College of Marin, Life and Earth Sciences Department, Fall 2025

BIOLOGY 110L
Introduction to Biology Laboratory

Course Information

Instructor: Professor Wendy St. John
Email: wstjohn@marin.edu
Office: SMN 329
Office Hours: Wednesday and Thursday, 4 - 6 p.m.; please contact me for an appointment outside of my scheduled hours, or if you would like to meet over Zoom.

Course Meeting Times: Monday 1:10 – 4:00 p.m. Science, Math and Nursing Center 112

Course Description

A hands-on course designed to develop basic laboratory skills and techniques and to illustrate basic biological concepts and principles for majors and non-majors. Essential skills include use of lab and field equipment and recording and interpretation of observations. Subjects in ecology, evolution, genetics, anatomy, physiology, cell biology and molecular biology are investigated through observations and experiments in the laboratory and in the field.

Student Learning Outcomes (SLOs)

A. Perform observations, construct hypotheses, perform experiments and interpret them in the context of important biological theories.
B. Use correctly the international system (SI or metric system) of measurement.
C. Select the correct kind of microscope for viewing small specimens, prepare specimens for viewing and bring them into good focus with optimum illumination.
D. Use laboratory equipment appropriately, safely, and effectively
E. Critical Thinking: In following scientific methodology, students will be able to: analyze and interpret graphic materials, deduce valid conclusions from recorded data and evaluate the ability of laboratory procedures to show cause and effect.

Course Materials

The required textbook for this course is the “Introduction to Biology Laboratory Manual,” 18th edition, Jan, 2022, College of Marin. It is available for purchase in the COM Bookstore

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Laboratory Schedule

Week	Lab	Due at the start of class
1: Aug 25	1B: Observation and Description in Biology II: Quantitative	
2: Sept 1	**No lab: Labor Day Holiday**	
3: Sept 8	1A: Observation and Description in Biology I: Qualitative	Pre-Lab: 1B and 1A Procedure, Results, Discussion and Practice Sheets: Lab 1B
4: Sept 15	3: Movement of Energy and Nutrients in a Salt Marsh Ecosystem (field trip) 6: Cycling of Nutrients Between Producers and Consumers 4: Litter Critters	Pre-Lab: 3, 4 and 6 Procedure, Results, Discussion and Practice Sheets: Lab 1A
5: Sept 22	5: Water - A Most Unusual Molecule	Pre-Lab: 5 Procedure, Results, Discussion and Practice Sheets: Lab 3, 4 & 6
6: Sept 29	**Exam #1**	Procedure, Results, Discussion and Practice Sheets: Lab 5
7: Oct 6	9: Catalysts - Molecules that Control Chemical Reactions	Pre-Lab: 9
8: Oct 13	11: Tissues, Cells and Organelles	Pre-Lab: 11 Procedure, Results, Discussion and Practice Sheets: Lab 9
9: Oct 20	7: Isolation of DNA and Modeling of Transcription and Translation	Pre-Lab: 7 Procedure, Results, Discussion and Practice Sheets: Lab 11
10: Oct 27	8: Mitosis, Meiosis and Fertilization	Pre-Lab: 8 Procedure, Results, Discussion and Practice Sheets: Lab 7
11: Nov 3	**Exam #2**	Procedure, Results, Discussion and Practice Sheets: Lab 8
12: Nov 10	10: Human Inheritance	Pre-Lab: 10
13: Nov 17	12: Observation and Dissection of Worms	Pre-Lab: 12 Procedure, Results, Discussion and Practice Sheets: Lab 10
14: Nov 24	Teacher's Choice (TC) - CSI Marin! Forensic techniques for crime solving	Procedure, Results, Discussion and Practice Sheets: Lab 12
15: Dec 1	13: Human Nervous System	Pre-Lab: 13 Procedure, Results, Discussion and Practice Sheets: Lab TC
16: Dec 8	14: Human Circulation and Breathing	Pre-Lab: 14 Procedure, Results, Discussion and Practice Sheets: Lab 13
Dec 15	**Final Exam: 2:10 - 5:00 p.m.**	Procedure, Results, Discussion and Practice Sheets: Lab 14

Assignments and Deliverables

There are 325 points available for you to earn, and grading will be based on the traditional scale (A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, and F = below 60%).

Graded Item	Points	Total points
Laboratory Reports (14)	10 points each (Pre-lab: 2.5 Procedure and Results: 5 Discussion and Practice Sheet: 2.5)	140
Lab Exams (3)	50 points each	150
Root Words HW (2)	10 points each	20
Microscope Proficiency Quiz	15	15
	Course Total =	**325 points**

Laboratory Exercises and Reports: You must prepare ahead of time for labs. Each week, you will complete a laboratory report from the BIOL 110 Laboratory Manual. A lab report includes three items:

- **Pre-lab:** Due at the beginning of the lab period each week. You will find the answers to the pre-lab questions in the introduction section of the lab topic, as well as reading through the lab procedure and results section.
- **Procedures and Results:** This includes the actual lab work you complete in the laboratory manual. Tables, charts and drawings **must** be completed in **pencil**.
- **Discussion and Practice Sheet:** Completed after the lab work; usually started in class and completed at home. Due at the beginning of the following week's lab.

Homework: Any homework will be assigned in class and due by the date indicated in the syllabus. Late homework and lab reports will only receive partial credit, and no late work will be accepted more than one week after the due date.

Exams: We will have three exams (two midterm and one final) this semester. There are **no make-up exams**. If you miss an exam for any reason, you will receive a zero for that exam. This will most likely result in a failing grade in the course.

