

## **COURSE INFORMATION:**

Food Biology Fundamental  
16:400:514  
3 credits

## **CONTACT INFORMATION:**

Instructor(s): Karl Matthews (course coordinator), Mike Chikindas, Loredana Quadro, Diana Roopchand, Beverly Tepper,  
Office Location: 107 FSNSW  
Office Hours: By appointment  
Phone: 848-932-5430  
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## **COURSE MATERIALS:**

Reading assignments, PPT, government websites. Information provided as required.

## **COURSE DESCRIPTION:**

An intensive overview of principles and practices involved in biological aspects of food quality, safety, preservation, deterioration and nutrition. In depth consideration of food's biological attributes including post-harvest changes, safety, and nutrition through the integration of chemical, biochemical, physical, nutritional, biological, and microbiological sciences with food science.

This course will:

- a.) Introduce active learning activities and decrease the reliance on lectures as the primary medium of information transfer.
- b.) Provide students with multiple mechanisms for demonstrating their competence in food biology
- c.) Provide an opportunity for writing, revising, and evaluating technical material.

## **LEARNING OBJECTIVES:**

- Students will obtain foundational factual knowledge in food microbiology, nutrition, biotechnology and post-harvest physiology from reading, lectures, and in-class and at home exercises.
- Through the use of simulations, case studies, group discussions and exams, students will begin to integrate facts and develop sufficient critical thinking skills to allow for intelligent debate of controversial biological issues in the food industry.
- Students will obtain the mechanistic understanding of the chemical, biological, and physical methods of food preservation required for their appropriate application in food processing.

## ASSIGNMENTS/RESPONSIBILITIES & ASSESSMENT:

**Exams:** Exams will test factual knowledge, the ability to integrate knowledge, and the ability to solve problems using the knowledge obtained in class and through outside readings. Students may request re-evaluation of an exam within 2 weeks of receiving a grade. No grades will be changed after 2 weeks.

**Proposal:** Scientists frequently write (3 pages, single space, 1" margins) proposals when seeking funds from granting agencies. The proposal will be used to demonstrate that students ability to develop research hypothesis and objectives, articulate research need and outcome, construct a logical approach to test the stated hypothesis. A budget is also required and students will be evaluated on appropriateness of the budget - personnel, supplies, and other expenditures. Budget not included in page limit. Students working in groups (no more than 2 persons) will write a proposal for *original* research in an area of *food microbiology*. It **may not** be taken directly from their current research or work assignment. Details will be given in class.

**Participation:** Students are expected to participate in class. There is no specific reward (grade) attributed to participation. However, the difference between an A grade and a B+ grade may be decided based on participation. For example, a numerical grade of 89.4 may be rounded to a numerical grade of 90, and therefore a letter grade of A, based on participation.

Final course grade will be based on:	Approximate grading cut-offs:
Exam 1 and Exam 2; 20% each	90-100 A = outstanding, does it all
Exams 3, 4, and 5; 15% each	85-89 B+
	80-84 B = excellent in most areas
Proposal 15%	75-79 C+
	70-74 C = satisfactory factual knowledge
	< 70 F = unsatisfactory

Students are expected to learn a significant amount of factual information on their own by reading. Unfortunately, no "one source" covers all or contains all of the factual information required by this course. The following resources may be beneficial:

1. Food Microbiology: Fundamentals and Frontiers, Fourth edition, edited by Doyle and Buchanan. ISBN-13: 978-1555816261.
2. Food Microbiology: An Introduction, 2017, [Forth edition], edited by Matthews, Kniel and Montville. ISBN 9781555819385, ebook: 9781555819392
3. Reference material is copied and distributed to the class where allowed by copyright law.

## Course Lectures:

Course materials will be posted on canvas at the lecturers discretion.

## Faculty:

Dr. Karl Matthews *	FSNSW	Rm. 107	<a href="mailto:Matthews@sebs.rutgers.edu">Matthews@sebs.rutgers.edu</a>	932-5430
Dr. Mike Chikindas	FSNSW	Rm. 203	<a href="mailto:tchikind@SEBS.Rutgers.edu">tchikind@SEBS.Rutgers.edu</a>	932-5405
Dr. Beverly Tepper	FSNSW	Rm. 207	<a href="mailto:btepper@sebs.rutgers.edu">btepper@sebs.rutgers.edu</a>	932-5417
Dr. Loredana Quadro	FSNSW	Rm. 403	<a href="mailto:lquadro@sebs.rutgers.edu">lquadro@sebs.rutgers.edu</a>	932-5491
Dr. Diana Roopchand	IFNH	Rm 220	<a href="mailto:dianaer@sebs.rutgers.edu">dianaer@sebs.rutgers.edu</a>	932-0248

## **OTHER INFORMATION:**

### **Rutgers Academic Integrity**

- <http://academicintegrity.rutgers.edu/academic-integrity-policy/>
- [https://slwordpress.rutgers.edu/academicintegrity/wp-content/uploads/sites/41/2014/11/AI\\_Policy\\_2013.pdf](https://slwordpress.rutgers.edu/academicintegrity/wp-content/uploads/sites/41/2014/11/AI_Policy_2013.pdf)

## **STUDENT WELLNESS SERVICES**

### **Just In Case Web App** <http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

### **Counseling, ADAP & Psychiatric Services (CAPS)**

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ [www.rhscaps.rutgers.edu/](http://www.rhscaps.rutgers.edu/)

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

### **Violence Prevention & Victim Assistance (VPVA)**

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / [www.vpva.rutgers.edu/](http://www.vpva.rutgers.edu/)

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932- 1181.

### **Disability Services**

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

### **Scarlet Listeners**

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.