Instructors:
Dr. Tong Ren, BRWN 5130A, 765-494-5466, tren@purdue.edu
Dr. Jon Rienstra-Kiracofe, BRWN 1149, 765-494-5499, jonrk@purdue.edu
Dr. Jon Wilker, BRWN 4131C, 765-496-3382, wilker@purdue.edu
Dr. Scott McLuckey, BRWN B147A, 765-494-5270, mcluckey@purdue.edu

General Chemistry Office, BRWN 1144, 765-494-5250, genchem@purdue.edu
Walk-In Hours: TBD (see Brightspace)
Marybeth Miller, Course Coordinator, BRWN 1144D, 765-494-5251; mille201@purdue.edu
Marlene Miller, Administrative Assistant, working remotely, marlenem@purdue.edu
Melissa Roadruck, Administrative Assistant, BRWN 1144, 765-494-5252, melissa@purdue.edu

The General Chemistry Office handles all the administrative details associated with the course. All non-chemistry questions about the course should be directed to this office. For example, contact us to discuss accommodations, to obtain grade checks, to discuss time conflicts, to get clarification on course policies, to resolve grade issues, and to get signatures on university forms such as add/drop forms. We are able to help you with a variety of requests so you can maximize your success in general chemistry.

Marybeth Miller supervises the teaching assistants, manages administrative aspects of the course, and maintains all of the grade records for the course. She can address concerns or questions you may have about course policies and procedures, as well as assist you with course material.

Note: All employees and visitors to the General Chemistry office are required to wear masks and maintain 6-foot social distancing.

Course Description
Chemistry 11500 is the foundational general chemistry course for engineering, science, and some agricultural majors. The stated minimum prerequisite for CHM 11500 is one year of algebra and one year of chemistry.

At the beginning of the course, you will have a chance to review your high school chemistry using several resources. Topics covered during the semester will include nuclear chemistry, quantum theory and atomic structure, periodic trends, thermochemistry, models in bonding, shapes of molecules, intermolecular forces, organic chemistry, synthetic and biological polymers, infrared spectroscopy, and liquids, solids and phase changes. Detailed learning objectives for each unit will be posted on the course Brightspace page.

The course has been designed and structured so that in addition to the treatment of the concepts and topics listed above, there is a simultaneous emphasis on development of problem-solving skills. Virtual laboratories are scheduled weekly and offer an opportunity to reinforce and extend what is discussed in lecture, explore new topics, and to develop your knowledge of chemistry laboratory skills.

The Chemistry 11500 team—the professors, course coordinator, teaching assistants, administrative assistants, and preparations lab staff—are committed 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 recitation schedule, recommended ways to study, lab policies, grading, and other course policies and procedures.

**Foundational Core:** CHM 11500 meets the science requirement of the university’s foundational core.

**Course Information**
Brightspace: [https://purdue.brightspace.com/d2l/login](https://purdue.brightspace.com/d2l/login) is the primary course management site for the course. Assignments, checklists, links to lectures and labs, announcements, learning objectives, grades, and other course information will be posted on Brightspace. All of your lab work and office hours will be conducted using Microsoft Teams and One Note [Purdue Office 365 portal](https://login.microsoftonline.com/). It will be important for you to learn which site to use for which type of assignment. Details follow in this course packet.

**Course Structure**
CHM 11500 consists of the following components, which will be discussed in more detail later in this packet:

- lecture - online via Microsoft Teams/One Note
- lab - online via Microsoft Teams/OneNote
- recitation - in-person or online (students will alternate weeks, as assigned by your TA); students in 11500OL will all attend recitation online

The four instructors listed on the cover page will share in teaching the 10 units in the course. See the lecture schedule on pp. 14-15. Each lab and recitation section will be taught by a teaching assistant (TA). You will have the same TA for recitation and lab. Most TAs are graduate students in Chemistry.

**Protect Purdue Pledge**
“Being a part of the Boilermaker community means that each of us must take extraordinary steps to stay well and persistently protect each other, on campus and in the community. Accountable together, I pledge to take responsibility for my own health, the protection of others and help keep the Purdue community safe from spread of COVID-19 and other infections as identified and instructed by the university.” [https://protect.purdue.edu/pledge/](https://protect.purdue.edu/pledge/)

The Protect Purdue Plan, which includes the Protect Purdue Pledge, is campus policy and as such all members of the Purdue community must comply with the required health and safety guidelines. Required behaviors in this class include:

- staying home and contacting the Protect Purdue Health Center (765-496-INFO) if you feel ill or know you have been exposed to the virus,
- wearing a mask in classrooms and campus building, at all times (e.g., no eating/drinking in the classroom),
- disinfecting desk/workspace prior to and after use,
- maintaining proper social distancing with peers and instructors (including when entering/exiting classrooms),
- refraining from moving furniture,
- avoiding shared use of personal items,
- maintaining robust hygiene (e.g., handwashing, disposal of tissues) prior to, during and after class,
- and following all safety directions from the instructor.
Students who are not engaging in these behaviors (e.g., wearing a mask) will be offered the opportunity to comply. If non-compliance continues, possible results include instructors asking the student to leave class and instructors dismissing the whole class. Students who do not comply with the required health behaviors are violating the University Code of Conduct and will be reported to the Dean of Students Office with sanctions ranging from educational requirements to dismissal from the university.

