Last update: Jan 10, 2025

FOS4222
FOOD MICROBIOLOGY SYLLABUS
LECTURE
SPRING 2025

SCHEDULE AND CLASS LOCATION

When: MWF, 5th Period 11:45 am-12:35 pm
Where: FAB 0103 (map: https://go.ufl.edu/vb4prc0)

INSTRUCTOR

Dr. Naim Montazeri
Room 341A, FSHN Bldg, 572 Newell Dr.
Phone: (352) 294-3756
Email: nmontazeri@ufl.edu
Website: https://fshn.ifas.ufl.edu/about/faculty-bio-pages/montazeri/
Office Hours: **Tuesdays 10-11 am**. Please reach out to make an appointment in advance, as my availability may vary.

TEACHING ASSISTANTS

Samantha Dicker (MSc student): Email: sdicker@ufl.edu
Office hours by appointment only. Feel free to reach out.

COURSE DESCRIPTION

This course covers basic and applied aspects of food microbiology with a particular focus on microbial pathogens transmitted to humans through food and water; persistence in the environment and through the food supply chain; mitigation strategies; preservation and control strategies; fermentation; spoilage; pathogenesis; microbial detection; and risk-assessment.

COURSE OBJECTIVES

1. Demonstrate microbial growth and survival in water and food under various environmental conditions.
2. Delineate the basis for food preservation and fermentation techniques.
3. Differentiate the pathogenesis of various foodborne and waterborne pathogens.
4. Critically elucidate methods for detection, enumeration, and control of pathogens.
5. Discuss the basic tenets behind risk assessment and policies applicable to food safety.

COURSE PREREQUISITES

MCB2000, MCB3023, or permission of instructor.

RELEVANT COURSES

- FOS6226C Advanced Food Microbiology
- FOS4223/6224 Food and Environmental Virology

- FOS6936 Food Safety Systems
- ANS6637 Quantitative Microbial Risk Assessment of Pathogens in Food Systems
- MCB5505 Virology

TEXTBOOK (RECOMMENDED)

Adams, Martin R. Moss, Maurice O. McClure, Peter J. (2016). *Food Microbiology (4th Edition).* Royal Society of Chemistry. https://app.knovel.com/hotlink/toc/id:kpFME00042/food-microbiology-4th/food-microbiology-4th. Full text is freely available to the UF students through Knovel.com (use your UF email address to sign up).

COURSE ANNOUNCEMENTS

Course materials and announcements will be on Canvas. Check regularly and enable notifications (click here for a step-by-step guide). Contact instructors and TAs via Canvas for prompt responses.

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

There will be three exams (not cumulative). The guest lectures are included in the exams. Basic calculators may be allowed on exams (no smart electronic device).

FOS4222 Final grade (see below) You cannot drop a test. See below regarding makeup exams.

Activity	Grade percentage
Exams 1-2	35%
Exam 3	35%
Assignment	20%
In-class activities	10%

**Do not include pop quizzes.*

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.

PUBLIC HEALTH PROTECTIONS

- Do not come to the class if you have a contagious illness or flu-related symptoms. In case of an illness, a doctor's note is to be provided if missing a class activity.

MINIMUM TECHNICAL SKILLS/REQUIREMENTS

To complete your tasks in this course, you will need a basic understanding of how to operate a computer, and how to use basic 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) for office hours.
- 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.

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 a doctor's note) are provided in advance (at least 12 hours prior to the exam). 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/
- Assignments must be submitted through Canvas as a text entry or Word/PDF file (no email submissions will be accepted)
- *Late assignment/report submittal*: 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.
- 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.
- Our class sessions may be audio/visually recorded for educational purposes. **As in all courses, unauthorized sharing of class materials is prohibited.**
- Be on time.

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 (https://policy.ufl.edu/regulation/4-040/) specifies a number of behaviors that are in violation of this code and the possible sanctions.

Among the changes are inclusion of language on the use of generative **Artificial Intelligence and other related tools**. 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.

TECHNICAL 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

Whole Gator is an important app to all sorts of campus sources. It is also accessible under the Campus Resources Tab in Canvas. https://studentlife.ufl.edu/wholegator/.

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 Connections Center,* https://career.ufl.edu

- Complaints: https://hr.ufl.edu/manager-resources/employee-relations/
- Library Support**:** cms.uflib.ufl.edu/ask
- Teaching Center: teachingcenter.ufl.edu/
- Writing Studio: writing.ufl.edu/writing-studio/

FOS4222
FOOD MICROBIOLOGY (LECTURE)
SPRING 2025
(SUBJECT TO CHANGE)

Session	Date	Lecture Topics	Guest Lecturer	Activity
Module 1: Introduction, Microbial Growth, and Enumeration Techniques				
1	Jan 13	Introduction		
2	Jan 15	Microbial growth kinetics		
3	Jan 17	Culture-based bacterial enumeration – Part 1		
-	Jan 20	***Martin Luther King Jr. Day - No Class***		
4	Jan 22	Culture-based bacterial enumeration – Part 2		
Module 2: Food Spoilage				
5	Jan 24	Introduction to food spoilage		
6	Jan 27	Spoilage of muscle foods		
7	Jan 29	Spoilage of fruits and vegetables		
Module 3: Food Preservation				
8	Jan 31	Spoilage in dairy		
9	Feb 03	*Special topic/case study*		In-class activity
Module 4: Exam 1				
10	Feb 05	Review for Exam 1		
11	Feb 07	**Exam 1**		
Module 5: Food Preservation				
12	Feb 10	Chemical and biological preservation		
13	Feb 12	Physical preservation		
Module 6: Food Fermentation				
14	Feb 14	Yeasts and fermentation		
15	Feb 17	Lactic acid bacteria		
16	Feb 19	Microbiology of fermented beverages		
Module 7: Gram-Positives Spore Formers				
17	Feb 21	Bacterial pathogenesis		
18	Feb 24	*Bacillus* spp.		
19	Feb 26	*Clostridium* spp.		
20	Feb 28	*Listeria monocytogenes*		
21	Mar 03	*Staphylococcus aureus*		

Module 8: Gram-Negatives, Part 1				
22	Mar 05	*Escherichia* and *Shigella* spp.		
23	Mar 07	*Vibrio* spp.		
24	Mar 10	Machine learning and AI in Food Micro	Dr. Boce Zhang	In-class activity
Module 9: Review and Exam 2				
25	Mar 12	Review for Exam 2		
26	Mar 14	**Exam 2**		
-		***Spring break - No Class (Mar 15-22)***		
Module 10: Gram-Negatives, Part 2				
27	Mar 24	*Cronobacter*		
28	Mar 26	*Campylobacter*		
29	Mar 28	*Salmonella*		
Module 11: Foodborne viruses				
30	Mar 31	Principles of virology		
31	Apr 02	Enteric viruses		
32	Apr 04	Bacteriophages		Assignment due
Module 12: Sampling and Microbial Detection				
33	Apr 07	Food and environmental sampling		
34	Apr 09	Microbial isolation and concentration		
35	Apr 11	Molecular detection methods		
Module 13: Predictive Microbiology and QMRA				
36	Apr 14	Predictive Microbiology		
37	Apr 16	Quantitative Microbial Risk Assessment (QMRA)		
38	Apr 18	*Special topic/case study*		In-class activity
Module 14: Exam 3				
39	Apr 21	Review for Exam 3		
40	Apr 29	**Exam 3 (3-4:30 pm)**		