

FOS4222L FOOD MICROBIOLOGY SYLLABUS LABORATORY

Spring 2021

SCHEDULE AND CLASS LOCATIONS

MW: 1:00-2:30 pm, FSHN 344&310 (Sections 3738, 3739, & 2191)

MW: 3:00-4:30 pm, FSHN 344&310 (Sections 3740, 3741, & 2192)

INSTRUCTOR

Dr. Naim Montazeri

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Office Hours: Tuesday/Thursday 10:00 am-12:00 pm (by appointment only)

TEACHING ASSISTANTS

Siman Liu (Ph.D. student): liu.siman@ufl.edu

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COURSE DESCRIPTION

This course equips students with practical skills in food microbiology. A wide range of methods in isolating, characterizing, and enumerating microorganisms will be applied to food and environmental matrices. This is a stand-alone course and is offered along with Food Microbiology (FOS4222) and in conjunction with Principles in Food Microbiology (FOS5225C).

COURSE OBJECTIVES

1. Name and recognize the most common microorganisms found in specific food products
2. Recognize specific types of microbial spoilage
3. Analyze different foods for presence of hazardous microorganisms using selective media
4. Recognize the major types of pathogenic microorganisms
5. Describe the consequences of food mishandling on spoilage and safety
6. Identify desirable microorganisms and their effects in preservation and fermentation

FORMAT

Prior to the lab

1. Review the assigned experiment
2. Complete the on-line quiz (closed book)

During the lab

- Follow the safety guideline regarding COVID-19 (see the syllabus)
- There will be two rooms each with capacity to fit 6 students. Please do not rotate.

- You may be assigned to other student(s) as a group. Due to the CODIV-19 guidelines, you will not be working together in the lab, but you will be responsible for conducting a portion of the experiments and sharing the data. It is important that the work is divided equally among all members of the team. You will be submitting your lab report as a group.
- Leave all extra books and bags in the space provided in the back of the lab.
- Sanitize work area before and after you complete your work with a fresh 10% bleach solution or 70% ethanol.
- Do the work in an organized and careful manner. Record all data, calculations, and other relevant information in your notebook.
- Due to the nature of the lab, it is mandatory that students wear a lab coat at all times, as well as safety glasses and mask when working with liquid material that could be aerosolized.
- You are working with living organisms.
- Some lab exercises will require you to come in outside of the normal laboratory class hours to complete subsequent steps of an experiment and/or record results.
- In case of any incident or injury, immediately report it the teaching assistant and the instructor.

COURSE ANNOUNCEMENTS

All the course materials will be posted on Canvas prior to the class. All announcements will be made through Canvas (make sure to turn on the notifications in Canvas, available under your profile). It is the student's responsibility to check the announcement. Students can reach out to the instructor and TAs via email or through Canvas Inbox.

COURSE EVALUATIONS

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

TESTS AND GRADING

Final grade for FOS5225C is based on combined grades from the FOS 4222 lecture (70%) and FOS 4222L lab (30%). You cannot drop a test.

Quizzes: Pre-lab quizzes are closed book and must be completed before each lab. They will consist of 4 or 5 short answer questions.

	Lab Quizzes	Lab Midterm	Lab Final	Lab report	Presentation
FOS 4222L	10%	25%	25%	20%	20% (oral)
FOS 5225C	10%	25%	25%	20%	10% (oral) + 10% (written)

Grading Scale: **A** (94 to 100), **A-** (90 to <94), **B+** (87 to <90), **B** (84 to <87), **B-** (80 to <84), **C+** (77 to <80), **C** (74 to <77), **C-** (70 to <74), **D+** (67 to <70), **D** (64 to <67), **D-** (61 to <64), **E** (0 to <61)

There will be no curving or readjustment based on class performance.

PRESENTATIONS

FOS4222L: Undergrad oral presentations will be delivered for 10-15 min as a group using power point slide show (an example will be provided). Topics need to be approved by instructor. The purpose of this exercise is to pick an interesting, controversial issue related to Food Microbiology and RESEARCH the pros and cons related to that issue. You will be graded based on the following criteria:

- Selection of topic (10 pts): Is the topic sufficiently interesting, controversial, and relevant to Food Microbiology?
- Quality of supporting data (20 pts): Do your reference citations provide sufficient data to describe the topic? Please cite at least 3 references from recent peer-reviewed journals.
- Overall presentation and graphics (40 pts): Your presentation should include 3 sections: 1) Introduction, 2) supporting data, and 3) discussion and conclusion. Is your presentation visually attractive and “eye-catching”?
- Validity of conclusions (20 pts): Did you critically evaluate supporting data?
- Peer review: participants within groups will grade each other

FOS5225C. Grad students will deliver an oral presentation and a written report for a more in-depth overview of their presentation topic. The written report should be about 5 pages (excluding references) with 11 pt Arial font, single-spaced, and include min of 10 references (a template will be provided).