Any student who has substantial reason to believe that another person in a campus room (e.g., classroom) is threatening the safety of others by not complying (e.g., not wearing a mask) may leave the room without consequence. The student is encouraged to report the behavior to and discuss next steps with their instructor. Students also have the option of reporting the behavior to the Office of the Student Rights and Responsibilities (https://www.purdue.edu/odos/osrr/).


**Mental Health**
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 and http://www.purdue.edu/caps/ during and after hours, on weekends and holidays, or by going to the CAPS office of the second floor of the Purdue University Student Health Center (PUSH) during business hours.

If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try WellTrack, https://purdue.welltrack.com/. 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, please see the Office of the Dean of Students, http://www.purdue.edu/odos, for walk-in hours (M – F, 8 am – 5 pm).

**Diversity Statement**
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, countries of origin, disabilities, education, ethnicities, family status, genders, military experiences, political views, races, religions, sexual orientations, socioeconomic status, and work experiences. See: http://www.purdue.edu/diversity-inclusion/

**Disability Accommodations**
If you require accommodations to access course activities or materials, the accommodations must be described and approved by the Disability Resource Center, Young Hall Room 830, 302 Wood Street, 765-494-1247, www.purdue.edu/drc. To implement accommodations, you must follow the instructions in the letter provided by the Disability Resource Center, in addition to doing the following.

Within the first three (3) weeks of the semester or within one week of the date of the letter, you are required to (1) electronically share a copy of your letter with the General Chemistry office (genchem@purdue.edu) or (2) schedule an appointment via email (genchem@purdue.edu) or (3) take a copy of your letter to the General Chemistry Office (BRWN 1144) during walk-in hours to discuss your accommodations. Implementation of accommodations may not be possible if insufficient notification is given.
Emergencies

In the event of a major campus emergency, course requirements, deadlines, and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor’s control. Relevant changes to CHM 11500 will be posted on Brightspace and shared via announcements and email.

You are expected to read your Purdue email on a frequent basis.

“Shelter in Place” means seeking immediate shelter inside a building or University residence. This course of action may need to be taken during a tornado, earthquake, release of hazardous materials in the outside air, active shooter, building intruder, or a civil disturbance. If you hear the All Hazards Outdoors Emergency Warning Sirens or are notified via text or other means, immediately go inside a building to a safe location and use all communication means available to find out more details about the emergency. Remain in place until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave. There is no “all safe siren;” the notification will come via text, internet, or email announcement.

Purdue’s Honor 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](https://www.purdue.edu/provost/teachinglearning/honor-pledge.html)

Academic Integrity

All students are expected to be familiar with Purdue’s policies on academic integrity ([https://www.purdue.edu/odos/academic-integrity/](https://www.purdue.edu/odos/academic-integrity/)).

“Dishonesty in connection with any University activity may result in informal action or disciplinary sanctions. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty. The commitment of acts of cheating, lying, stealing, and deceit in any of their diverse forms (such as the use of ghost-written papers, the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest.” From University Senate Document 72-18.

In CHM 11500, academic integrity means “doing your own work” at all times. Discussion of chemical concepts 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 the material and is considered academic dishonesty.

Online quizzes and exams in CHM 11500 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 or exam is prohibited.

Using online resources such as Chegg to gain answers to any graded assignment (including homework, labs, quizzes and exams) is not allowed. Posting course materials to websites is a violation of copyright laws and is not allowed. The CHM 11500 instructors can obtain user information from Chegg and other sites when inappropriate course material is posted. This information will be investigated.
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. All 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.

This course packet is a contract between CHM 11500 students and instructors. If a student violates the contract by committing an act of academic dishonesty, the instructor reserves the right to alter the terms of the contract (including grading policies) at his/her discretion.

Students who observe an issue of academic integrity can report it to the Office of the Dean of Students (https://www.purdue.edu/odos/ - use the General Incident Report to report anonymously), call 765-494-8778 or email integrity@purdue.edu.

**Required Materials**

**Textbook:** The textbook used in CHM 11500 is *Chemistry: The Molecular Nature of Matter and Change*, 9th edition, by Silberberg and Amateis. There are several options available for purchasing a paper and/or electronic version of the book. See Brightspace for further information.

**Sapling Learning:** In CHM 11500, you are required to complete homework and quizzes online using the Sapling program. You can purchase instant access via the link on Brightspace or you can purchase a code from a local bookstore that you can then redeem via the link on Brightspace.

**Digital Laboratory Notebook:** Lab instructions, videos, and report forms will be provided on Microsoft Teams/OneNote. A link for purchasing the Digital Laboratory Notebook will be provided on Brightspace. You can download the Teams/OneNote programs for free. Go to https://www.itap.purdue.edu/shopping/software/product/office365.html and log in using your Purdue account to install the free Office 365 Suite software onto your personal computer.

