CHM 11200 Course Packet Summer 2023

CHM 11200 in Summer 2023 is Online
(CRN 30011)
https://purdue.brightspace.com/d2l/home/797605

Instructor: Dr. Cindy Harwood
Lecture: Synchronous online through Zoom 2:10-3:00 pm MTWTh (will be recorded)
However, (https://purdue-edu.zoom.us/j/97683478774?pwd=K2E4Q3ZQcGJXUFBYU2VSZJN00Q0xqZz09)
Email: charwood@purdue.edu
Office Hours: T & Th 4:00-5:00 pm EDT online and by appointment online.

Chemistry 11200 is an online, 3-credit-hour, foundational general chemistry course for agriculture, health and human science, and other majors. The minimum prerequisite for CHM 11200 is credit for CHM 11100. The course is oriented around helping you learn some of the fundamental chemistry concepts, calculations, and laboratory skills you need in your major.

In CHM 11200, General Chemistry II, the following topics will be covered:

- Intermolecular forces (IMF) with an emphasis on understanding IMF at the molecular level and connections between the molecular level and macroscopic properties.
- Acids, bases, and buffers. Many disciplines use these concepts and chemists have developed different kinds of models to describe acids and bases. You will learn and use three different models. We will focus on acid-base reactions, equilibria, and the application of quantitative equilibrium concepts to such reactions. Buffers have important applications in agriculture and in health sciences that will be explored in lecture and laboratory.
- Rates of chemical reactions, known as kinetics, and the quantitative application of zero-order, first-order, and second-order kinetics concepts to understand the factors that control rates of reaction and rates of chemical change.

There is one online section of CHM 11200 taught by Professor Harwood. We have one graduate course coordinator, Angelique Ithier (aithier@purdue.edu) who will help manage the logistics of the course and assist me with exams and grading. Two graduate teaching assistants, Nick Koehn (koehn0@purdue.edu) and Mauricio Cortes (cortes5@purdue.edu), each teach a weekly online recitation (PSO) section offering an opportunity to reinforce what is discussed in lecture and to discuss laboratory. We strongly encourage you to attend recitation! All labs for this course are online.

The CHM 11200 team—the professor, graduate coordinator, and graduate teaching assistants, administrative assistants, and general chemistry preparations lab—are committed to and focused on helping you learn chemistry. We know that this is a foundational course for your major, and in order to achieve your goals and dreams, you need to do well in the course! Please read on to learn about the required materials, lecture and lab schedule, recommended ways to study, grading, and other course policies and procedures.

Detailed learning objectives are provided for each chapter/topic of the course. Broad course learning outcomes for this course are:

1. Explain basic chemical concepts including intermolecular forces and their effect on physical properties, chemical kinetics and factors affecting rates of reactions, and acid-base chemistry and pH.
2. Apply problem-solving skills to calculate unknown information related to chemical concepts such as kinetics, and acid-base.
3. Analyze tabulated data, graphs, raw data from laboratory experiments, observations, and molecular-level models to answer scientific questions and construct evidence-based arguments supporting a scientific claim.

Dr. Harwood: My contact information is located on page 1 of this document. I will hold office hours this semester online. Please feel free to email me with questions. I will generally respond within a few hours. Please email me from your @purdue.edu account so I can tell for certain who is emailing! Please include an informative subject line so I know what the email is about and sign your email so I know your name.

Course Information: Lecture outlines, links to homework assignments, reading assignments, announcements, and other course information are available on the course Brightspace page. https://purdue.brightspace.com/d2l/home/797605. I recommend you visit it often!

Required Materials

Textbook: The textbook chosen for you this semester is Chang, Chemistry, 14th edition. I have also chosen the McGraw-Hill ALEKS online homework program for our homework platform. When you purchase ALEKS, it includes an electronic copy of the textbook, Chang, Chemistry, 14th edition (ISBN: 9781266823466). You can purchase ALEKS from the University bookstores or directly through McGraw-Hill (it’s cheaper directly from McGraw-Hill because the bookstore adds a small markup to the McGraw-Hill price). If you are using an old book (any edition) you will still need to purchase access to the ALEKS program which automatically includes an electronic copy of the text. A link on the course Brightspace page will direct you to the McGraw-Hill site where you can make your purchases. (NOTE: If you were in CHM 11100 or CHM 11200 in Fall 2022 or Spring 2023 and purchased 52-week access, you should not need to repurchase ALEKS. Contact Dr. Harwood if you have questions about this.)

