

Chemistry 1B Syllabus - Fossum

Laney College

Spring 2021

Welcome to Chemistry 1B at Laney College!

I'm glad you've chosen to take this class! Chemistry 1B is the second semester of a year-long sequence in general chemistry. It is a challenging class with a heavy workload. Following is information you need to know about the class.

Course Name: General Chemistry

Course Number(s) / Code(s): Chemistry 1B / Class code 21311 (Lec)/21312 (Lab)

Class Meeting Days and Times: M, T, Th 6:00-8:50 PM – most days online via Zoom
Some labs: Tuesdays 6:00-8:50 PM Room A236

Prerequisite: Chemistry 1A (with a C or better)

Instructor: Cheli Fossum

Office Location & Phone: A236A, (510) 464-3272 (landline – cannot receive texts)

Office Hours (Zoom):

- Mondays 5:15 – 6:00 PM
- Tuesdays 12:15 – 1:00 PM
- Tuesdays 5:15 – 6:00 PM
- Wednesdays 12:30 – 1:30 PM
- Thursdays 12:15 – 1:00 PM
- Thursdays 5:15 – 6:00 PM

If you have any questions on the lecture or lab material, come to my office hours and I will help you!

Any changes to the above office hours will be announced in Canvas.

E-mail Address: mfossum@peralta.edu (Please include “Chem 1B” in the subject line of any email you send to me)

Class Website: <http://www.laney.edu/wp/cheli-fossum/chem-1b/>

Check the website for handouts you can print, announcements, old tests and quizzes, review material, etc.

Required Textbooks:

- Text: Chemistry, the Central Science, 14th Ed., by Brown, LeMay, Bursten, Murphy, Woodward, and Stoltzfus.
- You can use the 13th, 12th, 11th or 10th edition of the same book if you prefer.

- Lab manual: Chemistry 1B Lab Manual, Version A (Updated May 2003) (Laney IMC)
- Student Laboratory Research Notebook (Any lab notebook with duplicate pages)

Required Equipment and/or Supplies:

- A scientific calculator that can handle logarithms and scientific notation

Recommended Materials:

- Student Solutions Manual for the textbook
- Safety glasses or goggles

Structure of the class:

This is a hybrid class. Lectures will be live and online via Zoom during the scheduled time (M, T, Th 6:00-8:50 pm). Part of class time will be lecture, and part will be lab (the amount of time spent on each will vary).

Some labs will be dry labs, where you'll view videos, use the data to answer the questions, and then write lab reports. Some labs will be computer simulations of experiments. We will be doing some experiments in person.

The in-person experiments will only be on Tuesdays at reduced capacity. We can only have half the students in the lab at any one time, so we'll probably have half the students do the experiment one week and the other half on the following week. Make sure that you are available to come to the Laney College campus to do labs on any Tuesday evening from 6:00-8:50 pm.

Tests and quizzes will be given during our class times via Zoom with cameras on. Plan to be available to attend all scheduled class times via Zoom every week.

All of the class materials and any announcements will be posted in Canvas.

Attendance Policy:

According to Laney College policy, students are allowed a total of two weeks worth of absences. Therefore, since this class meets three times per week, you will be allowed a total of six absences. If you are absent from class seven or more times, you could be dropped from the class. You are expected to arrive to class on time.

Course Description:

Chemistry 1B is a continuation of chemistry 1A. The topics covered are: kinetics, equilibrium, acid-base equilibria, solubility equilibria, entropy and free energy, electrochemistry, the chemistry of transition metals and coordination compounds, nuclear chemistry, and organic chemistry.

Chemistry 1B Student Learning Outcomes

At the end of this course, students will be able to:

1. Solve quantitative chemistry problems and evaluate the results of calculations to make sure they are physically reasonable.
2. Clearly explain qualitative chemical concepts and trends at the molecular level.
3. Perform laboratory techniques correctly using appropriate safety procedures.
4. Produce laboratory reports that analyze experimental results and evaluate sources of error.
5. Maintain a laboratory notebook according to standard scientific guidelines.
6. Design, construct, and interpret graphs accurately.

Grading Policy & Method of Evaluation:

There will be eleven 20-point quizzes (one of which will be dropped), three exams worth 100 points each, and a final exam that is worth 200 points (**none** of the exams will be dropped). The laboratory assignments are usually worth 10 or 20 points (the lowest 20 points worth of lab will be dropped). Homework will also be collected and it will be worth 5 points per week (the lowest homework assignment will also be dropped). The *approximate* total number of points assigned to each of these categories is as follows:

Quizzes (10 × 20 points)	200 points
Exams (3 × 100 points)	300 points
Final Exam	200 points
Laboratory Reports	approx. 250 points
Homework	approx. 70 points
Lab notebook	40 points
Project (if assigned)	20-50 points

It is also possible to **lose points** if you don't follow the laboratory safety rules.

