
CHM 11200 Course Packet Summer 2022

CHM 11200 in Summer 2022 is Online
(CRN 30011)

<https://purdue.brightspace.com/d2l/home/553512>

Instructor: Dr. Cindy Harwood

Lecture: Synchronous online through Zoom (will be recorded)
(<https://purdue-edu.zoom.us/j/97062053229?pwd=ay9DTkNUa2dxWGIFakJSdkdCL3dXUT09>)

Email: charwood@purdue.edu

Office Hours: T 1:00-2:00 PM EDT & Th 6:00-7:00 PM EDT online and by appointment online.

Problem Solving Sessions: Mondays from 2:10-3:00 pm EDT through Zoom (see Brightspace for details)

Chemistry 11200 is a 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. Your graduate teaching assistant, Zachary McLeod (zmcleod@purdue.edu), teaches 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 and graduate teaching assistant, 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.*
4. *Demonstrate competence in collecting, analyzing, and interpreting data in the laboratory, using computers in data acquisition and processing, using available software in data analysis, and applying safe laboratory practices.*

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 generally will 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/553512>. I recommend you visit it often!

Required Materials

Textbook: The textbook chosen for you this semester is Chang, Chemistry, 13th edition. I have also chosen the McGraw-Hill **Connect** online homework program for our homework platform. When you purchase Connect, it includes an electronic copy of the textbook, Chang, Chemistry, 13th edition (ISBN: 9781260694420). You can purchase Connect 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 Connect 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 2021 or Spring 2022, you do not need to repurchase Connect. Connect codes are good for 2 years. Contact Dr. Harwood if you have questions about this.)

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

Week #1 Assignments:

- **Complete the Online Learning 101 module if you haven't already done so for a previous class.**
- **Sign up for Brightspace notifications for email & announcements! (See Online Learning 101 for how to do this.)**
- Purchase required materials (Connect, TopHat and BeyondLabz) and register for the current semester Connect course.
- Purchase lab access through TopHat and BeyondLabz. Read all the information in this course packet.
- Begin the first Connect 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)
- Pre-labs: due on Tuesday or Thursday; Lab Reports: due on Thursday or Sunday
- Problem Solving Worksheets: due Tuesday (Weeks 2-7)
- Quizzes: Wednesday
- Homework: due on Friday
- Activities & Explorations: due Sunday

***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 modules that are explained on the course lecture schedule at the end of this document.

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. Each week (except for Weeks 1 and 8) there will be an online, synchronous problem-solving/help session during regular class hours (2:10-3:00 pm). See lecture schedule in the course packet for details.

Recitation (PSO)

Your teaching assistant conducts a weekly online recitation 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 pre-lab answers so be ready to ask your homework and lab questions in recitation.

Homework (CONNECT)

Each week you will have an online homework assignment in CONNECT which will consist of required questions and possibly optional questions. Required questions will contribute to your homework point total, while optional questions will not. However, optional questions and tutorials can be used to help understand how to work problems. A few homework problems may appear as questions on quizzes.

Deadlines for completing the on-line assignments will be listed on the online CONNECT Assignment page. Homework will usually be available when the module opens and due on Fridays at 11:59 pm EDT. You typically have at least 11 days after it is assigned to complete the homework. You will have a maximum of **three** attempts to complete each homework **question** 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 unless you are in Covid quarantine.*

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). You might explore a simulation or watch a demonstration video and answer questions about the demonstration.

There are 11 activities worth 20 points each (the lowest will be dropped). The Activities & Explorations will be submitted through Brightspace as a pdf file. If you are unsure about how to create a pdf file, please see Help>FAQ on the black content bar in the lecture Brightspace course. Activities & explorations will be due on Sundays at 11:59 PM EDT as noted in Brightspace. Late work will not be accepted unless there are extenuating circumstances (quarantine, isolation, grief absence, University sponsored activity).

Worksheets

Each Monday on weeks 2-7 I will host problem solving sessions in lieu of lecture. There will be short (~ 5 questions) worksheets associated with those sessions. The worksheets give you a chance to apply the skills you are learning to problem solving. Turn in the worksheets to Brightspace by Tuesday at 11:59 PM

EDT and you will earn 5 points for each. If you turn in all 6 worksheets you will receive an additional 5 pts.

Quizzes

There will be 7 online quizzes in Brightspace this semester worth 40 points each (the lowest will be dropped). Quiz 1 (in Week 1) will be a review of relevant CHM 11100 material. The content of Quizzes 2-7 will include problems and concepts from the prior or present week of class, as noted in the Lecture Schedule. Quizzes will be due on Wednesdays and I will announce on Brightspace when they will open and close. Your lowest-scoring quiz will be dropped at the end of the semester.

Laboratory

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.
- Pre-labs, lab manual chapters, lab data, supporting lab information and lab reports for the week will be released on Fridays by 8:00 PM EDT
- Pre-labs will be due on Tuesday or Thursday and lab reports will be due on Thursdays and Sundays at 11:59 PM EDT
- Your lab report will be completed online. 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 lab instructor.

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!