Lab Manual: We have a digital laboratory manual this semester from Top Hat. You must purchase access to the online lab manual using the link that will be emailed to you. You will also need to purchase access to BeyondLabz which is an online lab simulation site that we will be using this semester for our labs. That link can also be found in the Brightspace course.

Week #1 Assignments:

- Sign up for Brightspace notifications for email & announcements! (See Online Learning 101 for how to do this.)
- Purchase required materials: ALEKS (includes textbook), TopHat, and BeyondLabz.
- Read all the information in this course packet.
- Begin the first ALEKS weekly homework assignment.
- Read the Reading Assignments and Learning Objectives (on Brightspace).

Weekly Assignments & Due Dates:

- Read the weekly organizer each week.
- Lecture: Monday, Tuesday, Wednesday, Thursday (online)
- PSO (Recitation): Monday & Wednesday (online)
- Lab Reports: due on Thursday and Tuesday @ 11:59 pm
- Homework: due on Friday @ 11:59 pm
- Activities & Explorations: due Monday @ 11:59 pm

***For more information on the topics in this course summary, please see course Brightspace page. ***
Overview of CHM 11200 Activities and Policies
***For more detailed information, see the course Brightspace page. ***

**Brightspace**
This is the learning management system (LMS) that we use in the course. I will post all the course resources on our Brightspace page and you will need to access this page multiple times each week. The course content is broken up into 4 topics that are explained on the course lecture schedule at the end of this document.

**Weekly Organizers**
Every Sunday I will post a weekly organizer for you. It will have an overview of the week’s activities – reading, lecture, labs, homework, quizzes, activities/explorations/worksheets, and office hours. They are a marvelous way to help you stay organized and on track in the class. Download them each week!

**Reading**
See the lecture schedule in the course syllabus for the reading assignments. These are also posted on our Brightspace webpage. *Reading the assigned material prior to listening to the lecture and laboratory materials is recommended.*

**Lecture – Online!**
Lectures will be presented synchronously online. See lecture schedule in the course packet for details.

**Recitation (PSO)**
Your teaching assistant conducts two weekly online recitations (PSO) designed to help you understand the upcoming laboratory and to discuss any questions you may have from lecture or the homework. Recitation guides containing relevant conceptual and numerical questions are provided in Brightspace each week. Your teaching assistant will facilitate group discussions over these problems. You will have time to ask questions and check your homework and lab answers so be ready to ask your homework and lab questions in recitation.

**Homework (ALEKS)**
Each week you will have an online homework assignment in ALEKS. Deadlines for completing the on-line assignments will be listed on the online ALEKS assignment page. Homework will be due on Fridays at 11:59 pm EDT. You will have a maximum of three attempts to complete each homework question and a maximum of three submission attempts for each assignment before the listed due date. Homework will be scored and recorded on-line and there is no hand grading or regrading of homework. *No time extensions are possible for homework unless there is a class-wide technical problem or you have a university excused absence.*

**Activities & Explorations**
These are activities where you may be asked to consider some data or how molecules interact and then make a claim and support it with your reasoning (claim-evidence-reasoning sheets).

There are 6 activities worth 25 points each (the lowest will be dropped). The Activities & Explorations will submitted through Brightspace. Activities and explorations will be due on Mondays at 11:59 pm EDT as noted in Brightspace. Late work will not be accepted unless there are extenuating circumstances (illness, grief absence, University sponsored activity).

**Exams**
There will be 2 online exams in Brightspace this semester worth 125 points each. These exams will be held synchronously during lecture time (see the course schedule for exam dates). They will be proctored by your graduate teaching assistant through Zoom.
Laboratory (Top Hat & BeyondLabz)

Laboratory exercises are an integral part of CHM 11200 and we will complete our labs this year using Top Hat Labs as our lab manual and BeyondLabz as our main lab simulation platform. Please see the Brightspace course webpage for Top Hat and BeyondLabz access purchase information! Below are due dates and guidelines.

