

**General Information & Course Structure**

<b>Instructor:</b>	Dr. Nate Cardin	nbcardin@stanford.edu		
<b>Teaching Assistants:</b>	Zhenpeng Zhou	zhenpeng@stanford.edu	Miles Kool	mkool@stanford.edu
	Tommy Li	thomasli@stanford.edu		
<b>Course Website:</b>	After registering for Chem 31B via Axess (axess.stanford.edu), you should have access to the Chem 31B Coursework site (coursework.stanford.edu). This site will be our primary means of communication and source of course materials, where you will be able to download any handouts, answer keys, and section materials.			
<b>Required Materials:</b>	· Tro, <i>Principles of Chemistry: A Molecular Approach</i> , Custom Ed. for Stanford Univ. · Mastering Chemistry Code for online homework (included with new Tro textbooks)			
<b>Required iClicker:</b>	You must have an iClicker unit (available at the Stanford bookstore) to answer questions posed during lecture. <b>Please register your iClicker on Coursework for Chem 31B ASAP!</b> (If you were enrolled in this summer's Chem 31A, we will be using the same iClicker.)			
<b>Lectures:</b>	MTWTh 10 AM – 12 PM in Braun Lecture Hall			
<b>Sections:</b>	Sections will take place after lunch on most class days, from 1:15 PM – 3 PM. See the course calendar for a complete list of section dates. <b>Section attendance is mandatory.</b> Sections will either be pencil/paper sections (discussing concepts and working on practice problems) or laboratory sections (conducting experiments in small groups to explore phenomena and concepts). All sections will meet in Mudd 257, 265, or 267.			
<b>Lab Safety:</b>	<b>Lab safety is incredibly important!</b> Since all sections meet in the Mudd laboratories, you <u>must</u> wear shoes that cover your full feet (no sandals, ballet flats, etc.), long pants, and a long sleeve shirt/sweater <u>every day to section</u> . <b>At our first section, you will also receive a lab coat and safety goggles, which must be worn at all times in the labs.</b> Students not complying with all lab rules will not be allowed to participate in section!  <b>Before coming to our first section, you must complete Stanford's mandatory online Undergraduate Safety Training Course.</b> Directions for finding this course can be found in the "Day 1 Checklist" document in the Materials section of our Coursework page. If you already completed this training for Chem 31B, you do not need to recomplete it.			
<b>Office Hours:</b>	MTWTh 3 PM – 4:30 PM in OC 106 (in the Organic Chemistry Library building) Office hours are available for students who need further clarification of concepts or who have made solid attempts on the homework or practice problems and require further assistance working through them. Students are encouraged to rework misunderstood problems from returned exams with a TA or instructor during office hours.			

## Grading System & Point Breakdown

**Online Homework:** Using Mastering Chemistry (pearsonmylabandmastering.com), you will be required to complete a problem set nearly every day as homework. Problem sets are due by 9 AM PST the day after they are assigned. **Please register on Mastering Chemistry ASAP!**

Each homework problem set is worth a maximum of 15 points. Eleven problem sets will be assigned throughout Chem 31B and the problem set with the lowest score will be dropped. The scores on the remaining ten problem sets will be summed to give your total homework score. A maximum of **150 POINTS** is possible for all homework.

**iClicker Questions:** In Chem 31B, iClicker questions will be graded based on participation. For each iClicker question, you will earn one point for simply answering the question. At the end of the course, the total number of iClicker points you earn will be divided by the total iClicker points possible and scaled to a maximum of **40 POINTS**.

**Quizzes:** Most sections will begin with a brief quiz. Each quiz is worth a maximum of 10 points. Seven quizzes will be assigned throughout Chem 31B and the quiz with the lowest score will be dropped. The scores on the remaining six quizzes will be summed up to give your total quiz score. A maximum of **60 POINTS** is possible for all quizzes. Quizzes cover recent topics, but never topics introduced in a lecture given on the same day as a quiz.

