

Course Syllabus – Fall 2025
BIOL 200L INTRODUCTION TO CELLULAR BIOLOGY AND GENETICS LABORATORY

Section	Lab Time	Room	Instructor	Instructor Email	Office Hours	Location
001	Mon 12:30 – 3:20pm	SC 5352	Cheryl Warren	cwarren@towson.edu	T 1-2pm W 1-2pm	SC5101E
003	Tues 9:00 – 11:50am	SC 5352				

Laboratory Manual: The lab manual is available digitally in sections on the class Blackboard site. Printed copies will be available for reference in each lab.

Laboratory Fees: This course requires a laboratory fee. The use of the lab fee for this course (and all such courses at Towson) has been approved by the Provost Budget Office.

Course Description: An introduction to biology, including biologically important molecules, cell and tissue structure, respiration, photosynthesis, mitosis, meiosis and genetics. Average of three laboratory hours per week.

Course Learning Outcomes and Objectives: The following outline summarizes the objectives for BIOL200L. It is not meant as a specific study guide and does not include the details you need to know to accomplish the goals. The objectives summarize the "big ideas" that we will be covering in this course.

- I. Understand and apply the scientific method to solving problems
 - A. Recognize that the scientific method is simply a way of approaching a problem that begins with understanding a set of basic information.
 - B. Learn to develop hypotheses and to design controlled experiments to test them.
- II. Be able to analyze and interpret data
 - A. Be able to calculate the appropriate descriptive statistics.
 - B. Be able to apply the concept of significant figures.
 - C. Be able to calculate and interpret basic statistical tests.
 - D. Be able to present data graphically and interpret graphs.
- III. Be able to demonstrate mastery of key laboratory skills.
 - A. Be able to select and use the proper automatic pipette for any given volume.
 - B. Be able to properly utilize a balance.
 - C. Be able to properly load and use a centrifuge.
 - D. Be able to properly utilize an absorption spectrophotometer.
- IV. Be able to explain and apply basic concepts of enzymology.
 - A. Explain what a temperature optimum is and why activity decreases at temperatures below and above that optimum.
 - B. Explain what a pH optimum is and why activity decreases at pHs below and above that optimum.
 - C. Be able to explain why salt concentrations might affect enzyme activity

We want you to appreciate that science is a process of investigating the natural world, not a collection of "facts" in a textbook. This requires active participation in the process. The laboratories that you will be participating in during this semester are going to involve testing various aspects of the models that we will be studying in lecture. Following discussion of the models and introduction to the types of techniques and equipment available, you will work in laboratory groups to design experiments to test aspects of the models. We will work through the semester to help you develop the following skills:

- to work with others effectively in cooperative efforts
- to design well-controlled experiments
- to recognize the difference between data and results
- to analyze data using appropriate calculations and graphing capabilities
- to write an accurate, well-organized laboratory report
- to present your findings before an audience of your peers

Course Requirements

Reading Assignments: There will be reading assignments and videos for each week of the course. Students are expected to complete the reading assignments and view any assigned videos before coming to class.

Examinations: There will be two exams and a laboratory practicum. Additionally, there will be nine (9) quizzes. The best seven (7) quizzes will contribute to your grade for the class. Each quiz will be administered at the beginning of class. Quizzes will cover material from the previous weeks' laboratory and assigned readings from the current week. Students who arrive late to lab may not be able to complete the quiz.

Oral Presentations: You will work with your group to present your findings three different times in class. Any student that is absent must submit an individual recorded presentation for grading. As a lab group (up to 4 students), you will also complete one formal oral presentation recorded using PowerPoint. You and your group will make the recordings outside of class and edit/repeat until you are satisfied with the product. A rubric for the formal presentation will be provided. Late submissions will incur a grading penalty.

Lab Notebook: Each group will maintain a laboratory notebook in which they will record all goals, procedures, observations, results, calculations, and conclusions. The lab notebook will be collected twice during the semester for grading. All members of the group are responsible for the information recorded and will receive the same score.

Attendance & Citizenship Points (35 to start, Deduction only): Points will be deducted for late arrivals, failure to follow lab safety rules, failure to clean up materials and lab bench, unauthorized use of electronics during class, failure to participate in current lab activity. **It is possible to earn a negative number in this category.**

Grading Policy: The final grade will be calculated based on a total of 800 points as follows:

Assignment	Points
First Lab Notebook Review	25
Second Lab Notebook Review	25
Two Exams @ 100pts/exam	200
Lab Practicum	150
Group Presentations (3 x 25 pts)	75
Enzyme Formal Presentation	100
7 of 9 Quizzes @ 20 pts/quiz	140
Citizenship Points	35
Lab Safety certificate	25
Excel Assignment	25
Total	800 pts

Letter Grade	% Range	Letter Grade	% Range	Letter Grade	% Range	Letter Grade	% Range
A	92 - 100%	B+	88 – 89.9%	C+	78 – 79.9%	D+	68 – 69.9%
A-	90 - 91.9%	B	82 - 87.9%	C	70 – 77.9%	D	60 - 67.9%
		B-	80 – 81.9%			F	< 60%

Please note: your grade in Blackboard may not reflect final grade in the course (there are hidden fields in the BB site, including for the quiz grades that may be dropped). For your actual course grade, please contact your instructor.

