

**CHEM 1B: General Chemistry****Syllabus**

Instructor: Nadia Biglari, MS  
 Email: [biglarinadia@fhda.edu](mailto:biglarinadia@fhda.edu)  
 Office Hours: T/Th 5<sup>25</sup>-5<sup>55</sup>pm in person  
 Office: SC1222,

Lecture:	Rm S32	TTh	6:00-7:30pm	Section
Lab:	Rm SC2204	TTh	2:30-5:20pm	44843
		TTh	7:30-10:20pm	44845

& Friday 1<sup>00</sup>-3<sup>00</sup>pm zoom Nadia Biglari is inviting you to a scheduled Zoom meeting.

Topic: Nadia Biglari's Personal Meeting Room

Join Zoom Meeting

<https://fhda-edu.zoom.us/j/2425755843>

Meeting ID: 242 575 5843

Pre-requisites:

CHEM 1A with a grade of C or better. EWRT 1A or ESL 5 recommended.

Course Description

CHEM 1B is the second of a three-quarter general chemistry series. This class investigates intermolecular forces and their effects on properties, gas laws and kinetic molecular theory, and reversible reactions from the standpoints of kinetics, thermodynamics, and equilibrium.

Required Materials:

- Lecture Text: Silberberg, Amateis; *Chemistry: The Molecular Nature of Matter of Change*; 8<sup>th</sup> Ed. (earlier editions should be fine for content, but the problem numbers might not line up)
- Lab Text: online PDFs @ <https://www.deanza.edu/chemistry/Chem1B.html>
- Lab Notebook: any carbon copy notebook is fine, but you must have a specific section for lab work!
- Calculator: scientific with log functions, not your cell phone
- Safety goggles: to be worn each lab period
- Disposable gloves: neoprene or nitrile, NO LATEX (recommended)

Grades:

Your grade will be based on several parts and divided as shown to the right:

- Quizzes – quizzes will be worth 100 points (10% of your grade). Four short quizzes will be given occasionally during lecture and are meant to act as a knowledge check. They will be based in part on HOMEWORK and on lecture notes. You will be given 20 minutes to complete.
- Lab Grade – your lab portion will be worth 300 points in total (30% of your grade). This will include all work for any labs conducted from the lab manual online. Your grade will be based on pre-labs, in-lab notes, and lab reports and possible lab exam. The Pre-Labs will be collected at the start of each lab by turning in carbon copies of your notebook. The Lab Reports will include carbon copies of the in-lab work as well as any post lab questions. Further details can be found on Canvas under the Lab Assignment Expectations. Please make sure

Quizzes	100
Labs	300
Exams	300
Final	200
Homework	100

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to ask for any questions regarding due dates. As for the assignments themselves, please make sure to fully read through the labs posted online @ <https://www.deanza.edu/chemistry/Chem1B.html>. Lab Manual which has been created to help you through the lab portion of this course. Especially with regards to how to complete each assignment and my personal expectations. We will review this on the first day of lab as well. (Lab Assignments will be deducted 20% per day they are turned in late. If you contact me prior to the due date, the penalty might be waived, depending on the circumstances. You must submit all assignments to receive a passing grade in the course.) Lab exam will be open note and will cover techniques and sample calculations from the lab manual.

1. the purpose of the experiment. In this section, you need to clearly state the reason we are doing the experiment, what are we understanding from it?
2. Procedure, you need to write an step by step procedure for the experiment in your own words in a way that if I did not have access to the lab manual, I would be able to perform the experiment using your prelab.
3. Material; what are we going to need to perform the experiment in terms of chemicals.
4. Safety; state how we can be safe around the chemicals listed in the previous section, what are the types of harm that can be caused by them? you can get that info from this website: <https://chemicalsafety.com/sds-search/>

In this section discuss waste disposal and lab attire as a reminder to yourself as to how you should behave in the lab.

Lab reports will be due one week after the experiment, with the exception of the structure lab which is due the same day.

- Homework; approximately 70-100 weekly homework problems per chapter will be assigned on Aktivchem.