**Exams:** There will be two in-class midterms plus a final exam. Exams are cumulative, but will focus mostly on recently covered topics. The exam schedule for Chem 31B is as follows:

<b>Midterm 1:</b>	Tuesday, July 28 <sup>th</sup>	10 AM – 12 PM
<b>Midterm 2:</b>	Wednesday, August 5 <sup>th</sup>	10 AM – 12 PM
<b>Final Exam:</b>	Thursday, August 13 <sup>th</sup>	10 AM – 1 PM

*You must take all exams at the scheduled dates and times. Do not commit to courses or other activities that would make it impossible to do this.*

**Final Course Grade:** Your final course grade for Chem 31B will be determined by whichever of the following two methods results in a higher overall score:

	<u>Method 1</u>	<u>Method 2</u>
Daily Work (Mastering Chemistry, iClickers, Quizzes)	25%	25%
Midterm 1 & Midterm 2	35%	20%
Final Exam	40%	55%

Your final letter grade for Chem 31B will be based on the following scale:

A+ ≥ 95%	B+ ≥ 80%	C+ ≥ 65%	D+ ≥ 50%	NP < 40%
A ≥ 90%	B ≥ 75%	C ≥ 60%	D ≥ 45%	
A- ≥ 85%	B- ≥ 70%	C- ≥ 55%	D- ≥ 40%	

## Course Policies

**Attendance:** You cannot enroll in classes or other activities that conflict with any of the exams, the lectures, or your assigned sections. Requests for alternate arrangements for specific assignments must be for approved University reasons and must be requested from your TA as soon as possible, but at least one week in advance.

If you must miss class due to serious illness, family crisis, or other exceptional extenuating circumstances, contact your TA as soon as possible. In the case of an excused absence, accommodations will be made for you to make-up daily work. You are responsible for learning any material that you missed. **No make-up exams will be given.** If your absence is excused, the final exam will count in place of the missing exam.

**Late Assignments:** **Late assignments are not accepted.** Exceptions to this policy are rare and require exceptional, extenuating circumstances. Contact your TA if this might apply to you.

**Important Deadlines:** The deadlines below apply to Chem 31B. To withdraw from Chem 31B, you must go *in person* to the summer session office and fill out the appropriate blue withdrawal slip.

Preliminary study list deadline:	Monday, July 20 <sup>th</sup> at 5 PM
Final study list deadline (add, drop, adjust units):	Friday, July 24 <sup>th</sup> at 5 PM
Term withdrawal and last day for partial refund:	Tuesday, August 4 <sup>th</sup> at 5 PM
Grading option and course withdraw deadline:	Friday, August 7 <sup>th</sup> at 5 PM

**Exam Regrades:** Regrade requests must be submitted in person to your TA no later than 48 hours after the assignment is returned. The original, unaltered exam must be accompanied by a **typed** cover letter clearly explaining why the work merited more points. Only answers written in ink can be regraded. Please note that when an exam is submitted for regrade, your TA and/or the instructor will reevaluate the entire exam, not just the problems requested. This can result in either a net gain or loss of points. Copies of graded exams are kept on file to monitor both grading consistency and Honor Code violations.

**Students with Disabilities:** Students needing academic accommodation due to disability must initiate the request with the Student Disability Resource Center (SDRC) located in the Office of Accessible Education (OAE). SDRC staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an accommodation letter for faculty dated in the current quarter in which the request is being made. *Students should contact the SDRC as soon as possible since timely notice is needed to coordinate accommodations.* The OAE is located at 563 Salvatierra Walk (650-723-1066).

