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# CHM 11510 Course Packet Fall 2025

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**Course Information: General Chemistry I.** Credit Hours: 3.00. The foundational general chemistry course for engineering, science, and some agricultural majors. Prior knowledge of chemistry is strongly suggested.

**Locations:** West Lafayette (PWL) and Indianapolis

**Instructional Modality:** Face-to-Face

**Instructors:**

Dr. Sridhar Budhi, [sbudhi@purdue.edu](mailto:sbudhi@purdue.edu)

Ms. Marybeth Miller, [mille201@purdue.edu](mailto:mille201@purdue.edu)

Dr. John Nash, [jnash@purdue.edu](mailto:jnash@purdue.edu)

Dr. Jon Rienstra-Kiracofe, [jonrk@purdue.edu](mailto:jonrk@purdue.edu)

Dr. Gudrun Schmidt, [gudrun@purdue.edu](mailto:gudrun@purdue.edu)

Dr. Garth Simpson, [gsimpson@purdue.edu](mailto:gsimpson@purdue.edu)

Office hour times and locations will be listed on Brightspace in the **Resources** module.

**Lectures** meet in-person two times per week, according to your class schedule.

**CRNs:** 15272, 15265, 15280, 15281, 15260, 31345, 31344

**Recitation:** In-person, various locations in WTHR and BRWN (PWL) and SL and ET (Purdue in Indianapolis).

Recitations meet M, T, W or F for 50 minutes, according to your class schedule.

**Prerequisites:**

**For CHM 11510 (lecture):** MA 15800 (min. D) **or** pre/coreq MA 161/165/16010 (min. D) **or** ALEKS 075 **or** SATR Math 620 **or** ACT Math 26.

**For CHM 11520 (in-person lab) or CHM 11530 (virtual lab):** CHM 11510 (min. D or taken concurrently).

It is recommended that students take the lecture (CHM 11510) and the lab (CHM 11520 or 11530) concurrently.

**Enrollment Details:**

- To enroll in the lab (CHM 11520 or 11530), students must be concurrently registered for the lecture (CHM 11510) or have already completed the lecture.
- Students who drop the lecture (CHM 11510) at any point in the semester are required to *also* drop the lab (CHM 11520 or 11530), if they do not have prior credit for the lecture (CHM 11510).
- Students can take the lecture (CHM 11510) without the lab (CHM 11520 or 11530). Students can remain in the lecture (CHM 11510) if they drop the lab (CHM 11520/11530).

**Email Communication, [CHM11510LEC@purdue.edu](mailto:CHM11510LEC@purdue.edu)**

To avoid wasted time and duplicated effort, please do not email multiple course or university personnel *individually* about the same issue, rather send *one* email to [CHM11510LEC@purdue.edu](mailto:CHM11510LEC@purdue.edu). Allow up to two business days (M-F, 8 AM - 5 PM) for a response from your instructor, course coordinator, head TA or TA. In general, we will *not* answer emails after business hours (M-F, 8 AM - 5 PM). Please be patient in awaiting a response.

► **Late Registration:** If you register late or experience dropped enrollment, causing you to miss assignments, email [CHM11510LEC@purdue.edu](mailto:CHM11510LEC@purdue.edu) no later than **Fri. Sept. 12** (end of Week 3) to request make-up assignments or deadline extensions.

CHEMISTRY DEPARTMENT DEADLINES FOR ADDING OR SWITCHING SECTIONS

**Fri. Aug. 29 (end of Week 1):** last day to add CHM 11510 or switch lecture or recitation sections *without* instructor approval

**Fri. Sept. 12 (end of Week 3):** last day to add CHM 11510 or switch sections *with* instructor approval\*

**Fri. Sept. 19 (end of Week 4):** last day to switch from another CHM course to CHM 11510 *with* instructor approval\*

*\*Submit request using Scheduling Assistant.*

UNIVERSITY DROP DEADLINES

**Fri. Sept. 8 (end of Week 2):** last day to drop (cancel) CHM 11510 via MyPurdue without it appearing on your record. **NOTE: If you drop CHM 11510, you must also drop CHM 11520.**

**Tues. Nov. 25:** last day to drop (cancel) CHM 11510 with a 'W'\*. **NOTE: If you drop CHM 11510, you must also drop CHM 11520.**

*\*Submit request using Scheduling Assistant.*

**Course Support Personnel**

**Course Coordinator:** Marybeth Miller, Course Coordinator, BRWN 1144D, [mille201@purdue.edu](mailto:mille201@purdue.edu), supervises the teaching assistants, manages administrative aspects of the course, and maintains all the grade records for the course.