**Weekly Assignments** (Refer to the course schedule on pp. 14-15 or on Brightspace and the Weekly Assignments and Due Dates listing on p. 16.):

- Do the reading assignment for lecture (see the lecture schedule on pp. 14-15 or refer to the lecture postings on Teams).
- Watch the lecture recordings for the week on Teams.
- Attend recitation in-person in your assigned weeks or join recitation virtually on Teams, or watch the recitation recording on Teams if you are in 11500OL.
- Complete your homework assignment on Sapling (in Weeks 3, 4, 6, 7, 9, 10, 12, 13, 14, and 15).
- Prepare for lab by reading the relevant lab information on Teams/OneNote.
- Complete the pre-lab assignment on Brightspace.
- Take the unit quiz on Sapling (in Weeks 3, 4, 6, 7, 9, 10, 12, 13, 14, and 15).
- Complete the lab report on OneNote.
- Complete the post-lab assignment on Brightspace.
- Work on optional Extra Credit assignments (Learning Curve through Sapling, linked on Brightspace).
Week 1 Assignments:

- Read all the information in this course packet.
- Purchase required materials including the Digital Lab Manual and Sapling (see above).
- Install Office 365 on your personal computer and join the Team for CHM 11500 lectures and the OneNote notebook for your lab section.
- Read the textbook reading assignment, listed in on pp. 14-15 or posted with the lecture recordings in Teams.
- Watch lecture recordings.
- Attend recitation or join virtually on Teams.
- Begin working on Lab 0, including the pre-lab and post-lab assignments.

Late Registration:
If you register late, notify the course coordinator Marybeth Miller (mille201@purdue.edu) no later than Fri. Sept. 11 to see about the possibility of making up missed assignments.

Overview of CHM 11500 Activities and Policies

How to Study for CHM 11500
It will take you at least two hours on your own for every hour we spend online in order to study and learn the material. This means you will spend about 8-12 hours of distraction-free studying and working with chemistry each week. You may spend this time reviewing and annotating your lecture notes, reading the text, doing homework, working practice problems, studying for quizzes, or other things. You may find yourself spending more than 8-12 hours per week if your math skills need improvement or if it has been a few years since you took a chemistry course. If you are committed to your goals and dreams, then dedicate yourself to spending the necessary time to perform well.

Before Viewing Lecture Recordings
- Review your notes from the previous class.
- Review the assigned reading and read the sample problems within the assigned section of the textbook.

Use the textbook in ways that work best for you.
- Use the textbook as a reference when you study your lecture notes. Fill in any gaps and correct any information.
- Processing technical information will be more effective in the absence of social media, TVs, radios, headphones, etc. Turn your phone on silent and set it aside.
- With technical material, the subheadings often carry important information. This is different from the chapter headings in a novel that usually contain no information.
- Read technical material (like your Chemistry textbook) differently than you would read a novel. Read in short “chunks” and give yourself time to reflect and interpret the information presented. With technical material, it is often difficult to pick up the “story” in the second paragraph if you did not process the first paragraph.
- Try the problems in the book without looking at the solutions! If you have understood what you have read, then you should be able to do the problems. First, cover the solution and try the problem. Second, quickly look at the answer to see if you are correct. If your answer is incorrect, try re-reading the section to see if you missed anything. Third, look at your work again to find your mistake. Fourth, look at the solution of the problem presented in the book. The key is to force yourself to recall and apply material.
While Watching Lecture Recordings
• Take notes!
• Write down each step of every problem or example even if you do not understand the step. You can always ask about it later.
• Try to answer all the questions and work all the problems that the professor presents.
• Write a question mark next to things you don't understand so you can return to them later.
• Use shorthand or abbreviations so that you can write quickly, but understandably.
• Turn off distractions (i.e. TV, other HW, social media, etc.).
• Keep up with lecture recordings. Chemistry is cumulative. What is presented tomorrow depends upon your knowledge of what was covered today.
• Turn on closed captioning to help ensure your correctly hear what your instructor is saying.

After Watching Lecture Recordings
• Review your notes while things are still fresh in your mind.
• Re-watch parts of the lecture recording to fill in gaps.
• Attend virtual office hours held by course instructors and teaching assistants (TA) on Teams to ask questions and get help. See the office hours schedules in the Resources section of Brightspace.

When Should I do the Homework?
• Do some work in chemistry every day. Work at least two chemistry problems each day. If you are drawing a blank about the problem after 5-10 minutes, go on to another a problem. After a day or so, work related problems in the textbook.
• Review your class notes and the assigned pages in the textbook before you attempt any of your homework problems.
• Seek help from a TA during recitation, office hours or scheduled online meetings.

Practice, Practice, Practice
• Work additional problems at the end of each chapter that were not assigned as homework.
• Look for similarities and differences in problems (homework questions, lecture examples). Classify problems by the type of knowledge that is needed to solve the problem.

Sources of Help
There are several free sources of help for CHM 11500 students. See the Resources section on the course Brightspace page for details. Each instructor will hold office hours on Teams three times per week during the units they are teaching, up through the date of the quiz for that unit. Each TA will hold an office hour on Teams each week. You may attend the office hours of any TA in this course. Detailed schedules of instructor and TA office hours will be posted on Brightspace.

Supplemental Instruction (SI, www.purdue.edu/SI) is offered for CHM 11500. Please visit Brightspace to access information about connecting with SI sessions for your course(s).