Policies

Attendance

Attendance for this course is MANDATORY. Biology is a laboratory science, and it is essential to learn proper procedures for planning and carrying out experiments. This course is hands-on and cannot be replicated outside of the lab. You will be working in cooperative groups to design and carry out experiments. If you are absent, you are not fulfilling your responsibilities to your laboratory group. You are expected to be in your seats and ready to start working when class starts. Arriving 10-30 minutes late will be penalized by a deduction of 5 pts for each 10-minute interval or part thereof. **Coming to laboratory significantly late (>30 min) or leaving early without permission will be considered an absence.**

Students MUST notify the instructor **at least 2 weeks prior to a planned absence** due to

- Religious observance where the nature of the observance prevents class attendance
- Participation in University activities at the request of University authorities

The missed laboratory will be made up by the submission of an acceptable make-up assignment posted by the instructor. Up to 3 missed labs may be made up. For each lab missed without being made-up, your final course grade will be lowered by 5% (40 points). **Missing 4 or more labs will result in a grade of F for the course.**

Laboratory Safety. This is a laboratory course. As such, the following safety requirements must be followed by all students in the course. Students are expected to follow all safety rules and regulations, both written and verbal, at all times in the laboratory. Students who fail to comply with safety regulations will be asked to leave the laboratory, and will be subject to the penalties outlined below.

- **Eating or drinking is not permitted in the lab room.** This includes gum, mints, cough drops. No Chapstick or cosmetics may be applied in the lab room. All food and drinks must remain in your closed bag inside the cabinet (cubbies) or on the table outside the lab room.
- **Proper lab attire is required every week (enforcement begins September 8th).**
 - Closed-toe shoes that cover the top of the foot (no flip flops/sandals/crocs at any time)
 - Long pants/skirts that cover your legs and ankles
 - No exposed midriff/stomach/lower back/shoulders (no spaghetti strapped or cropped or backless tops)
 - Long hair should be tied back during experiments
 - Gloves must be worn when directed by instructor (these are provided in the lab).
 - Safety glasses must be worn when directed (provided and sanitized in the lab).
- **Follow instructors' directions** for appropriate disposal of experimental waste and reagents.

Students who come to lab without the appropriate dress (enforced after September 8th) will not be permitted to participate in lab activities, and an unexcused absence will be recorded.

Late Work. Assignments submitted late will receive a grade reduction of 20% of the maximum score for each day or part of the day late. Quizzes are not accepted late. There are **no make-ups** for missed quizzes. Students who miss a scheduled lab exam must inform the instructor of their absence within 24 hours, and arrange for a make-up exam at the discretion of the instructor.

Use of Electronic Devices. The use of ear buds or headphones is not permitted at any time during the lab. Cell phones should be turned off or on "silent" and stored away from the lab workspace unless instructed otherwise. If you are observed text messaging during instructional time you will receive a warning for the first violation; each subsequent violation will result in a **10-point deduction** from your final grade. Anticipated emergency calls are exempt, but inform the instructor before class. The use of a laptop or tablet internet-capable device during instructional time is permitted to take/read class-related material ONLY; doing homework, surfing the web, checking e-mail, instant messaging, or other non-class-related uses are **not** permitted. If any of these prohibited activities are observed, the student will be required to leave the classroom immediately. There will be no makeup for any work, quiz, or examination you may miss after your departure. We reserve the right to prohibit internet usage in the lab if this privilege is abused, if it distracts the instructor, or if it impedes the ability of other students to learn.

Academic Honesty. The Towson University Code of Conduct prohibits "all forms of dishonesty including cheating (and) plagiarism." Cheating and plagiarism are defined in the Student Academic Integrity Policy (<https://www.towson.edu/about/administration/policies/03-01-00-student-academic-integrity-policy.html>) and should be reviewed by each student. **The consequences of violating the Academic Integrity policy may result in the assignment of zero points for the examination, quiz or assignment/paper in question, and must be reported to the Office of Student Accountability & Restorative Practices.**

Student Conduct. To make our time together more valuable, we are going to establish a basic philosophy:
"Every student has the *right* to learn, as well as the *responsibility* not to deprive others of their right to learn."

To ensure that we observe this philosophy, I will ask you to respect the following policies:

1. Be on time. Late arrival is disruptive and violates our basic philosophy.
2. Do not schedule other engagements during class time.
3. It is not acceptable to wander in and out of the classroom during the class period.
4. If you have trouble hearing or concentrating due to distractions around you, quietly and politely ask those responsible for the distraction to stop.
5. Please let us know if there is any problem that is preventing you from performing well in this class. We will do our best to improve the situation.
6. No cell phones or any other electronic device other than an approved calculator is permitted on desks during tests.

