Please note:

(1) Some labs during this class will be finished before the 5:30 pm time given to sections by the registrar. The extra review time has been specifically built into the schedule such that you can complete the results and discussion questions with your partner and your TAs before leaving lab.

(2) Many of the lab procedures involve coming into lab outside of the time designated by the registrar. By enrolling in this class, you are accepting the responsibility to complete all experiments both in and out of class time.
Course Syllabus

Learning Objectives:

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

- Perform basic laboratory techniques such as measurement of liquids using pipettemen, set up and perform PCR, run agarose and polyacrylamide gel electrophoresis, perform serial dilutions, manipulate bacterial cultures and utilize sterile technique.

- Troubleshoot scientific experiments using the aforementioned techniques.

- 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

- Write beginner-level scientific lab reports.

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 how to design your own experiment, test your own hypothesis and to critically and objectively interpret your results.

- To help you learn how to properly follow directions and write a well-constructed scientific lab report.

You will find as we progress through this year, each assignment, experiment, and assessment is designed with at least one if not more of these criteria in mind. Each one of these objectives is of equal importance and will be evaluated and graded as such.

The following is required of every student enrolled in Biology 18:

- You must attend the lab section for which you are registered. In the case of a legitimate scheduling conflict, email Dr. P at least 24 hours in advance of the lab and you may be allowed to attend a different section.

- Before coming to lab, you should read the lab and complete the pre-lab assignment. All pre-labs and post-labs will be turned in via Latte. Late pre-labs and post-labs will not be accepted.

- You must attend the weekly lab lecture. During these lectures we will review topics, introduce new concepts, go over important announcements, administer quizzes, and summarize the week’s laboratory information. You are responsible for knowing and understanding this information.
• 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. Students violating these rules will be asked to leave and will be given a zero for the day’s performance points.

• 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 must purchase an introductory biology manual. You may take notes and collect data right within the manual.

• You are expected to complete all labs in their entirety. This may involve coming into lab some mornings or afternoons other than your lab day. You are responsible for completing your work and you should plan your schedule accordingly.

• You are expected to check the Biol18 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.

• The following concerns must be addressed to Dr. P and not to your TA/UTA: exam regrades, make-up lab sessions, getting alternate data and extensions on assignments. Questions regarding graded lab reports should be addressed to graduate student TAs.

• The staff of Biol18 is here to help you learn and understand the material in any way possible. Please remember, however, that all staff members 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.
Grading and Evaluation

Grades will be determined based upon the following:

1. Writing Assignments (37.5%)

Learning how to write scientifically is a key component of this course. You will have two opportunities to write most assignments. Your initial assignment will be graded electronically on Latte by the following week. You must rewrite and resubmit the assignment. Your final grade will be determined by the average of your grade on each submission. Late submissions of your assignments will not be accepted for any reason. If you fail to turn in either the first or second submission, a zero will be averaged into your grade for this report. Written assignments will not be regraded for any reason.

All writing assignments must be turned in as a PDF file. You do not need to turn in hard copies of any assignment, besides those that are specified in the manual.

Posted on Latte is the Biology 18 Introductory Biology Lab Science Communication Guide for Oral and Written Assignments. This guide has essential and useful information for all writing assignments for this semester and all writing assignments and oral communication presentation for the Spring.

- Introductory Writing Sample 2.5%
  - Assigned during Lab 1

- News and Views 5%
  - Submission 1 due beginning of Lab 3
    - Written about the paper posted on Latte.
  - Submission 2 due beginning of Lab 5
    - Rewrite based off of comments from Submission 1
    - Tuesday Students, your second submission is due Oct. 15th at 1 PM even though it is a Brandeis Monday

- Materials and Methods 5%
  - Submission 1 due beginning of Lab 6
    - Covers Labs 1 through 5
  - Submission 2 due beginning of Lab 8
    - Rewrite based off of comments from Submission 1

- Figure, Legend, Table, and Results 5%
  - Submission 1 due beginning of Lab 9
    - Data used from Lab 8
  - Submission 2 due by November 26 by 12 pm
    - Rewrite based off of comments from Submission 1

- Abstract 5%
  - Submission due beginning of Lab 10
    - Covers Labs 1 through 9 with speculation about Lab 10
2. Exams (40%)

There will be two major exams in lab lecture. Each exam is worth 20% of your grade. There are no make-ups given for exams.

- Exam I: Tuesday, October 8, 2019
  Material covered: Lab and lectures: 1-4

- Exam II: Tuesday, November 26, 2019
  Material covered: Lab and lectures: 1-10

Exam regrades must be submitted in writing within 24 hours of exams being returned. Answer Keys will not be posted until after regrades are due. The regrades must be submitted directly to Dr. Piasta. For any correction, you must provide a scientific reference for why your answer is correct and the appropriate quote for this source. If no sourced quotes are provided, your exam will not be regraded. In all cases, your entire exam will be regraded. All exams are scanned before being returned.

