

CHEM 1B – General Chemistry II (April 6-June 26)

INTRODUCTION:

- Instructor: Burcak Artun, PhD (artunburcak@fhda.edu)
- Course Website: Canvas
- Times
 - Lecture: T/Th 11:30am-12:45pm
 - Lab: T/Thu 8:30am-11:20am
- Office Hours: T/Th 1:00-2:00pm or by appointment in person

STUDENT RESOURCES

Important Dates

- **APRIL 6** First day of spring quarter classes
- **APRIL 19** Last day to [add classes](#)
- **APRIL 19** Last day to [drop classes](#) without a W
- **MAY 23-25** Memorial Day Weekend - no classes, offices closed
- **MAY 29** Last day to [drop classes](#) with a W
- **JUNE 19** Juneteenth Holiday - no classes, offices closed
- **JUNE 22-26** [Final exams](#)

De Anza student resource pages:

<https://www.deanza.edu/quarter-guide/>

Canvas Help:

<https://www.deanza.edu/online-ed/help.html>

COURSE OVERVIEW AND LEARNING OBJECTIVES:

- **Overview:** Chemistry 1B is the second quarter of a three part introduction to the principles of general chemistry, and a direct continuation of Chemistry 1A. Chemistry 1B consists of the study of intermolecular forces and their effects on the physical and chemical properties of matter, investigation of reversible reactions in terms of kinetics, thermodynamics, and equilibrium, the study of gas laws and kinetic molecular theory and their applications.
- **Prerequisites:** Chemistry 1A with a grade C or better.
- **Advisory:** EWRT 211 and READ 211 (or LART 211), or ESL 272 and 273.
- **Units:** 5 Units
- **Hours:** Three hours lecture, six hours laboratory (108 hours total per quarter)

- **Course Objectives:**

1. Evaluate how intermolecular forces influence solids, liquids and phase changes
2. Calculate the rate of a reaction and assess the mechanism of action
3. Utilize the fundamental principles of equilibrium to probe reaction dynamics.
4. Differentiate between acids and bases and evaluate their reactivity.
5. Employ the principles of equilibrium in an expanded discussion of thermodynamics.
6. Analyze the behavior of gases

REQUIRED MATERIALS:

- **Textbook: Chemistry: A Molecular Approach, Tro (6th Edition)** This is an electronic version and includes the Mastering Chemistry platform which we will use for quizzes and extra credit.
- [De Anza Bookstore Course Materials link](#)
- **Calculator:** A simple scientific calculator with natural log functionality is necessary and sufficient for this class. You can use previously purchased ones, but graphing functionality will not be necessary to use.
- **A Laboratory Notebook:** A lab notebook is required for this course such as the one shown here: https://www.amazon.com/National-Computation-Notebook-Inches-43648/dp/B00007LV4B/ref=sr_1_14?th=1
- **Safety Goggles:** Safety Goggles must be worn at all times while in lab. We do provide goggles in lab where you may borrow for the duration of lab class. However, if you wish to purchase your own, they must meet ANSI Z87+ and CSA Z94.3 safety standards and may be purchased from the De Anza bookstore or from amazon such as the ones shown here: https://www.amazon.com/Uvex-Stealth-Uvextreme-Anti-Fog-S39610C/dp/B000BQUTQS/ref=sr_1_5?th=1
- **Lab Coat:** Optional
- Any App that will allow you to convert photos to **pdf files**. Genius Scan, CamScan, and Notes (Apple) are free, easy options.
- **Supplemental Texts:** Any necessary and additional handouts/reading material/lab procedures can be downloaded from the canvas course website. **OpenStax Chemistry**, 2nd edition. Available **free** online at <https://openstax.org/details/books/chemistry-2e>

COURSE WORK AND GRADING

- This class is divided into two separate instructional periods: a lecture period devoted to the primary course material and a lab period for conducting lab experiments. Registration in the course automatically enrolls you in both periods. **At De Anza College the lab and lecture cannot be taken as separate courses.**

- **Work Expectation:**

Each week there are 2x 75 min lectures, and 2x3 hour lab sections. Expect to spend an additional 8-12 hours a week on the course.

