

Syllabus- General Chemistry Lab, Chem18a, Summer 2021

Instructor

Prof. Milos Dolnik

dolnik@brandeis.edu

Office Hours: **Mondays & Thursdays noon-12:30 pm** and by appointment

ZOOM link: <https://brandeis.zoom.us/j/99421726289> Password: **chemlab**

Lab sessions: **Mon Tue Thu Fri 1-3 pm** (and Wed, June 16 1-3pm instead of Fri 6/18)

Course Description and Learning Goals

In summer 2021 this laboratory course will be taught online. Students will be provided with BeyondLabz software and will use this software to perform two virtual laboratory experiments per week. Each experiment is divided into two parts. During the first part (on Mondays and Thursdays) students will be introduced to the studied topic and then they will perform a selected portion of virtual laboratory experiment. During the second part (on Tuesdays and Fridays) they will finish the virtual experiment. After that they will analyze measured data and work on their laboratory report. At the end of each lab session students will take a 5-question multiple choice quiz.

This course is an Experiential Learning course in which students will utilize concepts learned in the General Chemistry lecture course (Chem 11a). Throughout this course students will be introduced to important basic and advanced chemistry laboratory techniques. Students will also learn how to use fundamental chemical principles to explain experimental observations and how to interpret data collected from experiments. At the same time students learn how to record observations, how to write a good laboratory report and how to utilize basic statistical methods to evaluate measurements.

This course encourages development of analytical thinking and problem-solving skills and engages students in scientific research projects. Student interactions during lab sessions are encouraged and become an important part of this course. Both individual and shared experience helps students to understand and learn basic concepts of chemistry in thoroughly engaging environment.

Lab meetings

The lab meetings are scheduled on Monday, Tuesdays, Thursdays and Fridays from 1:00 to 3:00 pm. The only exception is week of June 14th, when there will be a session on Wednesday 6/16 to make up for Friday, 6/18 holiday observance. For more details please see the Schedule of experiments.

Student must join the meetings on time. Any student more than 2 minutes late will be noted. Any late arrival and unexcused absence will affect the student's attendance score (see below).

Lab meetings on Mondays and Thursdays will begin by discussion/review of concepts and lab techniques utilized in the particular lab session. Teaching assistants will present a prelab talk with procedural instruction. Students might be assigned to breakout rooms where they will have a chance to solidify their understanding of the lab procedure and the theory behind the experiment by reviewing basic concepts and terms. Then, after a prelab quiz, students will have an opportunity to ask questions about the lab, concepts and lab reports. After that, an experiment using BeyondLabz® software will be performed and students will collect data and record their observations.

During lab meetings on Tuesdays and Thursdays, students will continue with virtual experiment and when finished they will analyze data and work on their lab reports. At the end of these sessions, students will take a brief postlab quiz.

This laboratory course is a two-credit course and it is expected that students spend additionally at least 5 hours per week to prepare for experiments and to work on their laboratory reports.

Course Grade

Lab reports

Lab reports consist of pre-lab assignment and a post-lab report. Each lab report will be graded and **total up 50 points will be assigned to each lab report**. The following deductions will be applied if an assignment is not uploaded on LATTE on time:

Unless otherwise specified, all pre-lab assignments for a new lab and post-lab report for a previous lab are due before the beginning of each new lab session (typically on Mondays and Thursdays). Late reports will receive a 10 % penalty if handed in within the first 24 hours after the report is due. If not handed in within 24 hours, the penalty will be 25% for each day the report is late.