Biology in the Community (Extra Credit Opportunity): This assignment is designed to acquaint you with the applications of biology in your community and enhance some of what you learn during the semester by attending a lecture or event on a topic of interest to you. There are many options, including talks and field trips through organizations including the Marin Audubon Society, the California Native Plant Society, Bay Nature, and the Mycological Society of San Francisco. Please refer to the "Extra Credit" assignment on Canvas for more details.

Class Policies

Be prepared! You must prepare ahead of time for labs. This includes:

- Reading the lab manual for each week's lab before coming to class. You will find the labs much more pleasant and manageable if you do this, and without this advance preparation it will be difficult to complete the labs in the time allotted.
- Completing the pre-lab questions so you can submit them at the start of class. You will find the answers to lab manual questions in the lab manual itself, or in a standard biology textbook.
    - You are welcome to use the free OpenStax textbook found here: https://openstax.org/books/biology-2e/pages/1-introduction
- The standard formula for college coursework is that every three hours of class time will result in two hours of homework, so make sure to give yourself plenty of time to complete the pre-labs.
- Bring your lab manual every week, along with a pencil. A scientific calculator and colored pencils are also recommended.
- Close-toed shoes are required at all times.

Be on time. Coming into the classroom late is disruptive, and any materials due at the start of class will be graded as late if you arrive after class has begun.

Attendance is required. Missed classes, tardiness or leaving early is disruptive to the class as a whole, and will result in lost participation points. Excessive absences (missing more than 10% of class sessions) may result in being dropped from the class. You should plan to be in the lab for the entire duration, and should not schedule appointments during class time. Please email me if you cannot attend due to illness or an emergency. If you must miss a lab class, you may be able to attend another lab section **in the same week** to make it up. Completing labs at home is not an option, so any week that you don't attend the lab will result in zero points for that assignment.

Please note that students who choose not to continue the course are responsible for dropping themselves via the student portal or by contacting the admissions office. Please do not assume that I have filed a drop card. Failure to officially drop the course may result in a failing grade.

Complete all work. Any lab reports that are turned in incomplete will not receive full credit. If an emergency arises that does not let you complete work according to the class schedule, you must contact me ASAP to discuss options. Because you will usually be working with a partner or small group, it is encouraged to discuss assignments with your group members. However, all written submissions you make must be your own original and unique work, in your own words.

Special considerations: If you have any special needs or concerns, please do not hesitate to let me know. We will be working in a hands-on environment, and challenges may arise that do not generally come up in the lecture classroom. During labs, especially when using the microscope, close physical proximity and physical contact may occur. Please let me know if this makes you uncomfortable.

Canvas Learning Management System

Canvas is COM's Learning Management System (LMS), and the Canvas page for this course will act as our home base. While you will primarily be turning in your work on paper, I will use Canvas to post announcements. Any time you have a question about something, our Canvas page (particularly this syllabus) is a great first place to look for answers. If you are unfamiliar with using Canvas, you can find good information here: https://ol.marin.edu/canvas-overview.

Student Accessibility Services

If you need accommodations, please contact the College of Marin students Student Accessibility Services (SAS) Office, (415) 485-9406; http://ss.marin.edu/sas. Available accommodations include learning disabilities assessment, computer-assisted instruction for special learning needs, and specialized academic, personal, and vocational counseling. The college also offers educational and mobility aids, note-takers, readers, e-text, and interpreters, as well as liaison with instructors and other campus services and referrals to community agencies. Students granted accommodations should provide me with written specific accommodations provided by SAS, and I will work with you to make sure you have what you need to be successful in my class.

Undocumented Student Services

Undocumented and DACAmented students and students from mixed-status families are welcome at College of Main (COM), and in my classrooms. COM provides students with the guidance, services, and resources needed to be successful here. For resources and support, please contact:

Undocumented Student Services: (415) 485-9616 undocu@marin.edu

Standards of Student Conduct and Behavior Expectations

As a student in this class and of the College of Marin, you are expected to adhere to the Standards of Student Conduct. Failure to abide by these policies in class will result in being removed from class for up to two class periods (per AP 5520) and a referral through the student conduct process.

Please familiarize yourself with these policies here:

Board Policy 5500 — Standards of Student Conduct

Administrative Procedure 5520 — Student Discipline and Due Process

I would like to particularly draw attention to parts of item 14:

- Cheating, plagiarism (including plagiarism in a student publication), or knowingly engaging in other forms of academic dishonesty, including, but not limited to:
    - Copying, in part or whole, from someone else's quiz, examination, or work. For the purpose of this item, "examination" includes quizzes, tests, and other graded or evaluated exercises.
    - Incorporating sentences, paragraphs, or parts of another person's writing, without giving appropriate credit, and representing the product as one's own work.
    - Submitting an academic assignment purchased from a research/term paper service, or written by another individual; or work obtained electronically (e.g. via the internet or Artificial Intelligence) and representing it as one's own work.
    - Purposefully allowing another student to copy from your paper during an examination.
    - Giving your homework, term paper, or other academic work to another student to plagiarize.
    - Misrepresenting circumstances in an effort to improve a grade.

Due to the hands-on, exploratory nature of the content in this laboratory course, I do not allow any use of generative artificial intelligence (AI) tools (e.g., ChatGPT, Notebook LM).

Basic Needs Security

Any student who has difficulty affording groceries, accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the COM CARE Team for support. The COM CARE Team can be reached by calling (415) 485-9376 or by emailing studentactivities@marin.edu.

You are also welcome to reach out to me if you are comfortable doing so, and I can provide you with any other resources that I may possess.