You will spend additional time preparing for the labs (PreLab), Solving HW problems, answering quiz questions, and writing up the results from the labs (Lab WriteUp or PostLab Activity), as well as preparing for Quizzes and Midterms. You are expected to join class having done some related reading and chapter assignments.

- **Grading is based on the following breakdown:**

Lecture 70% of Total Grade

- **Midterms** 40 % of Lecture
- **Lecture Quizzes** 20 % of Lecture
- **Homework** 12.5 % of Lecture
- **Final** 25 % of Lecture
- **Attendance** 2.5 % of lecture

Lab 30% of Total Grade

- **PreLabs and Data** 22.5 % of Lab
- **Lab Reports or Post Lab Homework** 50 % of Lab
- **Lab Quiz** 25 % of Lab
- **Lab Conduct (participation, attendance)** 2.5 % of Lab

- **The Following Grade Scale will be used**

A ⁺ 97.0 – 100.0 %	B ⁻ 77.0– 80.9 %	D ⁻ 60.0 – 62.9 %
A 93.0 – 96.9 %	C ⁺ 73.0 – 76.9 %	F 0 – 59.9 %
A ⁻ 89.0– 92.9 %	C 70.0 – 72.9 %	
B ⁺ 85.0 – 88.9 %	D ⁺ 66.0 – 69.9 %	
B 81.0– 84.9 %	D 63.0 – 65.9 %	

Notes on Grading

- There will not be a curve in general unless deemed necessary by me
- Final Exam is cumulative
- A grade of "C" (% 70.0) or better is required to pass the course
- You will need to pass **both lab and lecture** to be able to pass the course

Note on Safety:

- Proper use and disposal of hazardous reagents, and equipment mandatory. Instructions on how to safely handle materials used in this class will be provided with each lab.

- You are expected to follow all directions as indicated in the lab exercises and discussed in class.

LECTURE**Midterms - 40% of Lecture Grade**

There will be two Midterms. The schedule will be provided. The assessments will consist of the material covered in lecture and will also assess your problem-solving skills. Midterms are a mix of multiple choice and free response. ***I will provide Study Guides. I will be testing for concepts.***

Quizzes – 20% of Lecture Grade

There will be an online quiz at the end of each chapter.

Final Exam - 25% of Lecture Grade

The final exam is cumulative and it is a mix of multiple choice and free response questions. No make-up exam will be given if you miss the final unless you have a valid excuse and talk to me. The final exam will take place in the last week of class as scheduled.

Assignments – 12.5 % of Lecture Grade

Problem solving: You will be assigned problems from the textbook to follow up and to reinforce your knowledge of the topics. These problems will help increase your grasp of the material. Please make sure to work on and understand the sample problems available to you in your textbook before you attempt the assignment problems. Chapter assessments may include similar problems.

There will be a problem set homework assignment for each chapter covered. These will be assigned on Mastering Chemistry Online. *Assignment grade will be based on assigned end-of-chapter problems.*

Coverage: In Chem 1B the following Chapters will be covered: Chapters 6, 12, 15, 16, 17, 19

Reading: Please read the assigned textbook chapters carefully **before** coming to lecture.

Do not hesitate to drop in to the office hours if for any reason you think you are falling behind, need reinforcement of material or simply to say hi. Office hours are a crucial part of the support system the students have.

Remember “practice makes perfect” and “mistakes are the stepping stones to learning”. It is essential that you attempt as many problems as possible

LAB

Lab manual can be found on the De Anza Chemistry page, and will be posted on Canvas. Schedule will be provided separately.

- **Lab Reports, Pre and Post Lab Exercises – 72.5% of Lab Grade**

Please read very carefully. We will go over the lab expectations within the first lecture.

PreLab

Before you start any lab related activity, you will create a “Prelab” and submit electronically. List of prelabs are scheduled in the Lab Schedule.