Your comprehension of course material will be measured using the following grading scale

A+  $\geq 98\%$  A  $\geq 94\%$  A-  $\geq 90\%$

B+  $\geq 86\%$  B  $\geq 82\%$  B-  $\geq 78\%$

C+  $\geq 74\%$  C  $\geq 70\%$  C-  $\geq 66\%$

D+  $\geq 62\%$  D  $\geq 58\%$  D-  $\geq 55\%$

F  $< 55\%$

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- Exams – your exams will be worth 300 points in total (30%). There will be 2 exams, each worth 200 points and focused on specific sections of the course. However, chemistry always tends to build on previous knowledge, thus keeping up with old material will help you throughout the course. There will also be extra problem-solving sessions during and possibly outside of class that will help students prepare for the exams. To study for the exams, I would recommend completing all homework assignments, reviewing lecture notes in a study group, and then attempting the practice exams on Canvas. The exams
- Final Exam – the final exam will be cumulative so take time to review mistakes on old exams and go back to finish late homework and/or worksheets.

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Attendance:

Lectures are not mandatory; however, lectures are your best source of knowledge and information for this course.

Labs are mandatory. You should plan to arrive early to lab (5-10 minutes at least). If you arrive later than 10 minutes to lab, you will not be allowed in (unless you have communicated to me beforehand). Missing 1 lab throughout the term will automatically drop your grade by 1 letter grade. Missing 2 or more lab sessions during the term will require us to meet and discuss your ability to pass the course.

Exams are mandatory. The dates should not change, but as things come up, I reserve the right to change exam dates with plenty of notice to students. Should you have a conflict, please speak to me as soon as you know of this conflict. Extenuating circumstances may allow us to schedule a make-up, but do not plan on this.

If something comes up, remember to always email me as soon as you know you will miss something that is mandatory. By timestamping an email, you ensure that you've covered yourself by communicating early. For labs, this means we may possibly setup a make-up, for exams this means we can discuss what can happen, circumstances permitting.

Student athletes should plan to speak with me within the first week if they are missing an exam or lab.

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Class Conduct

- Arrive to lab and lectures on time or early.
- **Do not disrupt class by talking or texting others.**
- During lab, NO ELECTRONIC DEVICES ARE ALLOWED except a calculator. You may ask to take pictures of experiments, but if your phone or laptop is out, you will lose points from your Lab Conduct grade.

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- No use of headphones in lab ever. It is a safety hazard. Nor during lecture, it's extremely disrespectful.
- No eating or drinking in lab. Again, another safety hazard.
- Always wear lab goggles during wet chemistry labs. Wear them until the instructor says otherwise.

Students with Disabilities

Students who are seeking support from the Disability Support Programs and Services (DSPS) should contact them directly at their office in LCW 110 or at (408) 864-8839 or via [www.deanza.edu/dsps](http://www.deanza.edu/dsps). De Anza College has the policy to accommodate all individuals regardless of disabilities, as such any students are welcome to come and speak with me privately regarding any accommodations necessary. They should email me directly and we can meet, please plan to bring your Accommodation Memo from the DSPS. Anything discussed will be kept in strict confidence and will not influence or affect your grade.

Academic Integrity

Academic integrity is a very serious thing. Cheating, copying, plagiarizing, or any form of using other person's work as your own is a serious offense. For more details about De Anza college's Academic Integrity policy go to <http://www.deanza.edu/studenthandbook/academic-integrity.html> to view. Any instance of academic dishonesty will not be tolerated and said students will not receive a passing grade in the course.

How to Approach This Course:

This course will move fast covering a variety of topics. In general chemistry is best studied through repetition of practice problems and group discussion of theories. I recommend forming a study group as soon as you can and meeting regularly. A good idea for a study group is to come together with a plan of action for each session. For example, come to the group planning to review a practice exam or working on hard challenge problems that some people did not understand.

In order to do well in chemistry, I advise a variety of methods to study:

- Read ahead in the textbook
- Complete homework problems (first with help if need be, second without help)
- Complete lab assignments
- Flashcards and study group work to teach each other (the best way to see if you know something, is if you can teach it to someone else)
- Attend lecture actively

Important Academic Calendar Dates:

April 8 <sup>th</sup>	First Day of Classes
April 19 <sup>th</sup>	Last Day to Add Classes
April 20 <sup>th</sup>	Last Day to Drop Classes with No Record Of "W" & Full Refund/Credit
May 31 <sup>st</sup>	Last Day to Drop with A "W"
June 25 <sup>th</sup>	Final Exam

Suggested Homework Problems: These are not collected nor graded. Graded homework is on AktivChem.

