

Introductory Biology Laboratory: BIOL12b

Summer 2024

Contact Details

Instructor:

- Dr. Jessie Cuomo - jcuomo@brandeis.edu

Communication

A majority of communication will be performed using Latte and email. All communication should be through your official Brandeis email address.

The staff of BIOL12 is here to help you learn and understand the material in any way possible. Please remember, however, that all staff members, including TAs, have both personal and professional commitments beyond this course. All concerns and questions should be addressed during office hours or during appointments scheduled at least 72 hours in advance. Unannounced drop-ins and contacting a staff member by means not provided by that individual (cell-phones, personal residences, etc.) is not appropriate, and will not be tolerated.

Email is a reliable way to contact staff members. Please expect at least a 48-hour turnaround time on all email inquiries (longer over weekends or holidays) and plan accordingly. Staff members cannot communicate with students via social media.

As soon as you know you will be missing class for any length of time beyond a single class or lab, please let me know. I am willing to work with you, but I cannot do so retroactively. Any changes to the course will be communicated via Latte.

Meeting Times/Locations

Lecture/Lab meetings

Monday, 1 PM to 4 PM, Biolab

Student Hours (Office Hours)

Tuesdays 12 pm and by appointment (email)

Accommodations

If you think you may require disability accommodations, you will need to work with Student Accessibility Support (SAS) (781-736-3470, access@brandeis.edu). You can find helpful student FAQs and other resources on the [SAS website](#), including guidance on how to know whether you might be eligible for support from SAS. If you already have an accommodation letter from SAS, please provide me with a copy as soon as you can so that I can ensure effective implementation of accommodations for this class. In

order to coordinate exam accommodations, you need to provide the accommodation letter at least 48 hours before an exam.

Course Description

Course Prerequisite(s):

- BIOL15 and sophomore standing.
- MATH5a or equivalent: mathematics using algebra will be used regularly.

Learning Goals:

Course Objectives:

- To teach you several basic biology concepts and how to apply that knowledge in an experimental setting.
- To familiarize you with several common techniques, processes, and equipment used in modern molecular biology laboratories.
- To teach you to interpret your results critically and objectively.
- To work successfully in a group project toward a common goal and to clearly communicate the work of your group in front of others.

By the end of this course students should be able to:

- Understand basic laboratory techniques such as measurement of liquids using micropipettors, serial dilutions, spectroscopy, SDS-PAGE,
- Formulate reasonable conclusions when presented scientific data and design rational hypotheses.
- Search for scientific articles using web-based search engines like Pubmed and Web of Science
- To improve your scientific communication skills in-person and remotely using Zoom recording and presenting via Zoom cloud shareable links.

Success in this course will provide essential laboratory skills that can be utilized in performing your own research in a laboratory on or off campus, scientific communication skills that can be used in any career, and critical thinking skills that allow you to develop your own experiments. The following is required for every student enrolled in BIOL12b:

- You must attend the lab section for which you are registered as there is no ability to make up labs.
- You must be appropriately dressed for lab. You may be asked to wear eye protection (goggles or eyeglasses) when performing certain experiments. Eyeglasses are sufficient for those students who wear them.
- No shorts, open-toed shoes, open midriff shirts, hats, scarves, backpacks, bags, food, drink, gum or cell phones will be permitted in lab under any circumstances. Pants and skirts must be ankle-length and no skin can be visible at the ankle. Exceptions can be made for medical and/or religious reasons, but must be discussed with Dr. C. Students violating these rules will be asked to leave and will be given a zero for the day's lab in its entirety.
- If a staff member can see your cell phone in the lab, it will be confiscated to be cleaned and then held until the end of that laboratory. You will receive a zero for participation in that lab.
- You are expected to complete all labs in their entirety.

- You are expected to check the BIOL12 Latte site regularly and often. This course is constantly evolving. Important announcements and syllabus updates will be posted on a semi-regular basis and you are responsible for this information.
- Questions regarding graded assignments should be addressed to Dr. C.
- The following concerns must be addressed to Dr. C and not to your TA/UTA:
 - All regrades for any assignment.
 - Missing lab or lecture for any reason.
 - Getting alternate data.
 - Extensions on assignments
 - Any other reason that impacts your ability to complete your work.