Include the following in your PreLab:

1. **Name and date** on each page.
2. **Title** write the title of the exercise at the top.
3. **Page number** as in A1-1, A1-2 (for exercise A1 page 1, etc)
4. **Purpose/Abstract** in your own words, state the goals for doing this experiment in abstract form.
5. **Materials and Hazard Information** a list of materials, chemicals and their hazard info should be listed here
6. **Summary and flow chart of procedures or instructions and/or questions to be answered.**
7. **Data Tables:** These can be copied from your lab manual or a cut out of the print out can be glued on to your lab notebook. There should also be a space for observations for each experiment.

Lab Notebook:

You are required to keep a Lab Notebook as described above. You will be required to submit data pages of your lab notebook on Canvas for regular checks.

What goes in a lab notebook:

First couple of Pages should be left blank for a **Table of Contents** - which basically lists the experiments we are doing with the corresponding page numbers for the start of the Experiment.

PreLab for each experiment should also be written in your lab notebook. You need to submit a pdf file including your prelab online BEFORE you start doing the experiment.

ALL DATA RECORDINGS GO IN YOUR BOUND LAB NOTEBOOK Use ink to record your Data. Mistakes can be crossed out with a simple line through. Use of white-out during Data Collection is prohibited.

What goes in a Lab Report or Post Lab:

Experiments will end with a "Lab Report" or Post Lab Questions which are to be submitted to me online after the experiment is concluded on the due date indicated on your schedule.

If a lab report is required, the Lab Report should be typed on a separate word (or similar) document and will state the purpose of doing the experiment/simulation in your own words, abstract for the experiment (brief description), data, calculations, results, discussion, and a conclusion.

Lab Report will be submitted electronically as a pdf

A list of Exercises, Prelabs and Assignments will be detailed in Canvas.

For some lab experiments, you may be asked to include an assignment as a PostLab assignment. Assignments will also be posted on Canvas

- **Lab Exam - 25% of Lab Grade**

There will be a lab exam administered throughout the quarter at the end of the quarter. It will cover the concepts/calculations and core techniques. Date is posted on the schedule.

- **Participation – 2.5% of Lab Grade**

You will receive points based on your performance in the lab class that will take into account the following:

- whether you are prepared for the lab;
- whether you demonstrate that you have a strong understanding of the lab exercises;

LABORATORY SAFETY and PROTOCOLS

- **Laboratory Safety**

All chemistry laboratories inherently come with associated risks and hazards. There will be mishaps. When an accident occurs, inform your instructor immediately and do not attempt to clean-up any broken glassware or spilled chemicals by yourself. In order to

ensure that the lab is as safe as possible, we must (1) Recognize hazards, (2) Assess the risks of hazards, (3) Minimize the risks of hazards, and (4) Prepare for emergencies.

From the American Chemical Society Safety In Academic Laboratories Guidelines, 7th Ed., the following mandatory minimum safety requirements must be followed by all students and be rigorously enforced by all chemistry faculty:

1. Chemistry Department-approved safety goggles purchased from the De Anza College bookstore (NOT safety glasses) must be worn at all times once laboratory work begins, including when obtaining equipment from the stockroom or removing equipment from student drawers, and may not be removed until all laboratory work has ended and all glassware has been returned to student drawers.
2. Shoes that completely enclose the foot are to be worn at all times; NO sandals, open-toed, or open-topped shoes, or slippers, even with socks on, are to be worn in the lab.
3. Shorts, cut-offs, skirts or pants exposing skin above the ankle, and sleeveless tops may not be worn in the lab: ankle-length clothing must be worn at all times.
4. Hair reaching the top of the shoulders must be tied back securely.
5. Loose clothing must be constrained.
6. Wearing "...jewelry such as rings, bracelets, and wristwatches in the laboratory..." should be discouraged to prevent "...chemical seepage in between the jewelry and skin...".
7. Eating, drinking, or applying cosmetics in the laboratory is forbidden at ALL times, including during lab lecture.
8. Use of electronic devices requiring headphones in the laboratory is prohibited at ALL times, including during lab lecture.
9. Students are advised to inform their instructor about any pre-existing medical conditions, such as pregnancy, epilepsy, or diabetes, that they have that might affect their performance.
10. Students are required to know the locations of the eyewash stations, emergency shower, and all exits.
11. Students may not be in the lab without an instructor being present.
12. Students not enrolled in the laboratory class may not be in the lab at any time after the first lab period of each quarter.
13. Except for soapy or clear rinse water from washing glassware, NO CHEMICALS MAY BE Poured INTO THE SINKS; all remaining chemicals from an experiment must be poured into the waste bottle provided.
14. Students are required to follow the De Anza College Code of Conduct at all times while in lab: "horseplay", yelling, offensive language, or any behavior that could startle or frighten another student is not allowed during lab.