Determining your Course Grade, Summer 2022

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

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

Homework	140 pts	(Best 7 out of 8 @ 20 pts. each)
Quizzes	240 pts	(Best 6 out of 7 @ 40 pts each)
Labs	225 pts	(Best 9 out of 10 @ 25 pts each)
Activities & Explorations	200 pts	(Best 10 out of 11 @ 20 pts each)
Worksheets	35 pts	(6 @ 5 pts each + 5 pts for turning in all 6)
Capstone Activities/Worksheets	160 pts	(4 @ 40 pts each; multi-concept; in lieu of final exam)
Total	1,000 pts	

At the end of the semester your course grade will be based on the following scale:

- A: 875 pts and above
- B: 775 – 874 pts
- C: 675 – 774 pts
- D: 575 – 674 pts
- F: 0 – 574 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, watching demonstrations, completing homework and assignments and explorations, quizzes, and lab assignments.

Sources of Help

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

Changing Sections/Dropping

UNIVERSITY DEADLINES - Summer 2022

Fri. June 17: Last day to cancel (drop) a course in myPurdue, without it appearing on your record.

Fri. June 24: Last day to cancel (drop) a course without a grade.

Wed. July 13: Last day to cancel (drop) a course (with a passing or failing grade).

Adding the Course/Late Registration

Students are usually not permitted to add CHM 11200 after June 17. Email Dr. Harwood (charwood@purdue.edu) if you register late to see about making up missed assignments. **NOTE: The university will charge a \$200 Late Registration fee beginning Jun 17.**

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.

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 quizzes 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 a quiz is prohibited.

Using online resources such as Chegg to gain answers to any graded assignment (including homework, labs, quizzes, 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.

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>.

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.

Quarantine or Isolation

If you become quarantined or isolated at any point in time during the semester please notify Dr. Harwood (charwood@purdue.edu). If you find yourself too sick to progress in the course for a short time I am happy to work with and support you. The Office of the Dean of Students (odos@purdue.edu) is also

available to support you should this situation occur.

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)

A student 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. The student will need to complete the Military Absence Request Form (<https://www.purdue.edu/advocacy/students/absences.html>). Given proper documentation, I will excuse the student 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

A student should email his or her letter stating the reason for the absence to the instructor as far in advance as possible. The student and instructor 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.

Lecture, Lab, Quiz Schedule

Chemistry 11200

Week	Date	Lecture Topic	Reading (textbook)	Laboratory (Top Hat laboratory manual)	Quizzes
1	13-Jun	Introduction		NO LABS WEEK 1 Purchase and get going with TopHat Lab manual and BeyondLabz	Quiz 1 (CHM 11100 Review)
	14-Jun	Intermolecular Forces	11.1-11.2: pp 463-464		
	15-Jun	Intermolecular Forces; Liquid Properties; Phase Changes	11.2-11.3: pp 465-474; 11.8: pp 495-498		
	16-Jun	Solutions & Solubility; Solution Properties	12.1-12.3: pp 514-522; 12.6-12.7: pp 527-540		
2	20-Jun	Intermolecular Forces Problem Solving Session**	12.4: pp 522-524	L1: IMFs Introduction	Quiz 2 (IMF)
	21-Jun	Equilibrium	14.1-14.2: pp 617-620	L2: IMFs Applications	
	22-Jun	Acids and Bases	15.1-15.2: pp 661-664		
	23-Jun	Acids and Bases – pH	15.3: pp 664-669		
3	27-Jun	Strong Acid-Base Problem Solving Session**	15.4-15.5: pp 670-681	L3: Analysis of Baking Soda	Quiz 3 (Equilibrium/Acid-Base)
	28-Jun	Weak Acids and Bases	15.6-15.8: pp 681-688	L4: Identifying Acids & Bases	
	29-Jun	Weak Acids and Bases	15.9: pp 688-697		
	30-Jun	Salt Solutions & pH; Common Ion Effect	16.1-16.2: pp 715-719		
4	04-Jul	4th OF JULY HOLIDAY		L5: Describing Acids	Quiz 4 (Acid/Base)
	05-Jul	Weak Acid-Base Problem Solving Session**			
	06-Jul	Buffers	16.3: pp 719-723		
	07-Jul	Buffers	16.3: pp 723-724		

** Synchronous online session through Zoom during regular class meeting (2:10-3:00 pm). Will be recorded and posted on Brightspace.

Chemistry 11200

Week	Date	Lecture Topic	Reading (textbook)	Laboratory (Top Hat laboratory manual)	Quizzes
5	11-Jul	Buffer Problem Solving Session**		L6: Preparation of Buffers	Quiz 5 (Acid-Base/Buffers)
	12-Jul	Midterm Capstone Activities (no class)			
	13-Jul	Titrations	16.4: 724-728	L7: Acid-Base Titrations	
	14-Jul	Titrations	16.4: 728-732		
6	18-Jul	Titration Problem Solving Session**		L8: Weak Acid-Strong Base Titrations	Quiz 6 (Titrations)
	19-Jul	Kinetics	13.1: pp 557-564		
	20-Jul	Kinetics	13.2: pp 565-568	L9: Factors Which Influence the Rates of Reactions	
	21-Jul	Kinetics	13.3: pp 569-576		
7	25-Jul	Kinetics Problem Solving Session**		L10: Chemical Kinetics Molecular Investigations	Quiz 7 (Kinetics)
	26-Jul	Kinetics	13.3: pp 576-581		
	27-Jul	Kinetics	13.4: 582-583		
	28-Jul	Kinetics	13.6: pp 594-599		
8	01-Aug	Capstone Help Session			
	02-Aug	Final Capstone Activities (no class)			
	03-Aug				
	04-Aug				

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