

COURSE OVERVIEW

Introduction to Microbiology

11:680:202 Each Spring Semester

Meeting times TBD

Meeting Location Food Science 201

CONTACT INFORMATION:

Instructor(s): Dr. Ines Rauschenbach

Office Location: Lipman 215

Phone: 848-932-5635

Email: inesrau@sebs.rutgers.edu

Office Hours: By Appointment

COURSE WEBSITE, RESOURCES AND MATERIALS:

- **Canvas**
- **Lab Manual**
 - The lab manual (departmental publication) will be available for free through RUCore.
- **Electronic Notebook**
 - We will be sending you a link to LabArchives. You must sign up before the start of your first lab.

COURSE DESCRIPTION:

Introduction to Microbiology Laboratory is a 1-credit course with one 3-hour lab per week. This laboratory course will serve as a companion course to Introduction to Microbiology Lecture (11:680:201). It is designed to reinforce the concepts taught in the lecture course and will allow students to apply the knowledge in practice to various microbiology lab topics.

LEARNING GOALS:

After completion this course, successful students will:

1. Recognize and employ best lab practices for safe handling of microbial cultures
2. Practice the use of a phase contrast microscope to observe microorganisms and report observed characteristics.
3. Discover environmental factors affecting microbial growth
4. Evaluate the impact of microbes on human health and the environment
5. Relate concepts in molecular microbiology to laboratory experiments
6. Use their knowledge of microbial growth and biochemical processes to identify unknown organisms
7. Apply the scientific inquiry process to design experiments, collect data, interpret findings, and report on these in oral and written format

ASSIGNMENTS/RESPONSIBILITIES, GRADING & ASSESSMENT:

Grading

The course grade will be based on weekly quizzes, midterm, comprehensive lab practical, lab notebook entries, and one lab report:

Weekly Quizzes	20%
Weekly Notebook Entries	20%
Midterm	10%

Lab Practical	20%
Probiotics Lab Report	10%
Unknown Factsheet	10%
Attendance/Participation	10%
Total	100%

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES

Please follow the procedures outlined at <https://ods.rutgers.edu/students/registration-form>. Full policies and procedures are at <https://ods.rutgers.edu/>

ABSENCE POLICY

Students are expected to attend all classes; if you expect to miss one or two classes, please use the University absence reporting website <https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence. An email is automatically sent to me.

COURSE TOPICS:

Lab	Topic	Follow Up
1	Biosafety and Best Lab Practices Culturing and Handling Microorganisms (Culture transfer, quadrant streak method) Preparation of a culture medium Handwashing	
2	Microbes in the Environment Dilutions	Preparation of a culture medium Handwashing
3	Introduction to Microscopy Smear Preparation	Culturing and Handling Microorganisms Microbes in the Environment
4	Simple and Differential Staining Techniques (Simple, Negative, Gram, Spore Stains) Biofilms	
5	Selective and Differential Media Growth Factors	
6	Isolation of Microbes from Probiotic Products - Experimental Design	Selective and Differential Media Growth Factors
7	Midterm Isolation of Microbes from Probiotic Products - Inoculations	
	Spring Break – No Labs.	
8	Metabolic Characterization of Unknown Bacteria (Gram Staining)	Isolation of Microbes from Probiotic Products - Data and Conclusion

9	Metabolic Characterization of Unknown Bacteria (Enzyme tests, inoculations)	Isolation of Microbes from Probiotic Products
10	Metabolic Characterization of Unknown Bacteria	Metabolic Characterization of an Unknown Microbe
11	Chemical and Physical Control of Microbes Lab Report – Probiotics Due	
12	Eukaryotic Microbes, Biofilms, and Microscopy Check Out, Review	Chemical and Physical Control of Microbes
13	Lab Final Unknown Factsheets Due	

FINAL EXAM/PAPER DATE AND TIME

Online Final exam Schedule: <http://finalexams.rutgers.edu/>

ACADEMIC INTEGRITY

The university's policy on Academic Integrity is available at <http://academicintegrity.rutgers.edu/academic-integrity-policy>. The principles of academic integrity require that a student:

- properly acknowledge and cite all use of the ideas, results, or words of others.
- properly acknowledge all contributors to a given piece of work.
- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that

- everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- all student work is fairly evaluated and no student has an inappropriate advantage over others.
- the academic and ethical development of all students is fostered.
- the reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ 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/

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 / <https://rutgers.campuslabs.com/engage/organization/scarletlisteners>

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