E-LABORATORY REPORTS

Laboratory data are the backbone of science, and your records should be accurate and precise. Your notes help you to comprehend what, why and how you did something. Data should be recorded in such a way that you (or anyone else) would be able to repeat the experiment from the description in your notebook. You are required to record your data in standard, bound notebook, but your submission will be through Canvas as a completed lab report of the assignment. Even though you will be working in groups, each person is expected to keep their own notebook. E-lab reports will be due within one week of the assignment. If reports are not appropriate, they will be returned, and you will have an additional week to complete. You will include the following for **every** lab exercise (Word template will be provided):

- **Purpose: Briefly describe the purpose of each lab.** Give a brief overview of the background material and concepts for the lab(s). Include the relevance of the concepts to food safety and the food industry. Briefly describe the purpose of the experiment(s) (i.e. the objectives that were to be accomplished).
- **Methods (brief): Briefly describe your method.** If any deviation from the protocol was performed, describe the changes to the protocol in detail. (Example: We serially diluted a bacterial broth cultures in PBS as described in the lab manual on page X. Then 100 ul was spread plated from the -4, -5 and -6 dilutions onto three selective media: EMB, XLT4 and TCBS.)
- **Results:** Your submission to canvas will be a report on the raw data. Use tables, graphs, diagrams or pictures of the data collected during the experiment. Tables and figures should be labeled as you would see in a journal presentation. Also include a narrative of your description of data that is contained in these figures and tables. If any calculations were made, you must show sample calculations in this section. Also include any observations that were made during the experiment but are not represented in a figure or table. This section is simply for presentation of the data.
- **Discussion:** Explain your results and discuss your interpretation of results. In this section discuss your results and draw conclusion based on your data. This is your opportunity to show

you understand the concepts involved in doing the experiment.

It is important that you interpret and explain your results, especially any deviations from what you expected. There is no need to discuss all the plausible reasons for error. If you believe an error was committed, explain the reason and what might have occurred.

- **Literature Cited:** In your lab reports, you are encouraged to find references to support your conclusions. References will be required for some lab write ups. These online references should be from journal of from credible websites, such as the FDA, CDC, or USDA. We encourage you to use **EndNote Basic/Online** (free online platform, available through <https://endnote.com/product-details/basic/>) for reference management. Tutorials: can be found here:
 - https://clarivate.libguides.com/endnote_training/endnote_online
 - <http://guides.uflib.ufl.edu/c.php?g=147493&p=966730>

The proposed format for the reference section is that of the ASM. Examples of this format are as follows:

Porto-Fett, A.C. S., J.E. Call, and J.B. Luchansky. 2008. Validation of a commercial process for inactivation of *Escherichia coli* O157:H7, *Salmonella Typhimurium*, and *Listeria monocytogenes* on the surface of whole muscle beef jerky. *J. Food Prot.* 71:918-926.

COVID-RELATED PRACTICES

- In-person attendance requires COVID "clearance" status. Any violation will result in dismissal from the class and report to the Dean.
- No student will be allowed in the classroom unless they are signed up for the in-person section and have been cleared for attendance.

In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.
- This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
- Follow your instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.
- If you are experiencing COVID-19 symptoms (guidance from the CDC on symptoms of coronavirus.), please use the UF Health screening system and follow the instructions on whether you are able to attend class. Find more information in the UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms..
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. Find more information in the university attendance policies.

Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to

consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who unmute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

MINIMUM TECHNICAL SKILLS/REQUIREMENTS

To complete your tasks in this course, you will need a basic understanding of how to operate a computer, how to use Zoom, how to use iClicker, and how to use word processing software.

The University of Florida expects students entering an online program to acquire computer hardware and software appropriate to his or her degree program. Most computers are capable of meeting the following general requirements. A student's computer configuration should include:

- Webcam; Microphone; Speakers or headphones; Broadband connection to the Internet and related equipment (Cable/DSL modem)
- Your instructor might request that you obtain the [iClicker Cloud](#) (free for students) to respond to polls and in-class quizzes
- Microsoft Office Suite installed (provided by the university)

Individual colleges may have additional requirements or recommendations, which students should review prior to the start of their program.

