results, quizzes, etc.

Laboratory Manual:

1. The lab manual is available for purchase at the University of Idaho Bookstore.
2. You will also be provided with the links to the supplemental documents that could not be included in the lab notebook due to copyright issues – you are responsible for printing out these documents and bringing them to the lab.
3. Hard copies of any additional material will be provided.
4. You will need to take some additional notes during laboratory practices. Please bring in a notebook, or a notepad to the lab.

Reading: You will need to read the labs prior to the laboratory practices.

Questions/Class Discussions: Asking relevant questions and participating in class discussions is highly encouraged. Your final grade depends not only on your lab reports and quizzes but also on your participation in the course.

Quizzes: There will be four quizzes. Each quiz will be worth 100 points. The quizzes will consist of short-medium answer questions. Make-up quizzes will not be given unless you can demonstrate due cause for the absence such as jury duty, court appointments, hospitalization, traffic accidents, essential travel, etc. Excused absences will be granted upon submission of appropriate documentation (e.g., illness with a physician's note).

Lab reports: There will be several laboratory reports. Each report will be worth 100 points. Reports must be word-processed. Reports are usually due one week after the completion of experiment. Points will be deducted for late reports. The later you submit your lab report the more the point deduction you will get. Lab reports will be graded by your TA and will be returned in 2 weeks after the collection. A lab report will consist of date, title, objectives, materials & methods, results, discussion, and references. The materials

and methods used in the experiment should be described very briefly. Results and Discussion are the most important parts of your laboratory reports. Your results should be included in the “results” section of your report. Your results should be interpreted in the “discussion” section of your report. Any reference you refer to should be cited in your laboratory report following the style of the American Society for Microbiology (ASM) journals. You may pick **two** labs out of all labs up to and including **Lab 8: Sugar Products and Canned Foods** (absolutely your choice) and decide not to submit the relevant lab reports. In addition, you may pick any **two** labs from the remaining labs (**Lab 9: Dairy Fermentations to Lab 16: EHEC**) and decide not to submit the relevant lab reports. My intention is to give you and your TA some breaks. However, questions from **all labs** will appear in quizzes.

University of Idaho Classroom Learning Civility Clause: In any environment in which people gather to learn, it is essential that all members feel as free and safe as possible in their participation. To this end, it is expected that everyone in this course will be treated with mutual respect and civility, with an understanding that all of us (students, instructors, professors, guests, and teaching assistants) will be respectful and civil to one another in discussion, in action, in teaching, and in learning.

Should you feel our classroom interactions do not reflect an environment of civility and respect, you are encouraged to meet with your instructor during office hours to discuss your concern. Additional resources for expression of concern or requesting support include the Dean of Students office and staff (5-6757), the UI Counseling & Testing Center’s confidential services (5-6716), or the UI Office of Human Rights, Access, & Inclusion (5-4285).

Reasonable Accommodation Statement:

WSU

Pullman Campus Syllabus Statement:

Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Access Center (Washington Building 217) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center.

Distance Course Statement:

Reasonable accommodations are available for students with a documented disability. WSU Online and the Access Center work together to provide reasonable accommodations for students who have documented disabilities and who are registered both with WSU Online and the Access Center. WSU Online’s liaison to the Access Center will assist you in getting started. To begin this process, contact WSU Online (800-222-4978 or distance@wsu.edu). We strongly recommend that you notify us as soon as possible. All accommodations must be approved through the Access Center.

Statements also at:

<http://accesscenter.wsu.edu/default.asp?PageID=5626>

Contact: Melynda Huskey melyndah@wsu.edu

UI

Reasonable accommodations are available for students who have documented temporary or permanent disabilities. Please notify your instructor(s) during the first week of class regarding accommodation(s) needed for the course. All accommodations must be approved through Disability Support Services located in the Idaho Commons Building, Room 306; phone 885-6307; email at dss@uidaho.edu; website at www.access.uidaho.edu or www.webs.uidaho.edu/taap.

Plagiarism statement and link to WSU academic integrity statement: *Academic Dishonesty:* Cases of academic dishonesty shall be processed in accordance with the Academic Integrity Policy as printed in the *Washington State University Student Handbook, Faculty Manual*, and as available from the Office of Student Affairs.

PLAGIARISM:

Plagiarism is defined by Webster's Dictionary as, "to steal and pass off the ideas or words of another as one's own." There are two general forms of plagiarism:

(a) Unintentional: the use of other writers' words, phrases, sentences, paragraphs as though they were your own *without understanding* the need to cite the original source. Unintentional plagiarism normally occurs when the individual does not understand the conventions of scientific writing and the need to cite sources of information.

