

CH131 Laboratory Syllabus (Fall, 2020)

1. Course Staff

Professor Alex Golger (golger@bu.edu) is in charge of the general chemistry labs.

The lab sections are taught by graduate teaching fellows (TF):

2. Course schedule:

There will be one 165 min lab session each week on Monday (LA-LE), Thursday (L5 and L7) and Friday (L4). The detailed schedule of lab experiments is posted at the end of this syllabus.

Each TF will hold an additional 1 hour of office hours each week. These office hours are a great opportunity to finish any outstanding lab work, get conceptual questions answered, or discuss any concerns that might have.

In fall 2020, all lab sessions will be held remotely. They will include group discussions with TFs, working on virtual lab experiments and simulations, and working up data. These sessions will take place via Zoom – all of the links will be posted on the course Blackboard site at learn.bu.edu. **Your first Zoom lab section will be on Monday, September 14th, 2020.** You will also have one pre-lab zoom lecture each week on Tuesday at 12:30-1:20pm. Each pre-lab will be about your next week lab. **Your first pre-lab lecture is on Tuesday, 9/8.** The list of Zoom links for your lab sections, pre-lab lecture and lab office hrs will be posted on the CH131 blackboard.

3. Course materials – lab:

You will use the same lab related equipment you will need for the lecture/discussion portion of the course (computer with webcam and microphone, high-speed internet, notebooks and writing implements, and a non-graphing/non-programmable calculator)

Most of the labs that we will do will involve the Virtual Lab Simulations by Hayden McNeil publishing.

4. To access the lab course from Hayden-McNeil:

All of the virtual lab material is now up on your Blackboard sites under “Lab Content”.

The “Lab Content” folder has the following in it:

(1) Important instructions about how to sign-up for the simulations, and the structure of the Zoom lab sections

(2) A video on how to register for the Hayden McNeil Lab Simulations

(3) The link to the Lab Simulations at Hayden McNeil.

(4) The Zoom links for the lab sections

Note that Hayden-McNeil offers a 14-day grace period before students are required to make a purchase. This allows you to participate in the class & interact with the product during the add/drop period.

5. Structure and Expectations for the lab sessions

- Each lab will start promptly at the beginning of the lab section time.. Please arrive a few minutes early to make sure that you do not have connection problems.
- The session will begin with large group presentation and discussion with the TF. This 30-minute discussion will introduce the lab topic and usually involve a large group activity and discussion.

Next, students will break-up into Zoom breakout rooms in group of ~3

- Next, students will break-up into Zoom breakout rooms in group of ~3 students. Here, you will work on the lab simulation(s).
- After having completed working through the assigned activities, taking notes and observations, and discussing your findings in your group, you will work individually on preparing a post-lab assignment (usually some calculations, graph construction, and answering qualitative and quantitative questions).
- In total, all of the activities (and work) should take less than the 3-hour lab period. Therefore, at the end of each lab section students will submit their individual post-lab assignment for grading. In some cases, labs will be due at a later date (in case they are a little longer) – this will be communicated with students by the TF.

6. Lab grading

The laboratory grade will account for 15% of the overall CH131 course score.

Each lab session will have a maximum score of 30 points. These points are broken down as:

- 15% of lab points will be assign for the lab engagement and participation (attending promptly the lab sessions, actively participating in the large and small group discussion, and submitting assignment on time)
- 60% of lab points will be awarded for the post-lab assignments
- 25% of points for the end-of-lab “quiz”

One lab with the lowest score will be dropped at the end of the semester (either a missed lab or the lowest score).

7. Detailed lab schedule

CH 131, FALL SEMESTER, 2020: LABORATORY SCHEDULE

CH131 Zoom Pre-lab lectures: Tuesday, 12:30-1:20pm

Week #	DATES	LAB LECTURE	LAB EXPERIMENT
1	9/2 – 4	No pre-labs	No labs
2	9/7 – 11 M-no classes	Lab lecture #1: Introductory lab #1	No labs
3	9/14 – 18	Lab lecture #2: Exp. #2: Empirical formula for a hydrate	Exp. #1: Introductory lab #1
4	9/21 – 25	Lab lecture #3: Exp. #3: Charles's law	Exp. #2: Empirical formula for a hydrate
5	9/28 – 10/2	Lab lecture #4: Exp. #4: Molecular mass by freezing point depression lab	Exp. #3: Charles's law
6	10/5 – 9	Lab lecture #5: Exp. #5: Enthalpy of chemical reaction	Exp. #4: Colligative properties.
7	10/12 – 16 M-no classes	No lab lectures	No labs: Monday 10/12 is a holiday, Tuesday 10/13 has Monday schedule.
8	10/19 – 23	Lab lecture #6: Exp. #6: Chemical Enzymes	Exp. #5: Enthalpy of chemical reaction
9	10/26 – 30	Lab lecture #7: Exp. #7: Acid-base titration tutorial lab	Exp. #6: Chemical Enzymes
10	11/2 – 6	Lab lecture #8: Exp. #8: Titration of strong and weak acids	Lab #7: Acid-base titration tutorial lab
11	11/9 – 13	Lab lecture #9: Exp. #9: Qualitative analysis of group 1 cations	Exp. #8: Titration of strong and weak acids
12	11/16 – 20	Lab lecture #10: Exp. #10: Electrochemistry lab	Exp. #8: Qualitative analysis of group 1 cations
13	11/23 – 27 No classes	Fall Recess 11/25 – 29. No labs and lab lectures	
14	11/30 – 12/4	No lab lectures	Exp. #10: Electrochemistry lab
15	12/7-10 12/10, Thu Last day	No lab lectures, no labs	