HONORLOCK

Honorlock is an online proctoring service that allows students to take exams on-demand 24/7. There are no scheduling requirements or fees. You will need a laptop or desktop computer with a webcam, a microphone, and a photo ID. The webcam and microphone can be either integrated or external USB devices. Honorlock requires that you use the [Google Chrome](#) browser; furthermore, the Honorlock extension must be added to Chrome. For further information, FAQs, and technical support, please visit [Honorlock](#).

ZOOM

Zoom is an easy-to-use video conferencing service available to all UF students, faculty, and staff that allows for meetings of up to 100 participants. You can find resources and help using Zoom at <https://ufl.zoom.us/>.

COURSE POLICIES

- Attendance is required. Please refrain from checking or sending e-mails, texts, etc during class or lab sessions. Students are expected to participate in class discussions. Makeup exams will only be given with the permission of the instructor if adequate notice and documentation (such as doctor's note) is provided in advance. A 10% pt penalty per day will be assigned for late assignments or reports turned in within two days after the due date. No submission will be accepted after two days past the due date.

- Requirements for make-up exams, assignments, and other work in this course are consistent with university policies that can be found at catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/
- As a portion of class materials will be delivered online, you are responsible for observing all posted due dates, and are encouraged to be self-directed and take responsibility for your learning.
- Be on time. If you join the class session remotely, try and join the session at least 5 minutes before the class starts. Before your very first class session, try joining about 10-15 minutes to make sure that everything works.

UF POLICIES

University Policy on Accommodating Students with Disabilities:

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://disability.ufl.edu/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter that must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

University Policy on Academic Conduct:

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Netiquette and Communication Courtesy:

All members of the class are expected to follow rules of common courtesy during, before, and after class, in all email messages, threaded discussions, and chats.

GETTING HELP

Technical Difficulties:

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- <http://helpdesk.ufl.edu>
- (352) 392-HELP (4357)
- Walk-in: HUB 132

Any requests for make-ups due to technical issues should be accompanied by the ticket number received from the Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You should e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/
- Counseling Services, Groups and Workshops, Outreach and Consultation, Self-Help Library, Wellness Coaching
- U Matter We Care, www.umatter.ufl.edu/
- Career Resource Center, First Floor JWRU, 352-392-1601, www.crc.ufl.edu/
- Complaints: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf
- Online Course: <http://www.distance.ufl.edu/student-complaint-process>
- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources. cms.uflib.ufl.edu/ask
- Teaching Center: 352-392-2010 General study skills and tutoring: teachingcenter.ufl.edu/
- Writing Studio: 352-846-1138. Help brainstorming, formatting, and writing papers: writing.ufl.edu/writing-studio/

**FOS4222L FOOD MICROBIOLOGY (LAB)
SCHEDULE
SPRING SEMESTER, 2021**

Date	Lab Assignment	Assignments
Jan 11	No lab	
Jan 13	No lab	
Jan 18	Martin Luther King Jr. Day (UF Closed)	
Jan 20	Introduction (online)	Online lab safety training/Quiz
Jan 25	1) Media preparation	Lab 1-2 quiz
Jan 27	2) Handling bacterial cultures	
Feb 01	3) Plate count - 1	Lab 3 quiz/Lab 1-2 reports due
Feb 03	3) Plate count - 2	
Feb 08	4) MPN - 1	Lab quiz/Lab 3 report due
Feb 10	4) MPN - 2	
Feb 15	5) Antimicrobial - 1	Lab quiz/Lab 4 report due
Feb 17	5) Antimicrobial - 2	
Feb 22	6) Fermentation - 1	Lab quiz/Lab 5 report due
Feb 24	6) Fermentation - 2	
Mar 01	Overview of students' presentation (online)	
Mar 03	Lab Mid-term Exam Review	
Mar 08	Lab Mid-term Exam	
Mar 10	6) Fermentation - 3	
Mar 15	7) <i>Salmonella</i> enterica - 1	Lab quiz/Lab 6 report due
Mar 17	7) <i>Salmonella</i> enterica - 2	
Mar 22	8) <i>Vibrio</i> spp. - 1	Lab quiz/Lab 7 report due
Mar 24	8) <i>Vibrio</i> spp. - 1	
Mar 29	9) Rapid methods - 1	Lab quiz/Lab 8 report due
Mar 31	9) Rapid methods - 2	
Apr 05	10) PCR - 1	Lab quiz/Lab 9 report due
Apr 07	10) PCR - 2	
Apr 12	11) Bacteriophage plaque assay - 1	Lab quiz/Lab 10 report due
Apr 14	11) Bacteriophage plaque assay - 2	
Apr 19	Undergrad students' presentation - 1	Lab 11 report due
Apr 21	Undergrad students' presentation - 2	
Apr 26	Grad students' presentation	
Apr 28	Lab final review	
Apr 05	Lab final	