Reading Assignments and Learning Objectives
• Reading assignments are listed on pp. 14-15 and will also be provided with the lecture recordings on Teams. Reviewing the assigned material prior to lecture and laboratory is recommended. Some of the material will be covered in lecture and some on your own.
• Learning Objectives list the concepts you are expected to understand and the skills (calculations) you are expected to demonstrate for each topic covered in the course. Quiz questions will be based on the Learning Objectives.
Lectures
- CHM 11500 lectures will be recorded and posted on the OneNote notebook of the Teams section called CoS-CHM 11500-Lecture-All. Links will be posted on Brightspace.
- The course consists of 10 units. Each unit will each be presented by a particular instructor - see the course schedule on pp. 14-15. There will be a homework assignment and a quiz that accompanies each unit. Details follow in later sections of this packet.
- Lectures will be released one unit at a time.
- You can watch the lecture recordings and/or you can view the instructor’s notes in a static format.
- If you have questions, please bring them to your recitation and office hours, or schedule an online meeting with the course instructor or TA.

Recitation
- Weekly recitation provides the opportunity for you to ask questions, work problems, and prepare for the laboratory exercise that you will do in the following week. You will also review lecture topics, as time allows. Your questions are always the first agenda item, so come prepared.
- Recitation sessions are held according to your class schedule. You will attend in-person every other week, as directed by your TA. In the weeks you don’t attend in person, you will join the class virtually using Teams. Students in 11500OL will attend recitation using Teams.
- Recitations will be recorded on Teams. If you cannot attend the recitation synchronously, you may watch the recitation video recordings and contact your TA afterward with questions. You will not be penalized for choosing to watch the recording instead of attending recitation virtually or in-person. However, you should keep up with the recitation content on a weekly basis.
- Bring with you (if in-person) or have handy (if online), your textbook, lab materials, homework, calculators and/or any questions you have regarding the course.
- Note that it is not your TA’s responsibility to provide you with answers to homework, pre-lab, or post-lab problems. Rather, they are expected to guide you to the correct solutions, help you identify mistakes, and add details to help you further understand concepts.
- When you attend recitation in-person, you are required to wear a mask and follow all Protect Purdue guidelines. See pp. 2-3.

Homework (Sapling)
- In Weeks 3, 4, 6, 7, 9, 10, 12, 13, 14, and 15 you will have a homework assignment on the Sapling platform, usually due on Mondays by 11:59 PM. All links and due dates are in the Homework module on Brightspace.
- You will have five attempts for each question in an assignment. There is no penalty for failed attempts.
- Each homework assignment is worth 15 points. The one lowest homework score will be dropped at the end of the semester.
- No time extensions are possible for any homework assignments. Allow plenty of time to do your homework and get the highest possible score. If you wait until the last minute, you risk the possibility of technical difficulties, illness, or other situations interfering with your success.
- Quizzes are likely to include questions taken from homework assignments.
- For help with technical issues, contact Sapling customer service at 1-800-936-6899 or use the online form at https://macmillan.force.com/macmillanlearning/s/contactsupport. Chrome is the recommended browser for Sapling.

**Laboratory**

Laboratory projects are an integral part of CHM 11500 and are an opportunity for you to experience the chemical concepts discussed in lecture in a practical way. Laboratory instructions, materials, and reports will be posted on a Teams/OneNote site specific to your lab section. Pre-lab and post-lab assignments will be completed on Brightspace.

**Pre-Lab Assignments**
- The purpose of the pre-lab assignment on Brightspace is to help you become familiar with the key concepts and procedure of the lab.
- For the best chance of success, complete the pre-lab assignment (on Brightspace) *after* reading the lab materials on OneNote *and* attending recitation. You are encouraged to access lab materials and notes while completing the assignment.
- Discussion of the pre-lab assignment with your peers is encouraged, however you must do your own work (i.e. you should not copy each other’s answers).
- You have 2 attempts to complete the assignment. The attempt with the highest score will be counted.
- Pre-lab assignments are due each week on Tuesdays by 11:59 PM.

**Lab Reports (“In-Lab”)**
- For each lab project, you will complete an individual lab report on OneNote.
- Complete the lab report appropriately:
  - Answer in full sentences for open-ended questions.
  - Make sure your handwriting is clear and legible if you are using a stylus on a tablet or uploading photos of your handwritten notes.
  - Enter your answer(s) in the space(s) provided.
  - Label graphs and tables clearly.
  - Show calculation steps clearly for mathematical questions.
  - Show the use of correct units of measurement and significant figures.
  - Ensure results and conclusions are consistent with your data and observations.
- You are encouraged to access lab materials and notes while completing the reports. Also, you may discuss your report with peers and your TA, however you must do your own work (i.e. you should not copy each other’s answers).
- Lab reports are due each week on Fridays by 11:59 PM. Do not wait until the last minute to submit your lab report, in case technical difficulties occur.

**Post-Lab Assignments**
- For each lab project, you will complete a post-lab assignment on Brightspace that for most labs will consist of calculations related to the lab.
- You will have 2 attempts for each question in the assignment. The attempt with the highest score will be counted.
• Post-lab assignments will be due each week on Sundays by 11:59 PM.

Lab Grades
• Lab grades are the sum of your pre-lab assignment (Brightspace), lab report (OneNote), and post-lab assignment (Brightspace). Each lab project is worth 25 points in total. The two lowest lab grades will be dropped at the end of the semester.
• Graded lab reports will be available for viewing in OneNote approximately one week after submission. You are encouraged to review the graded work as your TA may have left useful feedback for your future improvement. If you have questions about a lab grade, speak with your TA or Marybeth Miller within one week of the graded report being made available to you.
• Make sure you review lab content because the quizzes will include lab-related questions.