Credit Hours:

Success in this two-credit course is based on the expectation that **students will spend a minimum of three hours of study time per week in preparation for class** (watching the lecture, readings, protocol design, presentation practice, preparation for the quizzes, etc.)

Course Requirements

Attendance

Do not make any travel arrangements that conflict with the labs. There are no makeup labs offered. You must attend all labs to pass the course. No make ups are offered for any reason. Particularly extenuating circumstances will be handled on a case-by-case basis.

Lab Participation

You are expected to attend every lab session and participate in all discussions. In each lab you will receive a participation score. Deductions from your participation grade in each class can be taken if you are not participating, not present, late, or are acting in a manner inconsistent with laboratory expectations.

Lab Quizzes

Lab quizzes will be given at the end of each lab covering content from the lectures and procedures completed during the session.

Lab Practical

During the last lab block of the semester, you will be asked to take a lab practical. In this timed, assessed assignment, you will perform unknown experiments using skills you have gained during the semester to collect useful data. You will be assessed on the accuracy and precision of your techniques and measurements.

Course Plan

The Course plan is below. I reserve the right to change the course plan as needed to meet the goals of the course.

Summer 2024:

Mon, June 3	Tue, June 4
Lab 1: Introduction to Lab and Lab Techniques	Lab 2: Protein Concentration via SDS-PAGE Standard Curve
Mon, June 10	Tue, June 11
Lab 3: Protein Concentration via Bradford Assay	Lab 4: Protein Concentration Data Analysis
Mon, June 17	Tue, June 18
Lab 5: Transformation and Blue/White Screening	Lab 6: Enzyme Kinetics
Mon, June 24	Tue, June 25
Lab 7: Blue/White Screening Analysis and Ethics discussion	Lab 8: Protein Thermal Shift
Mon, July 1	Tue, July 2
Lab Practical	No Lab

Evaluation and Grading

Class Element	Due date for all sections	Learning Goals	Grade Percentage
Lab Participation	Weekly in each lab	Attending lab on time and participating in the lab to the best of your ability	40%
Lab Quizzes	Weekly in each lab	Assessment of the integration of lab procedure.	40%
Lab Practical	In lab - last lab of the semester	Assessment of skills laboratory skills	20%

Final Grades will be converted to letter grades using the following table where grades are not rounded up. Grades for the entire class may be scaled up as needed, but grades will never be lowered.

<u>Letter Grade</u>	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
<u>Percentage Grade</u>	93.33 or more	93.33 to 90.00	90.00 to 86.67	86.67 to 83.33	83.33 to 80.00	80.00 to 76.67	76.67 to 73.33	73.33 to 70.00	70.00 to 66.67	66.67 to 63.33	63.33 to 60.00	60.00 or less

Important Policies and Resources

Academic Integrity

Every member of the University community is expected to maintain the highest standards of academic integrity. A student shall not submit work that is falsified or is not the result of the student's own effort. Infringement of academic integrity by a student subjects that student to serious penalties, which may include failure on the assignment, failure in the course, suspension from the University or other sanctions. Please consult [Brandeis University Rights and Responsibilities](#) for all policies and procedures related to

academic integrity. Students may be required to submit work via TurnItIn.com or similar software to verify originality. A student who is in doubt regarding standards of academic integrity as they apply to a specific course or assignment should consult the faculty member responsible for that course or assignment before submitting the work. Allegations of alleged academic dishonesty will be forwarded to the Department of Student Rights and Community Standards. Citation and research assistance can be found at [Brandeis Library Guides - Citing Sources](#).

All written work and assignments must be completed independently unless specifically told otherwise. It is acceptable to use the words or ideas of another person, provided the source is properly acknowledged. You must use proper citations and quotation marks to indicate the source of any phrases, sentences, paragraphs or ideas found in published volumes, on the internet, or created by another student. Note that the use of full quotations is prohibited.