Americans with Disabilities Act. This course is in compliance with Towson University policies for students with disabilities. Students with disabilities are encouraged to register with Accessibility & Disability Services (ADS), 7720 York Road, Suite 232, 410-704-2638 (Voice) or 410-704-4423 (TDD). Students who suspect that they have a disability but do not have documentation are encouraged to contact ADS for advice on how to obtain appropriate evaluation. A memo from ADS authorizing your accommodation is needed before any accommodation can be made. Accommodations are not retroactive to previous exams or assignments. Please try to secure and provide your documentation during the first week of class. <https://www.towson.edu/accessibility-disability-services/>

Diversity Statement. Towson University values diversity and fosters a climate that is grounded in respect and inclusion, enriches the educational experience of students, supports positive classroom and workplace environments, promotes excellence, and cultivates the intellectual and personal growth of the entire university community. Should you feel that you are experiencing a negative environment related to diversity issues or cultural sensitivity, we encourage you to contact the Department's Assistant Chair, [Prof. Charlotte Saylor – csaylor@towson.edu]. For more information go to <https://www.towson.edu/fcsm/departments/biology/diversity.html>

Title IX policy. Towson University (TU) is committed to ensuring a safe, productive learning environment on our campus that does not tolerate sexual misconduct, including harassment, stalking, sexual assault, sexual exploitation, or intimate partner violence [Policy 06.01.60]. It is important for you to know that there are resources available if you or someone you know needs assistance. You may speak to a member of university administration, faculty, or staff, but keep in mind that they have an obligation to report the incident to the Title IX Coordinator. It is a goal that you feel able to share information related to your life experiences in classroom discussions and in one-on-one meetings. However, it is required to share information with the Title IX Coordinator regarding disclosures, but know that the information will be kept private to the greatest extent possible. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the TU Counseling Center 410-704-2512 to schedule an appointment, and locally within the community at TurnAround, Inc., 443-279-0379 (24-hour hotline) or 410-377-8111 to schedule an appointment. – <http://towson.edu/titleix>

Reporting Hate Crimes and Bias Incidents: <https://www.towson.edu/about/administration/policies/06-01-20-policy-procedures-reporting-hate-crimes-bias-incidents.html>

Counseling Services. Students who are experiencing personal difficulties or mental health challenges are encouraged to seek free and confidential assistance at the Towson University Counseling Center (TUCC). Same-day appointments are available, and you can reach a crisis counselor by phone after hours. For more information about TUCC, please visit their website at <https://www.towson.edu/counseling/>. To make an appointment or for after-hours crisis assistance, please call 410-704-2512.

Course Repeat Policy. Students may not repeat a course more than once without prior permission of the Academic Standards Committee.

Video recording and photography are not permitted without permission from the instructor.

Preliminary Lab Schedule Fall 2025

Week	Dates	Laboratory Activities	Reading/Viewing Assignments	Assignment Submissions
1	Aug 25- Aug 29	Course Introduction Lab Safety Experimental Design	Syllabus lab safety	
2	Sep 1 – Sep 5	NO IN-PERSON LAB THIS WEEK. ONLINE ASYNCHRONOUS ASSIGNMENTS		lab safety (online module) Excel assignment
3	Sep 8 – Sep 12	Technique Training Week 1: Centrifugation, Balance, Pipetting		Quiz 1: Techniques, experimental design
4	Sep 15 – Sep 19	Technique Training Continued Vitamin C Standard Curve Intro to Vitamin C Lab		Quiz 2: Vit C intro, Lab math
5	Sep 22 – Sep 26	Perform Vitamin C Experiment		Quiz 3: Standard curve, spectrophotometry
6	Sep 29 – Oct 3	Vitamin C Lab – Data Analysis Group Presentations at end of class		Quiz 4: Vitamin C Submit group presentation slides to BB to share.
7	Oct 6 – Oct 10	Lab Exam 1 (Techniques and Vitamin C Lab) Intro to Osmosis Lab – Design (develop hypothesis, experimental and control variables, set up)		First Laboratory Notebook Grading at end of Vitamin C Lab
8	Oct 13 – Oct 17	Osmosis Lab		Quiz 5: Osmosis intro
9	Oct 20 – Oct 24	Osmosis Lab Analysis/Discussion Groups share data in class. Plan for Enzyme Lab		Quiz 6: Osmosis Submit group presentation slides to BB to share.
10	Oct 29 – Oct 31	Enzyme Lab		Quiz 7: Protein structure, enzymes,
11	Nov 3 – Nov 7	Enzyme Lab Analysis/Discussion Groups present informally in class.		Quiz 8: enzyme experiment Notebook Grading at end of Enzyme Lab. Submit group presentation slides to BB to share.
12	Nov 10 – Nov 14	Genetics Problems		Quiz 9 – lab exam review Second Laboratory
13	Nov 17 – Nov 21	Lab Exam 2 Practical Practice		Group Enzyme Lab Recordings Due Monday, November 17 th at 12 PM (noon!)
	Nov 24 – Nov 27	NO LABS – THANKSGIVING BREAK		
14	Dec 1 – Dec 5	Lab Practical (held in 25-minute slot on lab day)		

Due to unforeseen circumstances (global warming, snow, pandemics, etc.) as well as the capricious nature of laboratory science, this schedule may be modified. Any updates will be posted in Blackboard.