Quizzes
Quizzes are a chance for you to demonstrate your comprehension of the course material. There will be 10 quizzes this semester, one for each lecture unit. See the schedule on pp. 14-15 and on Brightspace.

Quizzes:
• are worth 50 points each
• consist of multiple-choice and numeric entry (calculations) questions
• have one attempt, i.e., must be completed in one sitting; do not start the quiz until you are ready
• have a 60 minute time limit. (Slightly more time than you need is provided in case of connectivity issues. Students will extended time through the DRC will be accommodated.)
• are usually open/available for a 24 hour period, i.e., 12:00 am midnight – 11:59 pm (EDT). This time period may be adjusted due to course circumstances.
• usually due on Wednesdays by 11:59 PM

• Quizzes are open book and open note, however all collaboration with others (such as Group Me, Zoom, Chegg, discussion boards, internet searches, text, in-person, etc.) during a quiz is prohibited. Consequences of academic integrity violations can include failing the course and in some cases removal from the university.
• The 2 lowest quiz scores (or final exam score) will be dropped (i.e. not included in your total points) at the end of the semester.
• Zero scores caused by absences that are GAPS/MAPS/COVID diagnosis-related will be handled individually. See pp. 12-13. Contact Marybeth Miller (mille201@purdue.edu) with questions.

Final Exam
The final exam is comprehensive and is worth 100 points. The format of the final exam will be communicated to you during the semester.

The final exam is open book and open note, however all collaboration with others (such as Group Me, Zoom, Chegg, discussion boards, internet searches, text, in-person, etc.) during an exam is prohibited. Consequences of academic integrity violations can include failing the course and in some cases removal from the university.
If your final exam score divided in half is less than any of your quiz scores, then your final exam score will be dropped (i.e. not included in your total points).

**Determining Your Course Grade**

Each of the assigned course activities for CHM 11500 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 one lowest homework score
- your one lowest lab score (lab total, i.e. pre-lab + report + post-lab)
- your two lowest quiz scores or final exam score

The total number of points for CHM 11500 will be distributed as follows:

- Homework: 135 pts (best 9 of 10 assignments at 15 pts each)
- Labs: 240 pts (best 9 of 11 (Labs 1-11) at 25 pts each plus Lab 0 (15 pts))
- Quizzes: 500 pts (10 at 50 pts each)
- Final Exam: 100 pts (comprehensive)

Sub-total: 975 pts

Dropped quiz/exam: -100 pts (drop 2 lowest quiz scores or final exam score, whichever is less)

Total: 875 pts

Extra Credit: 20 pts (Learning Curve assignments on Sapling, scaled to 20 points total)

The total points available for quizzes/exams is 500. Your exam total will be determined as follows: Your points earned on the Final Exam will be divided in half and considered as separate scores, F1 and F2. These scores will be compared with your scores on quizzes 1-10 (Q1-Q10) and the two lowest of these scores will be dropped (i.e., not counted into your total points). The remaining 10 scores will comprise your quiz/exam total.

Up to 20 points of extra credit will be available for completing Learning Curve assignments using the Sapling system.

At the end of the semester, the total scores for all students will be arranged in numerical order, the score that corresponds to either the 99th percentile ($S_{99}$) will be determined, and then letter grades will be assigned based on this percentile score as follows:

- A: $\text{Total Score} \geq 0.93 \times S_{99}$
- A−: $0.90 \times S_{99} \leq \text{Total Score} < 0.93 \times S_{99}$
- B+: $0.86 \times S_{99} \leq \text{Total Score} < 0.90 \times S_{99}$
- B: $0.83 \times S_{99} \leq \text{Total Score} < 0.86 \times S_{99}$
- B−: $0.80 \times S_{99} \leq \text{Total Score} < 0.83 \times S_{99}$
- C+: $0.76 \times S_{99} \leq \text{Total Score} < 0.80 \times S_{99}$
- C: $0.73 \times S_{99} \leq \text{Total Score} < 0.76 \times S_{99}$
- C−: $0.70 \times S_{99} \leq \text{Total Score} < 0.73 \times S_{99}$
- D+: $0.66 \times S_{99} \leq \text{Total Score} < 0.70 \times S_{99}$
- D: $0.63 \times S_{99} \leq \text{Total Score} < 0.66 \times S_{99}$
- D−: $0.60 \times S_{99} \leq \text{Total Score} < 0.63 \times S_{99}$
- F: $\text{Total Score} < 0.60 \times S_{99}$
This system has several advantages:
- Unlike a curved scale, it encourages cooperation among students because NO student is penalized when another is successful.
- Unlike an absolute scale, it tends to neutralize the effects of differences from one semester to another and thereby ensures that the same criteria are used to assign grades from one semester to another.

This approach to grading means that the grade you get in this course depends primarily on your own effort and performance. It also ensures that all students who do well in the course will get good grades.

- Each month, your total points will be calculated and tentative grade cutoffs will be posted so that you can see how well you are doing in the course. Note that these tentative grade cutoffs will be based on an absolute grading scale (i.e., the adjustment for the 99th percentile will not be included).