Grades will be assigned as follows. You can calculate your grade at any time by dividing the total number of points you have earned by the total number of points possible so far, and then multiplying by 100 to get a percentage.

89-100 %	A
79-88.9 %	B
67-78.9 %	C
55-66.9 %	D
under 55 %	F

Lecture Schedule: For a detailed schedule, see the “Lecture Schedule” in Canvas.

Topics: We will be covering the following chapters, in this order:

Chapter 14 – Chemical Kinetics

Chapter 15 – Chemical Equilibrium

Chapter 16 – Acid-Base Equilibria

Chapter 17 – Additional Aspects of Aqueous Equilibria

Chapter 19 – Chemical Thermodynamics

Chapter 20 - Electrochemistry

Chapter 21 – Nuclear Chemistry

(Chapter 22 – Chemistry of the Nonmetals)

Chapter 23 – Transition Metals and Coordination Chemistry

Chapter 24 – The Chemistry of Life: Organic and Biological Chemistry

(Chapter 18 – Chemistry of the Environment)

Chapters in parentheses above are optional. If covered, they will be covered briefly.

Other policies and information:

- If you did not take Chem 1A at Laney, this class might not be complementary to the class you took, since different schools cover the various topics in different orders.
- This class is a huge time commitment. Please treat it as such! It is common for a Chem 1A or Chem 1B class (at any school) to require 20 hours/week in homework and studying. For some people it will take more time, for some less. Keep this in mind when figuring out your schedule for this semester.
- There will ordinarily be no make-ups possible for exams and quizzes. If you miss an exam, it will ordinarily count as a zero. If an emergency comes up, you must notify me BEFORE the scheduled time of the exam. For an excused absence, you may be assigned a score calculated from your other exam scores. In some cases, a make-up exam is possible, provided it is taken before the exams are returned to the other students. In these cases, the score on the make-up exam cannot be used to raise your grade.
- No Extra Credit: There will be no extra credit assignments in this class, no make-up tests, and no retaking tests. (Why not? Because this is college!) It is therefore very important that you learn the material **before** being tested on it.

Exams: There will be three exams, worth 100 points each. The exam dates will be: Feb. 25, April 8, and May 6 (Thursdays). The final exam will be on Tuesday, May 25. No exam scores will be dropped. Exams will be live on Zoom, and everyone is required to keep your camera on during the exam.

Quizzes: There will be a quiz given **every Thursday** (unless there is an exam). Quizzes will be worth 20 points each. They may also include questions on the lab. No make-up quizzes will be given, but your lowest quiz score will be dropped. The quizzes will always cover the

previous week's material, so you will always have at least one week to absorb the material before you are quizzed or tested on it. Quizzes will be live on Zoom, and everyone is required to keep your camera on during the exam.

Laboratory:

Labs will be partly online and partly in-person this semester. Because it is impossible to know when we will be allowed on campus, I will be announcing each week's lab activities as we go (check the current week's module in Canvas). It is not possible to create a definite schedule of labs in advance with the uncertain COVID situation.

Virtual labs can include dry labs, Beyond Labz simulations, or Labster simulations. For a dry lab, you will prepare a prelab ahead of time in your lab notebook. You will watch videos of the experiment, get the lab data, and then do the calculations and write a lab report.

Some of the experiments will be done in-person (face to face) on selected Tuesday evenings. For the in-person labs, you will prepare a pre-lab writeup in your lab notebook before the experiment. You will come to room A236 at Laney and do the experiments. Afterward, you'll write a lab report in your lab notebook.

Lab reports will ordinarily be worth 10 - 20 points. No make-up labs will be given. Your lowest 20 points worth of lab will be dropped. Therefore, you may miss one 20-point lab or two 10-point labs without penalty. Any attempt to turn in a report for a lab that you did not do will be considered cheating. Guidelines for writing lab reports will be handed out and discussed.

It's very important to follow safety guidelines and keep a lab notebook correctly. If you always wear your safety goggles, never have food or drink containers in lab, never wear shorts or sandals in lab, and always write your data and observations directly into your lab notebook, you will earn 5 points of extra credit at the end of the semester. However, if you violate any of these rules, points will be deducted from your lab report score. (Minus two points for each violation each time.)

This semester, the in-person labs will be at half-capacity, so only half of the class will be present at one time. For in-person labs, we will have safety protocols in place. Everyone will need to wear face masks and we will not be working in groups. We may take your temperature before lab.

Homework:

Assignments will be collected about once a week, and will be worth 5 points each. Your lowest homework score will be dropped. Detailed solutions to the problems are in the solutions manual. However, in order to succeed in this class, you must be able to do these problems on a test, without the help of the solutions manual. In order to learn how to do the problems, you need to struggle with them for a while. Don't turn to the solutions manual too soon. Also, sometimes the solutions manual contains mistakes. Don't go against your better judgment and write down a wrong answer just because it's in the solutions manual.

