FOOD MICROBIOLOGY LABORATORY FALL 2006

FST 417 (UI)
MMBB 417 (UI)
FSHN 417 (WSU)
MBIOS 445 (WSU)

Day and Time: Tuesday and Thursday
2:30-5:20 PM

Location: Life Science South 170

Credits: 2

Instructors:

Dr. Gülhan Ünlü
Agricultural Biotechnology 205
885-7771
gulhan@uidaho.edu

Kristin Pecka
Agricultural Biotechnology 216
885-6456
peck6337@uidaho.edu

Connie Carson
cars2049@uidaho.edu

G. Ünlü's Office Hours: By appointment
Set up appointments via email
Agricultural Biotechnology 205

K. Pecka's Office Hours: By appointment
Set up appointments via email

Student Coordinator (FST):

Matt Agle
885-7084
agle@uidaho.edu

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 industry or in 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:

Period	Day	Date	Topic
1	T	8/22	Introduction Safety in the food microbiology laboratory ***No lab report due***
2	R	8/24	Basic activities in the food microbiology laboratory (Preparing dilution blanks and media) ***Combined (8/24, 8/29, 8/31) lab report due on 9/7***
3	T	8/29	Basic activities in the food microbiology laboratory (Bacterial transfers, isolating single colonies, preparing slides, simple stain, gram stain) ***Combined lab report due on 9/7***
4	R	8/31	Basic activities in the food microbiology laboratory (enumeration of food-borne microorganisms) ***Lab report due on 9/12***
5	T	9/5	Water microbiology/Comparison of enumeration methods for coliform and *Escherichia coli* ***Lab report due on 9/14***
6	R	9/7	**QUIZ 1** Sanitation microbiology ***Lab report due on 9/21***
7	T	9/12	Rapid identification ***Lab report due on 9/21***
8	R	9/14	Effect of pH and water activity on microbial growth ***Lab report due on 9/26***
9	T	9/19	Microbiology of fresh fruits and vegetables ***Lab report due on 10/10***
10	R	9/21	Microbiology of sugar products and canned foods ***Lab report due on 10/5*** Microbiology of canned foods ***Lab report due on 10/5***
11	T	9/26	Dairy Fermentations ***Lab report due on 10/10***
12	R	9/28	Dairy Fermentations ***Lab report due on 10/10***
13	T	10/3	*Bacillus cereus* ***Lab report due 10/24*** *Clostridium perfringens* ***Lab report due on 10/24***

14	R	10/5	**QUIZ 2** *Bacillus cereus* ***Lab report due 10/24*** *Clostridium perfringens* ***Lab report due on 10/24***
15	T	10/10	*Bacillus cereus* ***Lab report due on 10/24*** *Clostridium perfringens* ***Lab report due on 10/24***
16	R	10/12	*Bacillus cereus* ***Lab report due 10/24*** *Clostridium perfringens* ***Lab report due on 10/24***
17	T	10/17	*Staphylococcus aureus* ***Lab report due on 11/2*** *Listeria monocytogenes* ***Lab report due on 11/14***
18	R	10/19	*Staphylococcus aureus* ***Lab report due on 11/2*** *Listeria monocytogenes* ***Lab report due on 11/14***
19	T	10/24	*Staphylococcus aureus* ***Lab report due on 11/2*** *Listeria monocytogenes* ***Lab report due on 11/14***
20	R	10/26	*Staphylococcus aureus* ***Lab report due on 11/2*** *Listeria monocytogenes* ***Lab report due on 11/14***
21	T	10/31	*Listeria monocytogenes* ***Lab report due on 11/14*** *Campylobacter* ***Lab report due on 11/30***
22	R	11/2	**QUIZ 3** *Listeria monocytogenes* ***Lab report due on 11/14*** *Campylobacter* ***Lab report due on 11/30***

23	T	11/7	*Campylobacter* ***Lab report due on 11/30*** *Salmonella* ***Lab report due on 11/28***
24	R	11/9	*Campylobacter* ***Lab report due on 11/30*** *Salmonella* ***Lab report due on 11/28***
25	T	11/14	*Campylobacter* ***Lab report due on 11/30*** *Salmonella* ***Lab report due on 11/28***
26	R	11/16	*Campylobacter* ***Lab report due on 11/30***
27	T	11/21	**FALL RECESS (NOV 20-24, 2006)**
28	R	11/23	**FALL RECESS (NOV 20-24, 2006)**
29	T	11/28	*E. coli* ***Lab report due 12/7***
30	R	11/30	**QUIZ 4** *E. coli* ***Lab report due 12/7***

Final exam: None

Attendance: Attend every laboratory practice. 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: The labs, selected former quizzes, announcements, etc. will be available at http://courses.ag.uidaho.edu/fst/fstmmbb417. The website will be updated during the first week of class. You will be responsible for printing out your own set of labs and all relevant material. Hard copies of any additional material (that is not available online) will be provided. You will need to take some additional notes during laboratory practices.

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).

Cheating - acquisition of answers to quiz questions in a dishonest fashion- will result in a score of zero for that test or final exam. A zero on any quiz can result in an F as a final grade in the course. All parties involved in cheating will be penalized. Refer to the Student Code of Conduct of the Faculty Staff Handbook at the UI or its counterpart at WSU.

Reasonable accommodations for quizzes are available for students who have documented a disability. Notification of any accommodations needed is necessary during the first week of class. All accommodations must be approved through the UI Disability Resource Center (DRC) or its counterpart at WSU.

Lab reports: There will be several laboratory reports. Each report will be worth 100 points. Reports must be word-processed. Reports are 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 Kristin and Connie 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 at http://journal.asm.org/. 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, Kristin, and Connie some breaks. However, questions from **all labs** will appear in quizzes.

Academic Dishonesty: Plagiarism – the use of another student's writing as your own and/or the use of writing from published sources without citation – can result in a zero for the lab report. A zero any quiz can result in an F as a final grade on course. All parties involved in the act of plagiarism will be penalized. Plagiarism also includes coping or paraphrasing another person's writing with slight changes of wording. Refer to the Student Code of Conduct of the Faculty Staff Handbook at the UI or its counterpart at WSU.

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

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

Undergraduates (UI)	
>90	A
>80	B
>70	C
>60	D
<60	F

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

Graduate Students (UI and WSU)	
>92	A
>82	B
>75	C
<75	D

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