- Check all your grades on Brightspace regularly. If there are any errors or discrepancies, notify the Course Coordinator, Marybeth Miller, within 2 weeks of a grade update being announced.

- Save all returned graded papers until after you have received your course letter grade for CHM 11500. To resolve any discrepancies, your paper(s) will need to be reviewed.

---

**UNIVERSITY AND COURSE POLICIES**

**Attendance and Absences**

Students should stay home and contact the Protect Purdue Health Center (765-496-INFO) if they feel ill, have any symptoms associated with COVID-19, or suspect they have been exposed to the virus. In the current context of COVID-19, in-person attendance will not be a factor in the final grades, but the student still needs to inform the instructor of any conflict that can be anticipated and will affect the submission of an assignment or the ability to take an exam.

If you become quarantined or isolated at any point in time during the semester, in addition to support from the Protect Purdue Health Center, you will also have access to an Academic Case Manager who can provide you academic support during this time. Your Academic Case Manager can be reached at acmg@purdue.edu and will provide you with general guidelines/resources around communicating with your instructors, be available for academic support, and offer suggestions for how to be successful when learning remotely. Importantly, if you find yourself too sick to progress in the course, notify your academic case manager and notify Marybeth Miller (mille201@purdue.edu). We will make arrangements based on your particular situation. The Office of the Dean of Students (odos@purdue.edu) is also available to support you should this situation occur.

Only the instructor can excuse a student from a course requirement or responsibility. When conflicts can be anticipated, such as for many University-sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible. For unanticipated or emergency conflict, when advance notification to an instructor is not possible, the student should contact Marybeth Miller (mille201@purdue.edu) as soon as possible.

When the student is unable to make direct contact with the instructor and is unable to leave word with the instructor’s department because of circumstances beyond the student’s control, and in
cases of bereavement, quarantine, or isolation, the student or the student’s representative should contact the Office of the Dean of Students via email (odos@purdue.edu) or phone at 765-494-1747.

The lowest score or scores in each category (lab, HW, or quiz) is dropped at the end of the semester to account for absences due to illnesses, trips, conflicts or other situations that are not excused absences. This includes internet or related technology issues that may have prevented you from completing a lab, homework, or quiz. If you have concerns about how an absence will affect your course grade, contact your instructor or Marybeth Miller at the time of the absence.

Absence accommodations approved by the Disability Resource Center will be handled individually. Contact the General Chemistry office (genchem@purdue.edu) for more information.

Verified grief, military, and COVID-19 absences are the only excused absences in CHM 11500.

**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 (ODOS) at 765-494-1747. Scores for any missed assignments covered under a verified GAPS absence will be pro-rated (assigned a score based on your average grade for that type of assignment). Contact Marybeth Miller for more information.

**Military Absence Policy for Students (MAPS)**
If you are required to complete mandatory military training, notify the ODOS to request that a notice of the leave be sent to instructors. Scores for any missed assignments covered under a verified GAPS absence will be pro-rated (assigned a score based on your average grade for that type of assignment). Contact Marybeth Miller for more information.

**Adding/ Dropping/Changing Sections**

<table>
<thead>
<tr>
<th>CHEMISTRY DEPARTMENT DEADLINES FOR ADDING OR SWITCHING SECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fri. Aug. 28:</strong> last day to add CHM 11500 or switch lab sections <em>without</em> instructor approval</td>
</tr>
</tbody>
</table>
| **Fri. Sept. 11:**  
| last day to switch lab sections *with* instructor approval*;  
| last day to add CHM 11500 with instructor approval* if *not* already enrolled in another CHM course |
| **Fri. Sept. 18:** last day to switch from another CHM course to CHM 11500 *with* instructor approval* |

**UNIVERSITY DROP DEADLINES**

| Mon. Sept. 4: Last day to drop (cancel) a course via MyPurdue without it appearing on your record. |
| Mon. Sept. 18: Last day to drop (cancel) a course with a grade of “W.” * |
| Mon. Oct. 26: Last day to drop (cancel) a course (with a passing or failing grade). * |

*If you use a paper Add/Drop form (Form 023), it must be signed by your advisor and delivered to the General Chemistry Office, to obtain a signature for the instructor. See cover page for General Chemistry Office hours and contact information.

