FOS4222
FOOD MICROBIOLOGY SYLLABUS
LECTURE

Spring 2023

SCHEDULE AND CLASS LOCATION

When: MWF, 5th Period 11:45 am-12:35 pm
Where: FAB 0103 (click here for the map 📍)

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: Fridays 1-3 pm (**by appointment only**)

TEACHING ASSISTANTS

TBD
Office Hours: by appointment only

COURSE DESCRIPTION

This course covers basic and applied aspects of food microbiology with 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 (REQUIRED)

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

All the course materials will be posted on Canvas prior to the class. All announcements will be made through Canvas. It is the student's responsibility to check the announcement. **Make sure to turn on the notifications for this course** (click here for a step-by-step guide). Students can reach out to the instructor and TAs through Canvas Inbox (preferred) or email.

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 four mid-term and one final exams. The guest lectures are included in the exams. Basic calculators are 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
Assignments	20%
Quizzes*	20%
Mid-terms	30%
Final Exam	30%

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.

COVID-RELATED PRACTICES

- 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 to be provided if missing a class activity.

- Please maintain physical distancing (6 feet between individuals) or at least maintain appropriate spacing between students, wherever possible.
- Sanitizing supplies may be available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.

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 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) for office hours.
- Your instructor might request that you obtain the iClicker Cloud (free for students) to respond to polls and in-class quizzes. This will be communicated in advance.
- 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 doctor's note) is 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/
- *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 (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/

FOS4222
FOOD MICROBIOLOGY (LECTURE)
SPRING 2023
(SUBJECT TO CHANGE)

Session	Date	LECTURE TOPICS	Guest lecturer	Activity
Module 1: Intro, Growth, and Enumeration Techniques				
1	Jan 9	Introduction		
2	Jan 11	Microbial growth kinetics		
3	Jan 13	Culture-based bacterial enumeration		
	Jan 16	*Martin Luther King Jr. Day - No Class*		
Module 2: Food Spoilage				
4	Jan 18	Food spoilage - introduction		
5	Jan 20	Spoilage of muscle foods	Dr. Farzad	
6	Jan 23	Spoilage of milk		Take home quiz 1
7	Jan 25	Spoilage of fruits and vegetables		
Module 3: Food Preservation				
8	Jan 27	Physical preservation		
9	Jan 30	Chemical and biological preservation		
Module 4: Review and Exam 1				
10	Feb 1	Review for Exam 1		
11	Feb 3	**Exam 1**		
Module 5: Food Fermentation				
12	Feb 6	Yeasts and fermentation		
13	Feb 8	Lactic acid bacteria		
14	Feb 10	Microbiology of beer and wine		
Module 6: Gram-Positives Spore Formers				
15	Feb 13	Bacterial pathogenesis		
16	Feb 15	Sporulation		
17	Feb 17	*Bacillus* spp.		Take home quiz 2
18	Feb 20	*Clostridium* spp.		
Module 7: Review and Exam 2				
19	Feb 22	Review for Exam 2		
20	Feb 24	**Exam 2**		
Module 8: Gram-Positives Non-spore Formers				
21	Feb 27	*Listeria monocytogenes*		
22	Mar 1	*Staphylococcus aureus*		
Module 9: Gram-Negatives, Part 1				
23	Mar 3	*Escherichia* and *Shigella* spp.		
24	Mar 6	*Vibrio* spp.		
25	Mar 8	*Campylobacter* spp.		
Module 10: Gram-Negatives, Part 2				
26	Mar 10	Cronobacter and Yersinia		Take home quiz 3

		Spring break - no class (Mar 11-18)		
27	Mar 20	*Salmonella enterica*		
Module 11: Review and Exam 3				
28	Mar 22	Review for Exam 3		
29	Mar 24	**Exam 3**		
Module 12: Viruses and Prions				
30	Mar 27	Virology - principles		
31	Mar 29	Enteric viruses		
32	Mar 31	Bacteriophages		
Module 13: Microbial Isolation and Detection				
33	Apr 3	Microbial isolation and concentration		
34	Apr 5	Rapid detection methods		
35	Apr 7	Molecular typing		Assignment due
36	Apr 10	Food safety systems and utilization of microbial Indicators		
Module 14: Review and Exam 4				
37	Apr 12	Review for Exam 4		
38	Apr 14	**Exam 4**		
Module 15: Microbial Risk Analysis				
39	Apr 17	Food safety risk analysis	TBD	
40	Apr 19	Quantitative Microbial Risk Assessment (QMRA)	Dr. Havelaar	
41	Apr 21	Real-world implications of food safety regulations	Dr. Schneider	
42	Apr 24	Case studies		
Module 16: Reviews and Final Exam				
43	Apr 26	Review for Final Exam		
44	May 03	**Final exam** (selected modules) (7:30-9:30 am)		