- There will be 1-2 labs per week during the summer semester.
- There will be NO LABS during Week 1.
- Labs for the week will be released in Top Hat on Fridays by 8:00 pm EDT.
- Lab reports will be due on Thursdays and Tuesdays at 11:59 pm EDT.
- Your lab report will be completed online through Top Hat. You should make sure to always:
  - Click SAVE or SUBMIT after you type your responses.
  - Label graphs and tables, where appropriate.
  - Use the data you collected for the calculations and analysis.
  - Use correct units of measurement and significant figures.
  - Use chemical terms and concepts correctly.
  - Ensure results and conclusions are consistent with your data and observations.

You will be able to review your graded lab reports online within one week after they are submitted. If you have questions about your grade, speak with your graduate lab instructor.

Determining your Course Grade, Summer 2023

Each of the assigned course activities for CHM 11200 is worth the number of points listed below. Before course grades are finalized at the end of the semester the following scores will be dropped:

- your lowest homework score
- your lowest lab score
- your lowest Activity and Exploration score

The total number of points for CHM 11200 will be distributed as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Homework</td>
<td>100 pts</td>
<td>(Best 6 out of 7 @ 16.67 pt. each)</td>
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<tr>
<td>Exams</td>
<td>250 pts</td>
<td>(125 pts each)</td>
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<tr>
<td>Labs</td>
<td>225 pts</td>
<td>(Best 9 out of 10 @ 25 pts each)</td>
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<tr>
<td>Activities &amp; Explorations</td>
<td>125 pts</td>
<td>(Best 5 out of 6 @ 25 pts each)</td>
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Total ........................................ 700 pts

At the end of the summer session, your course grade will be based on the following scale:

- A: 612.5 pts and above
- B: 542.5 – 612.4 pts
- C: 472.5 – 542.4 pts
- D: 402.5 – 472.4 pts
- F: 0 – 402.4 pts

Save copies of all work you turn in until after you have received your course letter grade for CHM 11200. To resolve any discrepancies, your paper(s) will need to be reviewed.
Course Activities, Policies and Procedures

Studying Chemistry
Expect to spend at least 8-12 hours per week on chemistry. This time includes reading course materials, listening to lectures, completing homework, activities, exams, and lab assignments.

Sources of Help
There are several free sources of help for CHM 11200 students: (1) professor and (2) TA office hours.

Changing Sections/Dropping

<table>
<thead>
<tr>
<th>UNIVERSITY DEADLINES - Summer 2023</th>
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<tr>
<td>Fri. June 16: Last day to cancel (drop) a course in myPurdue, without it appearing on your record.</td>
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<tr>
<td>Fri. June 23: Last day to cancel (drop) a course without a grade.</td>
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<td>Wed. July 12: Last day to cancel (drop) a course (with a passing or failing grade).</td>
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Adding the Course/Late Registration
Students are not permitted to add CHM 11200 after June 16. Email Dr. Harwood (charwood@purdue.edu) if you register after the course begins to see about making up missed assignments.

Technology Problems
In the event of a major technical problem, course requirements, deadlines, and grading cutoffs are subject to changes that may be necessitated by circumstances beyond the instructor's control. Relevant changes to CHM 11200 will be posted on the course Brightspace site or can be obtained by contacting Dr. Harwood via email. You are expected to read your @purdue.edu email on a frequent basis.

Accessibility and Accommodations:
Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.

Disability Accommodations
If you require accommodations to access course activities or materials, the accommodations must be described and approved by Disability Resource Center, Young Hall Room 830, 302 Wood Street, 765-494-1247, drc@purdue.edu, www.purdue.edu/drc. To implement accommodations you must follow the instructions listed as “Responsibilities of the Student” in the letter prepared by the Disability Resource Center. Within the first week of the semester or within one (1) week of the date of the letter, you are required to electronically share a copy of your letter to Dr. Harwood (charwood@purdue.edu). Implementation of accommodations may not be possible if insufficient notification is given.