15. Strongly recommended: Wear Nitrile gloves while performing lab work; wear a chemically resistant lab coat or lab apron; wear shoes made of leather or polymeric leather substitute.

Reckless behavior will not be tolerated. If your actions endanger the health and safety of yourself or someone else you will be asked to leave and you will receive a zero for the day. In extreme cases, you may lose your lab privileges for the remainder of the quarter.

POLICIES

- **Registration:** Enrollment is strictly limited to 30 students per section. Spaces are filled in accordance with the official class roster from Admissions and Records, followed by the official wait list. Any errors must be addressed directly with Admission and Records. Waitlisted students **must come to lecture** for the first day of class, but may not be assigned a code until someone drops the course within the first two weeks
- **Policy on attendance:** Lecture and Lab are both in person and on campus. Attendance of **both** the Lecture and scheduled Labs are required for the successful completion of this course. Unexcused absences will affect your grade. **Attendance is expected for all lectures, all lab lectures and all labs. The De Anza College Chemistry Department does not offer make-up labs**
- **Policy on missing class:** If you need to miss class you must notify the instructor **at least 24 hours in advance** for approval. Missing a lab period may affect your grade negatively. If you have an excused absence, we can talk about ways to compensate for the missed lab.

You will be dropped from the course for any unexcused absences during the first two weeks of class.

Absences from lecture or lab will be evaluated on a case by case basis. It is your responsibility to contact the Instructor for any absences. Clear Communication is the best whatever the reason is. If I don't know your reasons, I can't be reasonable...

- **Policy on late assignments/lab notebooks/lab report:** Items turned in late will receive an automatic 5% deduction per day in points. If the assignment is late over a week, the most you can get out of that assignment is 65%

ALL assignments, lab write-ups, reports, and exams must be completed and turned in to receive credit for this course. No exceptions. It is the responsibility of the student to arrange for make-ups for missed work. Lab absences may not be made up.

- **Policy on Final exams:** Final exam dates are determined by the De Anza College and cannot be changed. Please find the exam dates from your course calendar, and put all of the dates into your calendar.
- **Dropping the course:** Dropping the course must be done through the Admissions and Records office. ***It's the student's responsibility to withdraw from the course by the deadline set by the Admissions and Records Office.*** Dropping the course after the deadline will result in a (W-withdrawal) on your transcript.

Policy on plagiarism There's a zero-tolerance policy for cheating and academic misconduct. You should remember as a De Anza College student, you agreed to abide by the policies of the De Anza College Rules of Conduct. It is expected that you are familiar with the code of conduct and disciplinary actions that may result from academic misconduct. ***All submitted work should be your own, and should represent your own grasp of the material. Cheating will not be tolerated.***

If you have any questions about what constitutes unfair collaboration or cheating, please contact the instructor.

These policies are found in the De Anza College manual:

<https://www.deanza.edu/policies/academic-integrity.html>

Students who violate academic integrity policy (e.g. are caught cheating or plagiarizing) will be reported to the Dean of Student Services. Any plagiarized material will receive a 0.

STUDENT LEARNING OUTCOMES

- Evaluate the principles of molecular kinetics.
- Apply principles of chemical equilibrium to chemical reactions.
- Apply the second and third laws of thermodynamics to chemical reactions.

Student Learning Outcome(s):

- Evaluate the principles of molecular kinetics.
- Apply principles of chemical equilibrium to chemical reactions.
- Apply the second and third laws of thermodynamics to chemical reactions.

Office Hours:

T,TH	1:00 PM - 2:00 PM	Zoom
M,W	12:00 PM - 1:00 PM	Zoom