(b) Intentional: the use of other writers' work and claiming it as your own. Intentional plagiarism includes *knowingly copying* or incorporating sections of books, articles, or other sources into your work without citation.

To avoid plagiarism, you must acknowledge the source of information. In scientific writing, this can be performed in the text of your work through the use of surnames of authors and the year of publication or by using numbers enclosed by parentheses which correspond to specific citations in the reference section. In addition to employing citations in the text, plagiarism can be avoided by applying special techniques when writing about information obtained from a source:

(a) Paraphrase: rewording information in which you accurately present the main ideas from the source but do so using your own organization, words, and sentence structures.

(b) Summary: a concise statement of the main idea from a section within a source.

(c) Direct quotation: use of quotes surrounding the passage written by another author.

In general, paraphrasing (a) and the use of summary statements (b) are very common techniques used in scientific writing. Use of quotations (c) in scientific writing is rare and should be avoided.

Plagiarism is dishonest and is **not** tolerated. If caught using all or portions of a current or former classmate's writing or other sources of information, a grade of "zero" will be given for the exercise. Additional penalties for plagiarism are possible as outlined in the *Washington State University Student Handbook*.

University of Idaho, Faculty Staff Handbook

ARTICLE II--ACADEMIC HONESTY. [section renumbered 8-07]

1. Cheating on classroom or outside assignments, examinations, or tests is a violation of this code.

2. Plagiarism, falsification of academic records, and the acquisition or use of test materials without faculty authorization are considered forms of academic dishonesty and, as such, are violations of this code.

3. Because academic honesty and integrity are core values at a university, the faculty finds that even one incident of academic dishonesty seriously and critically endangers the essential operation of the university and may merit expulsion. [rev. 7-98]

4. The operation of UI requires the accuracy and protection of its records and documents. To use, make, forge, print, reproduce, copy, alter, remove, or destroy any record, document, or identification used or maintained by UI violates this code when done with intent to defraud or misinform.

5. All data acquired through participation in UI research programs is the property of the university and must be provided to the principal investigator. In addition, collaboration with the University Research Office for the assignment of rights, title, and interest in patentable inventions resulting from the research is also required [see 5400 A through E].

6. Entrance without proper authority into any private office or space of a member of the faculty, staff, or student body is a violation of this code.

7. It is also a violation to hack or make unauthorized use of any computer or information system maintained by the university or a member of the faculty, staff, or student body. [rev. 7-05]

8. Instructors and students are responsible for maintaining academic standards and integrity in their classes. Consequences for academic dishonesty may be imposed by the course instructor. Such consequences may include but cannot exceed a grade of "F" in the course. The instructor should attempt to notify the student of the suspected academic dishonesty and give the student an opportunity to respond. The notice and the opportunity may be informal and need not be in writing. Penalties for any disciplinary infraction must be judicially imposed. [See 1640.02 C-5] [rev. 7-98]

9. Instructors may report incidents of academic dishonesty to the dean of students. Upon receiving such a report, the dean of students shall provide the student with written notice that a report has been made and an opportunity to meet with the dean to discuss the report. The dean of students shall maintain the report and any record of the meeting for a period of time deemed appropriate by the dean. The dean of students may file a complaint against the student after the meeting has taken place or the student has elected, either affirmatively or through inaction, not to meet with the dean. [add. 7-98]

Grading: Please note that final grades may be adjusted to class performance.

4 quizzes:	30%
Lab reports:	65%
Performance/Participation:	5%
Total:	100%

<u>Undergraduates (UI)</u>		<u>Undergraduates (WSU)</u>		<u>Graduate Students (UI and WSU)</u>	
>90	A	>92	A	>92	A
>80	B	90-92	A-	>82	B
>70	C	88-89.9	B+	>75	C
>60	D	82-87.9	B	<75	D
<60	F	80-81.9	B-		
		78-79.9	C+		
		72-77.9	C		
		70-71.9	C-		
		60-69.9	D		
		<60	F		

*****PLEASE NOTE THAT THE SYLLABUS IS SUBJECT TO CHANGE INCLUDING THE DATES OF QUIZZES*****

HONOR STATEMENT

The following honor statement was taken from the website (<http://www.uihome.uidaho.edu/default.aspx?pid=56184>) of Dean of Students. Please include it on the cover of **ALL** assignments before you submit it for evaluation.

“I attest that the work that I have submitted is my own. I have not cheated, plagiarized or received unauthorized assistance in order to complete this work. I understand that the University of Idaho faculty may assign an academic penalty for instances of academic dishonesty by for this work or the value of the entire course. The University of Idaho (or Washington State University) can also seek additional disciplinary action through the University Judicial System that may result in sanctions from warning through expulsion.”

Name _____

Date _____