** When you turn in your homework, write on the top of the first page the number of problems that were honestly attempted over the number of problems assigned, and circle it. Alternatively, you may write "all" or "all - 1" or something similar, indicating how many problems you did. (If you are dishonest here, no credit for the assignment.) Since all of the answers are available, homework will be graded mainly on completeness. Of course, you must show your work, and also make sure to write the answers in your own words. (It's obvious

when people copy the answers from the solutions manuals.) **You are responsible for checking your own answers to the homework problems.**

If you complete at least 80% of the assigned homework problems, you will get full credit on the assignment. Homework assignments will be due on Thursdays, but you can also turn them in the following Monday for full credit.

Late assignments: Points will be deducted from any work that is turned in late.

Late homework: if homework is turned in on the Monday following the due date, there is no point deduction. If it is turned in on the Tuesday after the due date or anytime later, it is only worth a maximum of 4 points instead of 5 points.

Late labs or other assignments:

Labs are due on Tuesdays. Deductions for late assignments will be as follows:

If turned in on the Thursday after the due date: - 10%

If turned in on the Monday after the due date: - 20%

If turned in one week late - 25%

If turned in two Thursdays after the due date: - 35%

If turned in two Mondays after the due date: - 45%

If turned in two weeks late - 50%

Assignments will not be accepted after they are more than 2 weeks late.

I wish to make this course as accessible as possible to students with disabilities that may affect any aspect of course assignments or participation. I encourage you to communicate with me by the second week of the course regarding any accommodations that will improve your experience in (or access to) this course. You can also contact the Disability Services and Programs for Students at 510-464-3428 for assistance. (If you have an accommodations letter from DSPS, please provide me with a copy sometime in the second week of classes.)

Helpful tips:

- Start working on things (lab reports, homework, studying for the tests) EARLY, to eliminate last-minute scrambling and stress. (Things usually take longer than you think.)
- Studies have shown that when people take notes by hand, they retain and understand more than those who take notes by typing into a computer.

Other policies:

- Please be considerate and **make sure that your cell phone is turned off** during lecture and lab. We will all need to concentrate in this class and ringing phones are incredibly distracting.
- Lecture time is meant for learning and engaging with the material. Please pay attention, take notes, ask questions, answer questions, and work on solving the example problems during lecture. **Please do not use lecture time for texting, going**

online, doing your homework, working on lab reports, or looking at/copying other students' work.

- Electronic devices are NOT allowed during tests and quizzes. Any attempt to use them during a test or quiz will be considered cheating. (Non-programmable calculators are permitted.)
- On tests and quizzes, always check to see if your answers make sense. If not, check your work. If you can't find the mistake, please comment on why you think your answer doesn't make sense. **Extra points will be taken off for answers that are obviously impossible and not noticed by you.**
- One of the objectives of this course is to give you practice in various lab techniques. If you miss lab often, you won't get this essential practice. Therefore, if you miss more than 4 labs, you cannot pass this course, no matter how many other points you have.
- It is fine to discuss your homework and lab work with each other and help each other. It is not OK to copy sentences or paragraphs from other students or to allow another student to copy from you. **Please do not allow other students to "look at" your lab reports, prelabs, or homework assignments. Usually this means that they want to copy your work!** Always put your explanations and lab reports in your own words. It is also not acceptable to collaborate on tests and quizzes, of course. Any instances of cheating, copying, or plagiarism on any assignments or tests will result in a zero on the assignment, test or quiz. If you are caught cheating a second time, you will be referred to the dean's office for disciplinary action. If I see you using your phone, looking at hidden notes, looking at someone else's paper, or talking during a test, I will assume you are cheating, so make sure you keep your eyes on your own paper. If you have a question or if you need something during a test or quiz, raise your hand, do not ask your neighbor. Cheating is very serious and will not be tolerated. It is unfair to everyone involved: the teacher, the cheater, and especially the honest students in the class.
- At the end of the semester, I will give you the grade you earn. If you "need" a B, you must do B work during the course. I will also not give you a lower grade than you earned. If you complete the class, I cannot give you an incomplete. It's fine to ask for clarification on grades, but do not argue with me about your grade.

Advice: KEEP UP WITH THE WORK! This stuff takes practice. In order to understand the material, you need to be actively involved in the learning process. This means trying to do problems on your own, doing the examples in the book, being focused in lecture and lab, and asking for help when you need it.

A final note: Many of these policies might seem a little harsh. The purpose of the policies is to guard against students being dishonest, manipulative, or unreasonable, which does happen sometimes. Basically, I want you to approach this class honestly and to take responsibility for yourself.