3. Pre and Post Labs (10%)

- A written “Purpose” and completed pre-lab questions must be turned in via Latte before the beginning of lab every week.

- Completed results and discussion questions for the previous week’s lab must be turned in before the beginning of lab the following week via Latte. All results and discussion questions for Lab 10 are due by 12 pm on Tuesday, November 26th.

- Pre-lab and post-lab questions will be graded for quality and completeness.

4. Participation and Scientific Professionalism (5%)

Participation and Professionalism points will be determined from the following:

- Respecting the lab environment

- Respecting the lab staff including your professor, your TAs, and the lab technicians

- Maintaining a respectful and professional demeanor in class, in lab, during appointments, during office hours, during conversations, and via email.

- Cleaning up after yourself

- Working/dressing/behaving in a safe and professional manner

- Students skipping lab without contacting Dr. P at least 24 hours in advance of the lab will lose all Participation/Professionalism point for the week.

- Completing outside of class time lab work
  o Having another student who is not your lab partner complete an out of class time procedure without the consent of Dr. P, Dr. M and/or Mrs. Cuomo is considered using the work of others and therefore plagiarism.
5. Quizzes (5%)

On certain Tuesdays, we will have unannounced quizzes in lecture. Additionally, we will have unannounced quizzes periodically at the beginning of lab at 1 pm. These quizzes will emphasize conceptual information from class or lab. There will be no make-ups given for missed quizzes.

6. Lab results (2.5%)

Each week, we will evaluate your lab skill and technique. The data you collect will be evaluated for completeness, accuracy, precision, and validity.

Expectations

Success in this 4-credit hour course is based on the expectation that students will spend a minimum of 12 hours of study time per week in preparation for class (readings, papers, discussion sections, preparation for exams, etc.)

This course cannot be added after the first day of class or lab has taken place. Students may not switch sections after the first week of class.

Academic Integrity

Academic integrity is central to the mission of educational excellence at Brandeis University. Each student is expected to turn in work completed independently, except when assignments specifically authorize collaborative effort. All written work and assignments must be completed independently. 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.

Students must take all exams independently without the assistance of other individuals, course notes, or internet resources. The use of calculators, cell phones, or other electronic devices during exams is strictly forbidden.

All students must complete experimental procedures independently and/or with their lab partner as indicated in the manual. Under no circumstances should a student knowingly take or use material from another student unless officially authorized by Dr. P.

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.

Violations of University policy on academic integrity, described in Section 4 of Rights and Responsibilities, may result in failure in the course or on the assignment, and could end in suspension from the University. If you are in doubt about the instructions for any assignment in this course, you must ask for clarification. Further, please notice that this course is different from previous years. The use of written assignments from previous years as reference material is strongly discouraged as assignments change significantly from year to year.
Disability

Brandeis seeks to welcome and include all students. If you are a student who needs accommodations as outlined in an accommodations letter, please talk with Dr. P and present your letter of accommodation as soon as you can. We want to support you.

In order to provide test accommodations, Dr. P needs the letter more than 48 hours in advance. I want to provide your accommodations, but cannot do so retroactively. If you have questions about documenting a disability or requesting accommodations, please contact Student Accessibility Support (SAS) at 781.736.3470 or access@brandeis.edu.
Section 4. Maintenance of Academic Integrity

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 honesty 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 (see section 20.). A student who is in doubt regarding standards of academic honesty as they apply to a specific course or assignment should consult the faculty member responsible for that course or assignment before submitting the work. Students may not drop or withdraw from a course while an allegation of academic dishonesty is pending. Instructors may require students to submit work to turnitin.com (plagiarism detection software).

4.0. Original Content: A student’s name on any written exercise (such as an examination, report, thesis, theme, notebook, laboratory report, or computer program) or provided in association with an oral presentation constitutes a representation that the work is the result of that student’s own thought and study. Any such work shall be stated in the student’s own words and produced without the assistance of others, except where quotation marks, references, or footnotes accurately acknowledge the use of sources, including sources found on the Internet. Selling copies of exams, reports, or information relating to a course is not permitted. Sharing exams, exam or quiz questions and answers, or other materials produced from a previous course, for use other than for study assistance in connection with a current course, may be considered an infringement of academic integrity.

4.1. Exams and Testing: Talking during an examination or possession or use of unauthorized materials or equipment, including but not limited to notes, cell phones, or calculators, during an examination constitutes an infringement of academic honesty. Attempting to receive credit for work not originally submitted also constitutes an infringement of academic honesty. Accepting assistance from others with or without their knowledge constitutes an infringement of academic honesty. All policies regarding examinations apply to take-home and open-book examinations.

4.2. Collaboration/Facilitation: In some instances, a student may be authorized by a faculty member to work jointly with another student or with other students in solving problems or completing projects. Students may not collaborate on assignments, however, without explicit permission from the instructor. To provide one’s own work to assist another student in satisfying a course requirement, either knowingly or through negligence, constitutes an infringement of academic honesty. Assistance from personnel associated with University-sanctioned tutoring services is acceptable.

