

**FOS4222
FOOD MICROBIOLOGY SYLLABUS
LECTURE**

Spring 2022

SCHEDULE AND CLASS LOCATION

When: MWF, 5th Period 11:45 am-12:35 pm
Where: CSE E121 (click [here](#) for more info)

INSTRUCTOR

Dr. Naim Montazeri

Room 341A, FSHN Bldg, 572 Newell Dr.

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Website: <https://fshn.ifas.ufl.edu/about/faculty-bio-pages/montazeri/>

Office Hours (via Zoom): Friday 1-3 pm (by appointment only)

TEACHING ASSISTANT

TBD

Office Hours: TBD (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 is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the link they receive from GatorEvals (<https://ufl.bluera.com/ufl/>, also accessible here through Canvas course menu --> GatorEvals). Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

TESTS AND GRADING

Exams: There will be four mid-term exams and one final. The guest lectures are included in the exams.

Quizzes: Quizzes will be used to gauge progress throughout the semester and will be graded. In-class pop quizzes will have bonus points toward your next exam.

FOS4222 Final grade (see below) You cannot drop a test.

Activity	Grade percentage
Assignments	20%
Quizzes*	10%
Mid-term 1 and 2	20%
Mid-term 3 and 4	30%
Final Exam	20%

*Does 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

- PLEASE DO NOT COME TO THE CLASS IF FEELING UNWELL OR SICK.
- Face masking is strongly recommended for the safety of class attendees.
- 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.
- 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.

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/

Last update: Jan 3, 2022

- 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 2022
(SUBJECT TO CHANGE)

Session	Date	LECTURE TOPICS	Guest lecturer	Activity
<i>Module 1: Intro, Growth, and Enumeration Techniques</i>				
1	Jan 5	Introduction		
2	Jan 7	Microbial growth kinetics		
3	Jan 10	Culture-based bacterial enumeration		
<i>Module 2: Food Spoilage</i>				
4	Jan 12	Food spoilage - introduction		Quiz 1
5	Jan 14	Spoilage in muscle foods	Dr. Farzad	
6	Jan 17	Spoilage in milk		
7	Jan 19	Spoilage in fruits and vegetables		
<i>Module 3: Review and Exam 1</i>				
8	Jan 21	Review for Exam 1		
9	Jan 24	Exam 1		
<i>Module 4: Food Preservation</i>				
10	Jan 26	Physical preservation		
11	Jan 28	Chemical and biological preservation		
<i>Module 5: Food Fermentation</i>				
12	Jan 31	Yeasts and fermentation		Quiz 2
13	Feb 2	Lactic acid bacteria		
14	Feb 4	Microbiology of beer and wine		
<i>Module 6: Review and Exam 2</i>				
15	Feb 7	Review for Exam 2		
16	Feb 9	Exam 2		
<i>Module 7: Gram-Positives Spore Formers</i>				
17	Feb 11	Bacterial pathogenesis		
18	Feb 14	Sporulation		Assignment 1 due
19	Feb 16	<i>Bacillus</i> spp.		
20	Feb 18	<i>Clostridium</i> spp.		
<i>Module 8: Gram-Positives Non-spore Formers</i>				
21	Feb 21	<i>Listeria monocytogenes</i>		Quiz 3
22	Feb 23	<i>Staphylococcus aureus</i>		
<i>Module 9: Gram-Negatives, Part 1</i>				
23	Feb 25	<i>Escherichia</i> and <i>Shigella</i> spp.		
24	Feb 28	<i>Vibrio</i> spp.		
<i>Module 10: Review and Exam 3</i>				
25	Mar 02	Review for Exam 3		
26	Mar 04	Exam 3		
<i>Module 11: Gram-Negatives, Part 2</i>				

27	Mar 07	<i>Campylobacter</i> spp.		
28	Mar 09	<i>Cronobacter</i> and <i>Yersinia</i>		
29	Mar 11	<i>Salmonella enterica</i>		Quiz 4
<i>Module 12: Viruses and Prions</i>				
30	Mar 14	Virology - principles		
31	Mar 16	Enteric viruses		Assignment 2 due
32	Mar 18	Bacteriophages		
33	Mar 21	Prions		Quiz 5
<i>Module 13: Review and Exam 4</i>				
34	Mar 23	Review for Exam 4		
35	Mar 25	Exam 4		
<i>Module 14: Microbial Isolation and Detection</i>				
36	Mar 28	Microbial isolation and concentration		
37	Mar 30	Rapid detection methods		
38	Apr 01	Molecular typing		
<i>Module 15: Critical Issues in Food Safety Systems</i>				
39	Apr 04	Food safety systems and utilization of microbial indicators		
40	Apr 06	Personnel hygiene for food handlers		Quiz 6
41	Apr 08	Antibiotic resistance in the food chain		
42	Apr 11	Food safety risk analysis	Dr. Danyluk	
43	Apr 13	New regulations, new microbiology	Dr. Schneider	
44	Apr 15	COVID-19 and food systems		
<i>Module 16: Reviews and Final Exam</i>				
45	Apr 18	Review for Final Exam		
46	Apr 20	Q&A - optional (viz Zoom)		
47	Apr 28	Final exam modules 14 and 15 (10am-12pm)		