**Late Registration:** If you register late, notify the course coordinator no later than **Fri. Sept. 11** to see about the possibility of making up missed assignments.
<table>
<thead>
<tr>
<th>Week #</th>
<th>Week of</th>
<th>Unit</th>
<th>Unit.Lec</th>
<th>Lecture Topic</th>
<th>Reading Assignment</th>
<th>Instructor</th>
<th>Recitation Topics</th>
<th>Lab (part of unit #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24-Aug</td>
<td>Unit 1</td>
<td>1.1-1.7</td>
<td>Introduction to CHM 11500</td>
<td>Review Topics</td>
<td>Course Packet 1.3-1.4, 2.2-2.3, 2.5-2.8, 3.1, 3.3 3.4, 4.1-4.3</td>
<td>all instructors</td>
<td>Intro to 11500; meet your TA</td>
</tr>
<tr>
<td>2</td>
<td>31-Aug</td>
<td>Unit 2</td>
<td>2.1</td>
<td>Nuclear Chem 1</td>
<td>24.1</td>
<td>Dr. Ren</td>
<td>Lab 1; Unit 1</td>
<td>Lab 0: Intro to Labs in OneNote (Unit 1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.2</td>
<td>Nuclear Chem 2</td>
<td>24.2</td>
<td>Dr. Ren</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>7-Sep</td>
<td>Unit 3</td>
<td>2.3</td>
<td>Nuclear Chem 3</td>
<td>24.6-24.7</td>
<td>Dr. Ren</td>
<td>Lab 2; Unit 2</td>
<td>Lab 1: Do You See the Light? (Unit 2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.1</td>
<td>Thermochemistry 1</td>
<td>6.1-6.2</td>
<td>Dr. Ren</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>17-Sep</td>
<td>Unit 3</td>
<td>3.2</td>
<td>Thermochemistry 2</td>
<td>6.3-6.4</td>
<td>Dr. Ren</td>
<td>Lab 3; Unit 3</td>
<td>Lab 2: What Variables Affect Heat of Reaction? (Unit 3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.3</td>
<td>Thermochemistry 3</td>
<td>6.5-6.6</td>
<td>Dr. Ren</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>21-Sep</td>
<td>Unit 4</td>
<td>4.1</td>
<td>Quantum Theory/Atomic Structure 1</td>
<td>7.1-7.4</td>
<td>Dr. Rienstra-Kiracofe (Dr. RK)</td>
<td>Lab 4; Unit 3</td>
<td>Lab 3: How Can We Determine a Molecular Formula? (Unit 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.2</td>
<td>Quantum Theory/Atomic Structure 2</td>
<td>7.1-7.4</td>
<td>Dr. RK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>28-Sep</td>
<td>Unit 5</td>
<td>4.3</td>
<td>UV/Vis Spectroscopy &amp; Concentration Terms</td>
<td>pp. 308-9; 4.1</td>
<td>Dr. RK</td>
<td>Lab 5; Unit 4</td>
<td>Lab 4: How Can We Use Physical Property to Develop a Separation Method? (Unit 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.1</td>
<td>Periodic Trends/Trends in Chemical Reactivity 1</td>
<td>8.1-8.2</td>
<td>Dr. RK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5-Oct</td>
<td>Unit 5</td>
<td>5.2</td>
<td>Periodic Trends/Trends in Chemical Reactivity 2</td>
<td>8.1-8.2</td>
<td>Dr. RK</td>
<td>Lab 6; Unit 5</td>
<td>Lab 5: How Can We Produce a Salt from an Element? (Unit 5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.3</td>
<td>Periodic Trends/Trends in Chemical Reactivity 3</td>
<td>8.3-8.4</td>
<td>Dr. RK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>12-Oct</td>
<td>Unit 6</td>
<td>6.1</td>
<td>Compounds; Models of Bonding 1</td>
<td>2.7-2.8, 9.1-9.2</td>
<td>Dr. RK</td>
<td>Lab 7; Unit 5</td>
<td>Lab 6: How Can Absorption of Light Be Used To Determine Concentration? (Unit 6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.2</td>
<td>Models of Bonding 2</td>
<td>9.3-9.4</td>
<td>Dr. RK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week #</td>
<td>Week of</td>
<td>Unit</td>
<td>Unit.Lec</td>
<td>Lecture Topic</td>
<td>Reading Assignment</td>
<td>Instructor</td>
<td>Recitation Topics</td>
<td>Lab</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>--------</td>
<td>----------</td>
<td>---------------------------------------------------</td>
<td>--------------------</td>
<td>------------</td>
<td>-------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>19-Oct</td>
<td>Unit 6</td>
<td>6.3</td>
<td>Models of Bonding 3</td>
<td>9.5-9.6</td>
<td>Dr. RK</td>
<td></td>
<td>Lab 8; Unit 6: Which Cereal Contains the Most Iron? (Unit 6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.1</td>
<td>Shapes of Molecules 1 (Lewis Structures)</td>
<td>10.1</td>
<td>Dr. Wilker</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.2</td>
<td>Shapes of Molecules 2 (VSEPR)</td>
<td>10.2</td>
<td>Dr. Wilker</td>
<td></td>
<td>Lab 9; Unit 7: How Does Molecular Shape Affect Polarity? (Unit 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.3</td>
<td>Shapes of Molecules 3 (Molecular Polarity)</td>
<td>10.3</td>
<td>Dr. Wilker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>26-Oct</td>
<td>Unit 7</td>
<td>7.1</td>
<td>Shapes of Molecules 1 (Lewis Structures)</td>
<td>10.1</td>
<td>Dr. Wilker</td>
<td></td>
<td>Lab 9; Unit 7: How Does Molecular Shape Affect Polarity? (Unit 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.2</td>
<td>Shapes of Molecules 2 (VSEPR)</td>
<td>10.2</td>
<td>Dr. Wilker</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.3</td>
<td>Shapes of Molecules 3 (Molecular Polarity)</td>
<td>10.3</td>