## CHEMISTRY 31B | SUMMER 2015 | CARDIN

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
	July 20	21	22	23
10:00 AM - 12:00 PM	<b>LECTURE 1:</b> Intro to Chem 31B + Intermolecular Forces and Phase Changes (Ch. 11)	<b>LECTURE 2:</b> Kinetics, Rate Laws, Reaction Mechanisms, and the Impact of Temperature and Catalysts on Reaction Rates (Ch. 12)	<b>LECTURE 3:</b> Equilibrium, Kc vs. Qc, and ICE Tables (Ch. 13)	<b>LECTURE 4:</b> Le Chatelier's Principle (Ch. 13) + In-Class Practice with Material from Lectures 1-4
12:00 PM - 1:15 PM	LUNCH	LUNCH	LUNCH	LUNCH
1:15 PM - 3:00 PM	-	SECTION 1: IMFs and Phase Changes	SECTION 2: <b>Quiz (Lectures 1-2)</b> + Kinetics <b>Lab</b>	SECTION 3: Equilibrium <b>Lab</b>
3:00 PM - 4:30 PM	OFFICE HOURS	OFFICE HOURS	OFFICE HOURS	OFFICE HOURS
NOTES	Complete Day 1 Checklist + HW #1 (due by 9am Tuesday)    HW #2 (due by 9am Wednesday)    HW #3 (due by 9am Thursday)    HW #4 (due by 9am Friday)			
End of Chapter Problems (as needed):	Ch. 11: 1-59 odds	Ch. 12: 1-49 odds	Ch. 13: 1-39 odds	Ch. 13: 41-49 odds

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
	27	28	29	30
10:00 AM - 12:00 PM	<b>LECTURE 5:</b> Intro to Acids & Bases, Kw, and Calculating the pH of Acidic and Basic Solutions (Ch. 14)	<b>MIDTERM 1</b> (Lectures 1-4)	<b>LECTURE 6:</b> Acid/Base Titrations: SA/SB vs. WA/SB (Ch. 15)	<b>LECTURE 7:</b> Acid/Base Properties of Salts (Ch. 14) + Solubility & Precipitation (Ch. 15)
12:00 PM - 1:15 PM	LUNCH	LUNCH	LUNCH	LUNCH
1:15 PM - 3:00 PM	SECTION 4: <b>Quiz (Lectures 3-4)</b> + Midterm 1 Review	-	SECTION 5: Acid/Base Chemistry <b>Lab</b>	SECTION 6: <b>Quiz (Lectures 5-6)</b> + Solubility Equilibrium <b>Lab</b>
3:00 PM - 4:30 PM	OFFICE HOURS	-	OFFICE HOURS	OFFICE HOURS
NOTES	<b>Study for Midterm 1!</b> HW #5 (due by 9am Wednesday)    HW #6 (due by 9am Thursday)    HW #7 (due by 9am Friday)			
End of Chapter Problems (as needed):	Ch. 11-13 Cumulative Problems	Ch. 14: 1-63, 79, 81 odds	Ch. 15: 35-51 odds	Ch. 14: 65-77 odds Ch. 15: 55-75 odds

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
	August 3	4	5	6
10:00 AM - 12:00 PM	<b>LECTURE 8:</b> Intro to Buffers + Calculating Solution pH and pH Changes in Buffer Systems (Ch. 15)	<b>LECTURE 9:</b> In-Class Practice with Material from Lectures 5-8	<b>MIDTERM 2</b> (Cumulative, but focused on Lectures 5-8)	<b>LECTURE 10:</b> Entropy & Gibbs Free Energy (Ch. 16)
12:00 PM - 1:15 PM	LUNCH	LUNCH	LUNCH	LUNCH
1:15 PM - 3:00 PM	SECTION 7: <b>Quiz (Lecture 7)</b> + Buffers <b>Lab</b>	SECTION 8: <b>Quiz (Lecture 8)</b> + Midterm 2 Review	-	SECTION 9: Entropy <b>Lab</b>
3:00 PM - 4:30 PM	OFFICE HOURS	OFFICE HOURS	-	OFFICE HOURS
NOTES	HW #8 (due by 9am Tuesday)	<b>Study for Midterm 2!</b>		HW #9 (due by 9am Friday)
End of Chapter Problems (as needed):	Ch. 15: 1-33 odds	Ch. 14-15 Cumulative Problems	NOTHING!	Ch. 16: 1-45 odds