Lab session attendance

Attendance at all lab sessions is required. You are expected to arrive on time so the lab sessions can start promptly with the pre-lab talk at 1:00pm. Your timely attendance of lab sessions throughout the course will be noted and your attendance score will be assigned at the end. The maximum lab attendance score is 8 points (0.5 point per each lab session starting lab 2) and there will be following point assignments for each lab session:

Arrival on time:	0.5 point
Arrival more than 2 and less than 4 min late:	0.3 point
Arrival more than 4 and less than 7 min late:	0.2 point
Arrival more than 7 and less than 10 min late:	0.1 point
Unexcused absence or arrival more than 10 min late:	0.0 point

Any lab session absence (excused or unexcused) must be made up and the lab meeting rescheduled with the TA. If it happens that you have an unstable Internet connection or a power outage and have difficulty to connect to the scheduled ZOOM meeting you need to send a text message to your TA before the lab session starts. During the lab sessions, you are expected to keep your video on. Your TA will understand if during a session you suddenly disappear from the view due to a poor Internet connection. If this happens, restart the connection ASAP and rejoin the meeting. If another unexpected event occurs, send a text message to your TA and as soon as the problem is resolved rejoin the lab session.

Lab session quizzes

During each lab session you will take a short quiz. All quizzes are open to books and notes, but you are not allowed to consult your answers with classmates or anyone else before the quiz completion. There are no make-ups for quizzes. At the end one quiz with the lowest score will be dropped. These quizzes will contribute to the final grade by 10 %.

Test

The final test is scheduled on July 1st 12-3pm and will be proctored via Zoom. You may not use books or search internet during exams, but you may prepare and use one 8½" × 11" page of handwritten notes. The test will be based on lab material, prelab information, assigned readings and videos.

There is no make-up for this test. Only under extraordinary circumstances over which the student has no control, e.g. incapacitating illness and/or hospitalization, the test could be rescheduled. The requests must be made before the test (if possible) or at least on the same day the test is scheduled. More detailed instructions will be posted on LATTE before the test.

Grade weights

Class Element	Grade Percentage
Lab reports	52%
Tests	30%
Quizzes	10%
Lab meeting attendance and participation	8%

Letter-grade equivalences

Percentage of Total	Grade range
97.0 - 100 %	A+
92.0 - 96.9 %	A
88.0 - 91.9 %	A-
84.0 - 87.9%	B+
80.0 – 83.9 %	B
76.0 – 79.9 %	B-
72.0 – 75.9 %	C+
66.0 – 71.9 %	C
60.0 – 65.9 %	C-
55.0 – 59.9 %	D+
50.0 – 54.9 %	D
45.0 - 49.9 %	D-
< 45 %	E

Course Materials

You will need to have BeyondLabz® software installed on your computer. Have a scientific calculator ready for your lab sessions meetings.

LATTE (Learning And Teaching Technology Environment) offers tools for course management and allows to post course material online. The access to this course LATTE website is limited only to students enrolled in this course and to TAs and to the instructor. To access LATTE go to <http://latte.brandeis.edu> and log in using your ID and password.

Other Information

Excuses and make-ups

To receive a credit for this course, a student is required to perform all experiments. Your absence will be excused only if you notify your TA well before the scheduled lab meeting starts. Your lab report on previous experiment and prelab for the missed experiment must be submitted before your “regular” lab session, otherwise a late penalty will be applied.

Students with disabilities

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 me and present your letter of accommodation as soon as you can. 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.

Academic Integrity

You may discuss an experiment with other students, but you must write your own lab report in your own words. Calculations, graphs, sketches, drawings etc. should be done as individual tasks. A report that is not clearly the student’s own work will lead to charges of academic dishonesty, which are referred to the University’s judicial system. You are expected to be familiar with and to follow the [University’s policies on academic integrity](#). Any suspected instances of alleged dishonesty will be reported to the Office of Student Development and Conduct and may result in sanctions including but not limited to failure in the course, failure on the assignment in question, suspension from the University and/or educational programs.

Preparation for laboratory experiments

Read carefully the entire procedure on the experiment you are going to perform. Also read any assigned readings and watch assigned videos. Complete the prelab assignment problems and upload the solutions to the prelab assignment on LATTE before the first part of each lab. Review prelab slides posted on LATTE.