Diversity Welcome
We believe every student in this course has something of value to contribute. Please take care to respect the different experiences, beliefs and values expressed by students and staff involved in this course. We support Purdue's commitment to diversity, and welcome individuals of all ages, backgrounds, citizenships, disabilities, education, ethnicities, family statuses, genders, geographical locations, languages, military experience, political views, races, religions, sexual orientations, socioeconomic statuses, and work experiences. See: http://www.purdue.edu/diversity-inclusion/

Nondiscrimination Statement
Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange ideas, and enriches campus life. Purdue’s nondiscrimination policy can be found at https://www.purdue.edu/purdue/ea_eou_statement.php.
Medically Excused Absence Policy for Students (MEAPS)
You should contact the Office of the Dean of Students (ODOS) at 765-494-1747 (odos@purdue.edu) to request that a notice of the leave be sent to instructors if you have experienced hospitalization, emergency department or urgent care visits. ODOS will require documentation. Please follow up with your instructors to make arrangements per this policy.

Grief Absence Policy for Students (GAPS)
If you experience the death of a family member or close friend, notify the Office of the Dean of Students at 765-494-1747 or (odos@purdue.edu). You will need to complete the Grief Absence Request Form (https://www.purdue.edu/advocacy/students/absences.html). I will receive an email from the Dean of Students informing me of your absence. Scores for any missed assignments under a verified GAPS absence can be either made up or pro-rated (assigned a score based on your average and the class average). Contact Dr. Harwood for more information.

MAPS Absence Policy for Students (MAPS)
You should contact the Office of the Dean of Students to request that a notice of the leave be sent to instructors as soon as the student is informed of the dates of mandatory military training. You will need to complete the Military Absence Request Form (https://www.purdue.edu/advocacy/students/absences.html). Given proper documentation, I will excuse you from class and provide the opportunity to earn equivalent credit and to demonstrate evidence of meeting the learning outcomes for missed assignments or assessments.

Absences Due to University Sponsored Activities
You should email your letter stating the reason for the absence to me as far in advance as possible. We will meet to discuss the absence and how, if possible, the learning outcomes associated with any missed class activities may be addressed.

Mental Health and Wellness Statement
If you find yourself beginning to feel some stressed, anxious and/or slightly overwhelmed, try WellTrack. Sign in and find information and tools at your fingertips, available to you at any time.

If you need support and information about options and resources to help you, please contact or see the Office of the Dean of Students. Call 765-494-1747. Hours of operation are M-F, 8:00 a.m. - 5:00 p.m.

If you find yourself struggling to find a healthy balance between academics, social life, stress, etc., sign up for free one-on-one virtual or in-person sessions with a Purdue Wellness Coach at RecWell. Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is completely free and can be done on BoilerConnect.

If you’re struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours.

For details about other Purdue University policies, including academic integrity, class attendance and absence reporting, emergency, nondiscrimination, and disability services, see the course Brightspace site.
Basic Needs Security
Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 am-5 pm Monday through Friday. Considering the significant disruptions caused by the current global crisis as it related to COVID-19, students may submit requests for emergency assistance from the Critical Needs Fund.

The campus also has a food pantry open to the entire Purdue community: The ACE Campus Food Pantry

Purdue Honors Pledge
We support and affirm the academic integrity of Purdue in accordance with the Purdue Honors Pledge: “As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together – we are Purdue.” https://www.purdue.edu/provost/teachinglearning/honor-pledge.html.

Academic Integrity Statement and Consequences.
Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert University officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the University to investigate the concern.” Please read http://www.purdue.edu/odos/osrr/academic-integrity/index.html.

In CHM 11200, academic integrity means “doing your own work” at all times. Discussion of chemical concepts and problem-solving methods is encouraged, but sharing your answers and work on social media for the express purpose of letting other students copy it is not acceptable. Such a use of technology does not help you learn and is considered academic dishonesty.

Online exams in CHM 11200 are open book and open note, however all collaboration with others (such as Group Me, Zoom, discussion boards, text, in-person, etc.) during an exam is prohibited. Using online resources such as Chegg to gain answers to any graded assignment (including homework, labs, exams, activities and explorations, and worksheets) is not allowed. Posting any course materials to websites is a violation of copyright laws and is not allowed. Instructors can obtain user information from Chegg and other sites when inappropriate course material is posted and investigate it.

Consequences of academic dishonesty include receiving a lower or failing grade for an assignment, being required to repeat the assignment, receiving a lower or failing grade for the course and/or dismissal from the University. Incidents of academic integrity are referred to the Office of the Dean of Students. A student accused of academic dishonesty will be afforded due process as defined by Purdue University procedures.