4.3. Multiple Submissions: Unless permission is received in advance from the faculty member in charge of the course, a student may not submit, in identical or similar form, work for one course that has been used to fulfill any academic requirement associated with another course at Brandeis or any other institution. A student who perceives the possibility of overlapping assignments in his or her courses should consult with the appropriate faculty members before presuming that a single effort will fulfill the requirements of both courses.
# Course Calendar

<table>
<thead>
<tr>
<th>Writing Assignment Due By 1:00 PM Day of Lab</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory Writing (in Class, not due at 1 PM)</td>
<td>Sept. 2 NO CLASS</td>
<td>Sept. 3 Lab 1</td>
<td>Sept. 4 Lab 1</td>
<td>Sept. 5 Lab 1</td>
<td>Sept. 6</td>
</tr>
<tr>
<td>News and Views Submission 1</td>
<td>Sept. 9</td>
<td>Sept. 10 Lab 2</td>
<td>Sept. 11 Lab 2</td>
<td>Sept. 12 Lab 2</td>
<td>Sept. 13</td>
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<tr>
<td></td>
<td>Sept. 16</td>
<td>Sept. 17 Lab 3* Count Colonies AM Day After, 10am-12:30pm</td>
<td>Sept. 18 Lab 3* Count Colonies AM Day After, 10am-12:30pm</td>
<td>Sept. 19 Lab 3* Count Colonies AM Day After, 10am-12:30pm</td>
<td>Sept. 20</td>
</tr>
<tr>
<td></td>
<td>Sept. 23</td>
<td>Sept. 24 Lab 4* Start O/N Growth PM Day Before, 4pm-5pm</td>
<td>Sept. 25 Lab 4* Start O/N Growth PM Day Before, 4pm-5pm</td>
<td>Sept. 26 Lab 4* Start O/N Growth PM Day Before, 4pm-5pm</td>
<td>Sept. 27</td>
</tr>
<tr>
<td></td>
<td>Sept. 30 NO CLASS</td>
<td>Oct. 1 NO CLASS</td>
<td>Oct. 2</td>
<td>Oct. 3 Brandeis Monday</td>
<td>Oct. 4</td>
</tr>
<tr>
<td></td>
<td>Oct. 7</td>
<td>Oct. 8 EXAM 1 Lab 5* Count Colonies Thurs. AM Oct. 10th, 10am-12:30pm</td>
<td>Oct. 9 NO CLASS</td>
<td>Oct. 10</td>
<td>Oct. 11</td>
</tr>
<tr>
<td>News and Views Submission 2 (Tue. due on 15th)</td>
<td>Oct. 14 NO CLASS</td>
<td>Oct. 15 Brandeis Monday</td>
<td>Oct. 16 Lab 5* Count Colonies AM Day After, 10am-12:30pm</td>
<td>Oct. 17 Lab 5* Count Colonies AM Day After, 10am-12:30pm</td>
<td>Oct. 18</td>
</tr>
<tr>
<td></td>
<td>Oct. 28</td>
<td>Oct. 29 Lab 7* Remove from Dialysis AM Day After, 10am-12:30pm</td>
<td>Oct. 30 Lab 7* Remove from Dialysis AM Day After, 10am-12:30pm</td>
<td>Oct. 31 Lab 7* Remove from Dialysis AM Day After, 10am-12:30pm</td>
<td>Nov. 1</td>
</tr>
<tr>
<td>Materials and Methods Submission 2</td>
<td>Nov. 4</td>
<td>Nov. 5 Lab 8</td>
<td>Nov. 6 Lab 8</td>
<td>Nov. 7 Lab 8</td>
<td>Nov. 8</td>
</tr>
<tr>
<td>Figure, Legend, Table, Results Submission 1</td>
<td>Nov. 11</td>
<td>Nov. 12 Lab 9* Unfold AM Day Before, 10am-12:30pm</td>
<td>Nov. 13 Lab 9* Unfold AM Day Before, 10am-12:30pm</td>
<td>Nov. 14 Lab 9* Unfold AM Day Before, 10am-12:30pm</td>
<td>Nov. 15</td>
</tr>
<tr>
<td>Abstract</td>
<td>Nov. 18</td>
<td>Nov. 19 Lab 10* Unfold AM Day Before, 10am-12:30pm</td>
<td>Nov. 20 Lab 10* Unfold AM Day Before, 10am-12:30pm</td>
<td>Nov. 21 Lab 10* Unfold AM Day Before, 10am-12:30pm</td>
<td>Nov. 22 NO CLASS</td>
</tr>
<tr>
<td>Figure, Legend, Table, Results Submission 2 Due 12 PM on the 26th</td>
<td>Nov. 25</td>
<td>Nov. 26 EXAM II</td>
<td>Nov. 27 NO CLASS</td>
<td>Nov. 28 NO CLASS</td>
<td>Nov. 29 NO CLASS</td>
</tr>
</tbody>
</table>

*Asterisk denotes lab procedures that require you to come in outside of scheduled lab.