




Course Information

Credits:

Lab hrs: 1 credit = 2 clock hrs/week (28 hrs/semester)

NSG 315 1 : Microbiology Lab for Hlth Sci (1.0 Credits)

 Summer Semester 2022  Center for Lifelong Learning  School of Nursing

This course is designed as a stand-alone lab that can be taken concurrently with any microbiology course such as Microbiology and Application to Health (NSG 309). Learners will study microscopic organisms that range from observing eukaryotic and prokaryotic cell structure to understanding microbial genetics. This distance learning lab provides learners with the knowledge and skills necessary to conduct laboratory experiments, observe and analyze results, and complete laboratory reports in the home setting. Open to nonmatriculated students.

Pre-Requisite(s):

Prior or concurrent didactic microbiology course is recommended.

Co-Requisite(s):

Prior or concurrent didactic microbiology course is recommended.

Course Format:

Self-Paced

Meeting Days, Times and Locations,:

Fully online. No required in-class sessions. See course outline for anticipated time of completion. Students should plan on a minimum of four weeks to complete this course..

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Course Learning Outcomes (CLO):



1. Describe various types of microorganisms.



2. Conduct lab experiments using proper technique.



3. Quantify the number of microorganisms in a given sample.



4. Explain the techniques used to control microbial growth.



5. Analyze how different types of media can be used to grow specific microorganisms.



6. Examine how various nutrient sources and ecological factors impact microbial growth.

Assignments & Assessments

Teaching Methods/Activities:

This course uses a combination of methods to facilitate learning and mastery of content, including:

- Safety guidelines
- Virtual presentations
- Instructional videos
- Case studies
- Recommended websites
- Practice questions
- Digital Lab Manual
- Hands-on experiments conducted in the student's home setting
- Observation and analysis of laboratory results
- Laboratory reports
- Customer support and service

Evaluation Measures/Learning Outcomes:

Course Requirement	Percent of Total Grade	Alignment with Student Learning Outcome(s)
1. Completion of Laboratory Experiments (Evidenced by Lab Photo upload)	20%	SLO 1-6
2. URSON Lab Manual	40%	SLO 1-6
3. Quizzes	40%	SLO 1, 3, 4, 5, 6

The final grade entered is based on School of Nursing grading system. See *Student Handbook* (<https://www.son.rochester.edu/assets/pdf/studenthandbook.pdf>)

This course is entirely online, so the only way course faculty have to contact you is through the email you used to sign up for this course. You should be checking your email at least 3-4 times per week in case course faculty are trying to contact you. This is extremely important. Please feel free to contact course faculty with any questions.

You must submit individually completed pictures demonstrating your own work.

You must submit individually lab reports in your own words.

Grading System:

The student's final numerical grade will be converted to a letter grade based on the following University of Rochester undergraduate student grading criteria:

A	93-100	C	73-76	
A-	90-92	C-	70-72	"C-" is considered unsatisfactory work for undergraduate students; see <i>Student Handbook</i> for implications.
B+	87-89	D+	67-69	
B	83-86	D	63-66	
B-	80-82	D-	60-62	
C+	77-79	E	<60	Failing grade; see <i>Student Handbook</i> for implications.

Grades will be rounded up so that 0.5 (and above) rounds to the next whole number (e.g., a grade of 72.5 will round up to a 73; rounding is only to the tenths; for example, 72.47 does not round up to a 72.5).



The Center for Lifelong Learning wants to make sure you have the time you need to do your best work in this course. It is your responsibility to reach out to course faculty to ask for more time if you need it, and to sign the contract that is sent to you and return it before the end of the semester. Failure to do so will result in zero points posted for any outstanding work and a final grade being calculated and posted.

Required Textbook(s):

eScience Labs, Microbiology 2nd Edition Lab Kit

Required Materials:

Students will be required to take photographs and/or videos of each lab set-up and upload them to Blackboard. Additional household materials (e.g., bleach, food, measuring cups/spoons) to use throughout the experiments as outlined on the eScience Labs website found here: <https://esciencelabs.com/student>

Course Outline:

Lab Topic	Lab #	Approximate Time to Complete
Introduction to Science	1	2 hours
Microbiology Lab Safety	2	Preparation: 30 minutes Observation and Analysis: 2-3 days
Introduction to the Microscope	3	1 hour
Introduction to Culturing and Aseptic Technique	4	Preparation: 60 minutes Observation and Analysis: 6 days
Structure and Microscopy	5	Preparation: 90 minutes Observation and Analysis: 3 days
Growth of Microorganisms	6	Preparation: 60-90 minutes Observation and analysis: 4-6 days
Quantitation of Cultured Microorganisms	7	Preparation: 60-90 minutes Observation and Analysis: 2-3 days



Selective Media and Agar	8	Preparation: 3-4 hours Observation and Analysis: 1-2 weeks
Differential and Biochemical Tests	9	Preparation: 5 hours Observation and Analysis: 4-6 days
Eukaryotic Microbes, Parasitology, and Viruses	10	Preparation: 2 hours Observation and Analysis: 2 weeks
Food Microbiology	11	Preparation: 60-90 minutes Observation and Analysis: 28 hours
Microbial Genetics and Genetic Engineering	13	30 minutes

Other Useful Information for Students:

Students are responsible for checking in UR Student to make sure their final grade is posted before ordering a transcript. If the student's final grade appears in UR Student, it will appear on their transcript.

Academic Policies

➔ Disability Statement

If you have a disability for which you may be requesting an academic accommodation, you are encouraged to contact both your instructor and the access coordinator for your school to establish eligibility for academic accommodations.

➔ Academic Honesty Statement

Students are responsible for their own work. Students are expected to have read and to practice principles of academic honesty. See Student Handbook (<https://www.son.rochester.edu/assets/pdf/studenthandbook.pdf>)

Student attestation is completed on Blackboard for each course.

➔ Professional Behavior / Civility Statement


The University of Rochester, School of Nursing (SON) seeks to provide an environment for learning and teaching that is respectful of diverse persons and points of view in all classroom, electronic, and clinical settings. Consistent with this goal, it is expected that diverse perspectives and opinions will be expressed and received in a respectful and professional manner. Incivility, intolerance, hate speech, and abusive behaviors are considered professional misconduct and will be acted upon in accordance with the statement in the Student Handbook. (<https://www.son.rochester.edu/assets/pdf/studenthandbook.pdf>)

➔ Title IX/Sexual Harassment Policy

All members of the University community have the right to learn and work in a safe environment free from all forms of harassment, including harassment on the basis of sex or gender. Students who have been subjected to sexual harassment, including sexual assault, dating/domestic violence or stalking, have the right to receive academic, housing, transportation or other accommodations, to receive counseling and health services and to make a report about such behavior to the University and to law enforcement. For more information please visit www.rochester.edu/sexualmisconduct.

 HIPAA Compliance

Students are to abide by the University of Rochester HIPAA Compliance Guidelines which can be found on the SON website (<http://son.rochester.edu/r/HIPAA-Video>).

 ADA Statement and Holidays

See Student Handbook (<https://www.son.rochester.edu/assets/pdf/studenthandbook.pdf>)