<td>Dr. Wilker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>2-Nov</td>
<td>Unit 8</td>
<td>8.1</td>
<td>Organic Chemistry 1 (hybridization)</td>
<td>11.1-11.2</td>
<td>Dr. Wilker</td>
<td></td>
<td>Lab 10; Unit 7: How Can We Use Chromatography to Separate Compounds in Plants? (Unit 8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8.2</td>
<td>Organic Chemistry 2 (hydrocarbons, isomers, functional groups)</td>
<td>15.1-15.2, 15.4</td>
<td>Dr. Wilker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>9-Nov</td>
<td>Unit 9</td>
<td>9.1</td>
<td>Intermolecular Forces 1 (types of IMF)</td>
<td>12.3</td>
<td>Dr. McLuckey</td>
<td></td>
<td>Lab 11; Unit 8: What are Synthetic and Biological Polymers? (Unit 8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9.2</td>
<td>Intermolecular Forces 2 (IMF and solubility; soaps, lipid bilayer)</td>
<td>13.1, 13.2</td>
<td>Dr. McLuckey</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9.3</td>
<td>finish IMF; start Colligative Properties of Solutions</td>
<td>13.6</td>
<td>Dr. McLuckey</td>
<td></td>
<td>Unit 9: What are the Molecular Interactions of Washing? (Unit 9)</td>
</tr>
<tr>
<td>13</td>
<td>16-Nov</td>
<td>Unit 9</td>
<td>10.1</td>
<td>Colligative Properties of Solutions</td>
<td>13.6</td>
<td>Dr. McLuckey</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10.2</td>
<td>finish Colligative Properties of Solution; Phase Changes</td>
<td>13.6, 12.2</td>
<td>Dr. McLuckey</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10.3</td>
<td>IR Spectroscopy</td>
<td>pp. 384-5</td>
<td>Dr. McLuckey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>23-Nov</td>
<td>Unit 10</td>
<td>10.1</td>
<td>Thanksgiving Break</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30-Nov</td>
<td>Unit 10</td>
<td>10.2</td>
<td>finish Colligative Properties of Solution; Phase Changes</td>
<td>13.6, 12.2</td>
<td>Dr. McLuckey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td>10.3</td>
<td>IR Spectroscopy</td>
<td>pp. 384-5</td>
<td>Dr. McLuckey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>7-Dec</td>
<td>Unit 10</td>
<td></td>
<td>Finals Week, Dec. 7 - Dec. 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week #</td>
<td>Week of</td>
<td>Sun</td>
<td>Mon</td>
<td>Tues</td>
<td>Wed</td>
<td>Thurs</td>
<td>Fri</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>-----</td>
<td>----------------</td>
<td>---------------</td>
<td>-----------</td>
<td>-------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>24-Aug</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>31-Aug</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lab 0 Report</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>7-Sep</td>
<td></td>
<td>Unit 1 HW</td>
<td>Lab 1 prelab</td>
<td>Unit 1 Quiz</td>
<td>Lab 1 Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>14-Sep</td>
<td>Lab 1 post-lab</td>
<td>Unit 2 HW</td>
<td>Lab 2 prelab</td>
<td>Unit 2 Quiz</td>
<td>Lab 2 Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>21-Sep</td>
<td>Lab 2 post-lab</td>
<td></td>
<td>Lab 3 prelab</td>
<td></td>
<td></td>
<td>Lab 3 Report</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>28-Sep</td>
<td>Lab 3 post-lab</td>
<td>Unit 3 HW</td>
<td>Lab 4 prelab</td>
<td>Unit 3 Quiz</td>
<td>Lab 4 Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5-Oct</td>
<td>Lab 4 post-lab</td>
<td>Unit 4 HW</td>
<td>Lab 5 prelab</td>
<td>Unit 4 Quiz</td>
<td>Lab 5 Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>12-Oct</td>
<td>Lab 5 post-lab</td>
<td></td>
<td>Lab 6 prelab</td>
<td></td>
<td></td>
<td>Lab 6 Report</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>19-Oct</td>
<td>Lab 6 post-lab</td>
<td>Unit 5 HW</td>
<td>Lab 7 prelab</td>
<td>Unit 5 Quiz</td>
<td>Lab 7 Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>26-Oct</td>
<td>Lab 7 post-lab</td>
<td>Unit 6 HW</td>
<td>Lab 8 prelab</td>
<td>Unit 6 Quiz</td>
<td>Lab 8 Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>2-Nov</td>
<td>Lab 8 post-lab</td>
<td></td>
<td>Lab 9 prelab</td>
<td></td>
<td></td>
<td>Lab 9 Report</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>9-Nov</td>
<td>Lab 9 post-lab</td>
<td>Unit 7 HW</td>
<td>Lab 10 prelab</td>
<td>Unit 7 Quiz</td>
<td>Lab 10 Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>16-Nov</td>
<td>Lab 10 post-lab</td>
<td>Unit 8 HW</td>
<td>Lab 11 prelab</td>
<td>Unit 8 Quiz</td>
<td>Lab 11 Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>23-Nov</td>
<td>Lab 11 post-lab</td>
<td>Unit 9 HW</td>
<td>Unit 9 Quiz</td>
<td></td>
<td>Thanksgiving Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>30-Nov</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Unit 10 HW; Unit 10 Quiz</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>7-Dec</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FINAL EXAMS WEEK - Final Exam TBA</td>
<td></td>
</tr>
</tbody>
</table>

Post-labs = Brightspace  HW = Sapling  Prelabs = Brightspace  Quizzes = Sapling  Lab Reports = OneNote