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
	10	11	12	13
10:00 AM - 12:00 PM	<b>LECTURE 11:</b> Redox Reactions, Voltaic Cells, and Batteries (Ch. 17)	<b>LECTURE 12:</b> Spontaneity ( $\Delta G$ , $E_{cell}$ , and $K$ ), Electrolytic Cells, and Plating Cells (Ch. 17)	<b>FINAL EXAM REVIEW</b>	<b>FINAL EXAM</b> (Cumulative)
12:00 PM - 1:15 PM	LUNCH	LUNCH	LUNCH	
1:15 PM - 3:00 PM	SECTION 10: <b>Quiz (Lecture 10)</b> + Redox Reactions & Voltaic Cells <b>Lab</b>	SECTION 11: <b>Quiz (Lecture 11)</b> + Electrolytic Cells <b>Lab</b>	OFFICE HOURS	Take a nap. You've earned it!
3:00 PM - 4:30 PM	OFFICE HOURS	OFFICE HOURS		
NOTES	HW #10 (due by 9am Tuesday)	HW #11 (due by 9am Wednesday)	<b>Study for Final Exam!</b>	
End of Chapter Problems (as needed):	Ch. 17: 1-15 odds	Ch. 17: 17-45, 53-59 odds	Ch. 16-17 Cumulative Problems + Review Ch. 11-15 Material	NOTHING!

On (or before) the second day of Chemistry 31B, please do each of the following:  
 (If you completed this checklist as part of Chem 31A, you do not need to redo any of this!)

- **Show up to class!** We meet for lecture in Braun Lecture Hall (Mudd Building) from 10am-12pm.
- Purchase and **register your iClicker device**. To register it:
  - Log onto our Chem31B page at [coursework.stanford.edu](http://coursework.stanford.edu).
  - On the left side of the course page, click on the i>clicker tab.
  - Enter your i>clicker Remote ID in the appropriate box. (You will find your 8-character Remote ID on the back of your i>clicker device, under the bar code.)
  - Click the Register button.
- Purchase the Tro textbook and **register for the Mastering Chemistry online homework portal**. Your unique registration code, along with instructions for registering, can be found inside the textbook.
  - Link to our Chem 31A/B page using the following Course ID: [cardin51423](#)
  - **Complete the first homework assignment (HW #1)**, which is due by 9am on the 2<sup>nd</sup> day of class.
- **Complete Stanford's mandatory online safety training course and print the completion certificate.** Successful completion of Stanford's online training course is required before students may attend and complete any undergraduate laboratory courses. To complete the online training course:
  - Go to [axess.stanford.edu](http://axess.stanford.edu) and log in with your SUNetID and password (if not already logged in).
  - On the top toolbar, clicks on Stars.
  - In the search catalog, type: **Safety Training for Stanford University Undergraduate Chemistry Students**
  - Click search to access the following result:



Search Results:

Previous Next

Results 1 - 1 of 1 for **Safety Training for Stanford University Undergraduate Chemistry Students**

Course Name	Course Description	Availability
<a href="#">Safety Training for Stanford University Undergraduate Chemistry Students (CHEM-5000)</a>	Successful completion of this training course is required for students enrolled in an undergraduate chemistry laboratory course (31A, B, S, 33, 35, 36, 130, 132, 134, 174, 176, and 184).	<a href="#">Continue &gt;&gt;</a>

- Click continue to enroll in the course.
- Click enroll, then continue, and then launch to begin the course.

The course takes about 25 minutes to complete. **Upon completion of this online training, print your STARS confirmation certificate and bring it with you to Section 1 to turn in to your TA.** You will not be able to participate in section or lab until you have completed this training and given the certificate to your TA. Successful completion of this training is good for one year. It is an honor code violation to falsely submit certificates for work not completed!

Questions about any of this? Please email Dr. Cardin at [nbcardin@stanford.edu](mailto:nbcardin@stanford.edu) for help.