All assignments submitted via Latte are checked with Turnitin software. Any assignment that is flagged as having a high similarity or identity to any other work, whether from another Brandeis student or from another source, that is not cited will be submitted to the Office of Student Rights and Community Standards.

If any assignment is thought to be produced by any person or any software other than the student which submitted, an in-person meeting with the faculty meeting will be scheduled. During this meeting an oral explanation of the assignment, the thought process behind the assignment, and the ideas within the assignment will be assessed. If a student is unable to orally defend the assignment, the assignment and student will be reported to the Office of Student Rights and Community Standards.

Any assignment found to be plagiarized will be an undroppable zero.

Classroom Health and Safety

- Register for the [Brandeis Emergency Notification System](#). Students who receive an emergency notification while attending class should notify their instructor immediately. In the case of a life-threatening emergency, call 911. As a precaution, review [this active shooter information sheet](#).
- Brandeis provides [this shuttle service](#) for traveling across campus or to downtown Waltham, Cambridge and Boston.
- On the Brandeis campus, all students, faculty, staff and guests are required to observe the university's policies on physical distancing and mask-wearing to support the health and safety of all classroom participants. Review up to date [COVID-related health and safety policies](#) regularly.

Course Materials/Books/Apps/Equipment

If you are having difficulty purchasing course materials, please make an appointment with your Student Financial Services or Academic Services advisor to discuss possible funding options, including vouchers for purchases made at the Brandeis Bookstore.

The Biolab Manual will be purchased during Lab 0 for \$10.

Software utilized is all freely available:

- ImageJ (may not work on all tablets, but work can be completed in pairs if necessary)
<https://imagej.nih.gov/ij/download.html>



- Microsoft Office

<https://signup.microsoft.com/signup?sku=e82ae690-a2d5-4d76-8d30-7c6e01e6022e>

LATTE

[LATTE](#) is the Brandeis learning management system. Login using your UNET ID and password. For LATTE help, contact Library@brandeis.edu.

Library

[The Brandeis Library](#) collections and staff offer resources and services to support Brandeis students, faculty and staff. Librarians and Specialists from Research & Instructional Services, Public Services, Archives & Special Collections, Sound & Image Media Studios, MakerLab, AutomationLab, and Digital Scholarship Lab are available to help you through consultations and workshops.

Privacy

To protect your privacy in any case where this course involves online student work outside of Brandeis password-protected spaces, you may choose to use a pseudonym/alias. You must share the pseudonym/alias with me and any teaching assistants as needed. Alternatively, with prior consultation, you may submit such work directly to me.

Class Recordings

Class sessions will be recorded for educational purposes and links will be shared with the class. Students' presentations will be recorded for grading purposes only and will not be shared. You may decline to be recorded; if so, please contact me to identify suitable alternatives for class participation. These recordings will be deleted within two months after the end of the semester. If you can be personally identified in a recording, no other use is permitted without your formal permission. You may not record classes on your own without my express permission and may not share the URL and/or password to anyone unaffiliated with this course. Your behavior in these recordings, and in this class as a whole, must fulfill Brandeis standards:

Brandeis University is committed to providing its students, faculty and staff with an environment conducive to learning and working, where all people are treated with respect and dignity. (1) You must refrain from any behavior toward members of our Brandeis community, including students, faculty, staff, and guests, that intimidates, threatens, harasses, or bullies. (2)

(1) Brandeis Business Conduct Policy p. 2, 2020

(2) Student Rights & Responsibilities, p. 11, 2020 ed

Student Support

Brandeis University is committed to supporting all our students so they can thrive. If a student, faculty, or staff member wants to learn more about support resources, the [Support at Brandeis](#) webpage offers a comprehensive list that includes these staff colleagues you can consult, along with other support resources:

- The [Care Team](#)
- [Academic Services](#) (undergraduate)
- [Graduate Student Affairs](#)
- Directors of Graduate Studies in each department, School of Arts & Sciences
- Program Administrators for the Heller School and International Business School
- [University Ombuds](#)
- [Office of Equal Opportunity](#).