Course Evaluation
Toward the end of this semester, you will be provided with an opportunity to give feedback on this course and your instructor. Purdue uses an online course evaluation system. You will receive an official email from evaluation administrators with a link to the online evaluation site and will receive a prompt to complete the survey when you login to Brightspace. Your participation is an integral part of this course, and your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system because it helps me improve the course!

Disclaimer
This syllabus is subject to change. You will be notified of any changes as far in advance as possible via an announcement on Brightspace. Monitor your Purdue email daily for updates.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture Topic</th>
<th>Reading (textbook)</th>
<th>Required Video Lectures</th>
<th>Laboratory (Top Hat laboratory manual)</th>
<th>Activities (due Monday)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12-Jun</td>
<td>Introduction</td>
<td>11.1-11.2: pp 463-464</td>
<td>Properties of Liquids</td>
<td>NO LABS WEEK 1</td>
<td>Purchase and get set up with TopHat Lab manual and BeyondLabz</td>
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<td></td>
<td>13-Jun</td>
<td>Intermolecular Forces</td>
<td>11.2-11.3: pp 465-474; 11.8: pp 495-498</td>
<td>Properties of Solutions; Colloids</td>
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<td></td>
<td>14-Jun</td>
<td>Intermolecular Forces; Liquid Properties; Phase Changes</td>
<td>12.1-12.3: pp 514-522; 12.6-12.7: pp 527-540</td>
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<td></td>
<td>15-Jun</td>
<td>Solutions &amp; Solubility; Solution Properties</td>
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<td></td>
<td>21-Jun</td>
<td>Acids and Bases</td>
<td>15.3: pp 664-669</td>
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<td>L2: IMFs Applications</td>
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<td></td>
<td>22-Jun</td>
<td>Strong Acids and Bases – pH</td>
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<td>Calculating pH</td>
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<td>3</td>
<td>26-Jun</td>
<td>More on Strong Acids and Bases</td>
<td>15.4-15.5: pp 670-681</td>
<td>Polyprotic Acids</td>
<td>L3: Analysis of Baking Soda</td>
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<td></td>
<td>27-Jun</td>
<td>Weak Acids and Bases</td>
<td>15.6-15.9: pp 681-691</td>
<td>Structure &amp; Acid Strength</td>
<td>L4: Identifying Acids &amp; Bases</td>
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<tr>
<td></td>
<td>28-Jun</td>
<td>Weak Acids and Bases</td>
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<td>29-Jun</td>
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<td>4</td>
<td>03-Jul</td>
<td>NO CLASS</td>
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<td>L5: Describing Acids</td>
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<td>04-Jul</td>
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<td></td>
<td>06-Jul</td>
<td>Buffers</td>
<td>16.3: pp 719-723</td>
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** Synchronous online session through Zoom during regular class meeting (2:10-3:00 pm). Will be recorded and posted on Brightspace.
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<th>Quizzes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11-Jul</td>
<td>Titrations</td>
<td>16.4: 724-728</td>
<td>L7: Acid-Base Titrations</td>
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<td></td>
<td>12-Jul</td>
<td>Titrations</td>
<td>16.4: 728-732</td>
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<tr>
<td></td>
<td>13-Jul</td>
<td>Titrations and Buffers Applications</td>
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<td>6</td>
<td>17-Jul</td>
<td>Kinetics</td>
<td>13.1: pp 557-564</td>
<td>L8: Weak Acid-Strong Base Titrations</td>
<td>Ka from Titration Curve</td>
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<td></td>
<td>18-Jul</td>
<td>Kinetics</td>
<td>13.2: pp 565-568</td>
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<td></td>
<td>20-Jul</td>
<td>Kinetics</td>
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<td></td>
<td>25-Jul</td>
<td>Kinetics</td>
<td>13.4: 582-583</td>
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<td></td>
<td>26-Jul</td>
<td>Kinetics</td>
<td>13.6: pp 594-599</td>
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<tr>
<td></td>
<td>27-Jul</td>
<td>Kinetics</td>
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<tr>
<td>8</td>
<td>31-Jul</td>
<td>Exam 2 (during lecture)</td>
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<tr>
<td></td>
<td>01-Aug</td>
<td>NO FINAL EXAM IN CHM 11200!!</td>
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<td></td>
<td>02-Aug</td>
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<td></td>
<td>03-Aug</td>
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