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Ch 5 – Gases and the Kinetic-Molecular Theory

3, 6, 8, 20, 22, 24, 28, 32, 34, 36, 41, 45, 53, 71, 75, 77, 84

Ch 12 – Intermolecular Forces: Liquids, Solids, and Phase Changes

1-5, 13-19, 25, 28, 32-39, 41, 45, 47, 49, 55, 59, 63, 70, 71, 83

Ch 16 – Kinetics: Rates and Mechanisms of Chemical Reactions

1-5, 8, 10, 18, 21, 25, 26, 28, 34, 39, 48-51, 59, 69-71, 79, 85

Ch 17 – Equilibrium: The Extent of Chemical Reactions

3-5, 7-9, 11, 12, 14, 18, 20, 26-28, 30, 32, 34, 36, 39, 42, 46, 48, 50, 52, 58, 59, 64, 66, 70, 72

Ch 18 – Acid-Base Equilibria

1-9, 11, 13, 15, 17 19-23, 25, 27, 29, 31, 37, 38, 41, 43, 45, 47, 49, 59, 60, 84, 87, 117-120, 122, 126, 128, 134, 138, 140

Ch 20 – Thermodynamics: Entropy, Free Energy, and the Direction of Chemical

Reactions 1-6, 10, 12, 14, 18, 22, 24, 31, 33, 45, 46, 49, 51, 61, 63-67, 71, 86

**CHEM 1B Schedule (subject to change)**

Week #	Tuesday			Thursday				
	Date	Lecture	Lab	Date	Lecture	Lab		
1	4/9/24	Ch 5	Introduction & Check-In	4/11/24	Ch 5	Lab B1 - Molar Volume		
2	4/16/24	Ch 12	Structure Review	4/18/24	Ch 12	Lab B2 - Vapor Pressure		
3	4/23/24	Ch 12	Lab B2 - Vapor Pressure	4/25/24	Ch 12	Lab B7 - Synthesis of a Green Crystal		
4	4/30/24	Exam 1 - Ch 5 & 12	Lab B7 - Synthesis of a Green Crystal	5/2/24	Ch 16	Lab B7 - Synthesis of a Green Crystal		
5	5/7/24	Ch 16	Lab B7 - Synthesis of a Green Crystal	5/9/24	Ch 16	Lab B7 - Synthesis of a Green Crystal		
6	5/14/24	Ch 16	Lab B3 - Iodine Clock Reaction (Kinetics)	5/16/24	Ch 16	Lab B3 - Iodine Clock Reaction (Kinetics)		

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7	5/21/24	Quiz 2 Ch 16 <b>Ch 17</b>	<b>Lab B3 - Iodine Clock Reaction (Kinetics)</b>	5/23/24	<b>Ch 17</b>	<b>Lab B3 - Iodine Clock Reaction (Kinetics)</b>		
8	5/28/24	<b>Ch 17 - 18</b>	<b>Lab B4 – (Kc by spectro) Spectroscopic determination of Keq</b>	5/30/24	<b>Ch 18</b>	<b>Lab B4 – (Kc by spectro) Spectroscopic determination of Keq</b>		
9	6/4/24	<b>Exam 2 - Ch 16 &amp; 17  Ch 18</b>	<b>Lab B5 - Ka of a Weak Acid</b>	6/6/24	<b>Ch 18</b>	<b>Lab B5 - Ka of a Weak Acid</b>		
10	6/11/24	Quiz 3 Ch 18 <b>Ch 20</b>	<b>Lab B8 - Effect of T on Keq (CaOH)</b>	6/13/24	<b>Ch 20</b>	<b>Lab B8 - Effect of T on Keq (CaOH)</b>		
11	6/18/24	<b>Ch 20</b>	<b>Lab B8 - Effect of T on Keq (CaOH)</b>	6/20/24	Quiz 4 Ch 20 <b>Ch 20</b> <b>Review</b>	<b>Check Out  Lab Exam (TBA)</b>		
<b>Finals Week</b>	6/27/24	<b>Tuesday from 6:15 PM to 8:15 PM</b>		6/29/24				

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**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.

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- 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	05:25 PM	05:55 PM	In-Person	SC 1222
F	01:00 PM	03:00 PM	Zoom	<a href="https://fhda-edu.zoom.us/j/2425755843">https://fhda-edu.zoom.us/j/2425755843</a>