**Assistant Course Coordinator:** Samantha Schmidt, [schmi380@purdue.edu](mailto:schmi380@purdue.edu), provides administrative support for recitation and other course components, and serves as a resource for teaching assistants.

**General Chemistry Office, BRWN 1144, [genchem@purdue.edu](mailto:genchem@purdue.edu)**

Melissa Roadruck, Administrative Assistant, BRWN 1144, 765-494-5252, [melissa@purdue.edu](mailto:melissa@purdue.edu)

Marlene Miller, Administrative Assistant, working remotely, [marlenem@purdue.edu](mailto:marlenem@purdue.edu)

The General Chemistry Office handles all the administrative details associated with the course. Direct all non-chemistry questions about the course to this office.

**Course Description**

Chemistry 11510 is the foundational general chemistry course for engineering, science, and some agricultural majors. The stated minimum prerequisite for CHM 11510 is one year of algebra and one year of chemistry. We—the professors, course coordinator, teaching assistants, and administrative assistants—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, grading, and other course policies and procedures.

At the beginning of the course, you will use several resources to review most of your high school chemistry, including units, problem solving and significant figures; components of matter; stoichiometry; solution concentration; classes of chemical reactions; and gases and kinetic-molecular theory. 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.

## **Learning Outcomes**

By the end of the course, you will be able to:

1. Demonstrate an understanding of the fundamental principles of chemistry, including atomic and molecular structure, quantum chemistry, chemical bonding, stoichiometry, thermochemistry, molecular structure and function, and the periodic chemical properties of the elements.
2. Apply the fundamental principles of chemistry to life sciences, the environment, materials, engineering, and emerging technological fields of chemistry, as well as to everyday situations.
3. Use chemistry theory to predict and explain experimental data.
4. Think and function as a scientist by using critical thinking and analytical inquiry.
5. Apply basic scientific, quantitative, and technological methods and knowledge of nature to the solution of chemistry problems.
6. Use the scientific method and theories to analyze chemistry questions.
7. Provide scientific explanations of the nature of chemical systems.

## **Foundational Core**

CHM 11510 meets the science requirement of the university's foundational core.

## **Learning Management System**

Brightspace (<https://purdue.brightspace.com/d2l/login>) is the primary course management site for the course. Assignments, announcements, lecture slides, course materials, learning objectives, grades, and other course information will be posted on Brightspace.

## **Weekly Assignments**

During *most* weeks, you will have the following assignments:

Item	Platform	Day	Time
Homework	Achieve	Wednesdays	due 11:59 PM
Pre-Recitation Quiz	Gradescope	varies	24 hrs before your recitation
Post-Recitation Quiz	Achieve	Sundays	due 11:59 PM

All assignments will be listed or linked on the course Brightspace page. Refer to details in the relevant sections that follow. Changes will be announced on Brightspace.

## **Required Materials**

**Textbook:** The textbook used in CHM 11510 is *Chemistry: The Molecular Nature of Matter and Change*, 10<sup>th</sup> edition, by Silberberg and Amateis. There are several options available for purchasing a paper and/or electronic version of the book, including purchasing a loose-leaf version with eBook directly from McGraw-Hill for \$59.13 plus tax. You can choose whatever format (print, eBook, etc.) works best for you. See Brightspace for further information.

**Achieve:** In CHM 11510, you are required to complete homework online using the Macmillan Achieve program. You can purchase instant access via the link on Brightspace (\$41.99 for 1 term access or \$63.99 for 2 term access) or you can purchase a code from a local bookstore that you can then redeem via the link on Brightspace. **You must register for Achieve using your [purdue.edu](mailto:purdue.edu) email address.** Macmillan Customer Service can be reached at 1-800-936-6899 or <https://mhe.my.site.com/macmillanlearning/s/chat-with-us>.

**iClicker Cloud** You will use the free iClicker Cloud app in lecture. Refer to the [Lecture](#) module on Brightspace for instructions.

**Office 365** 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.

**Calculator:** You may only use a simple, scientific calculator on exams. Calculators that can graph or solve or store equations are *not* allowed. See Brightspace ([Exam Information](#)) for details.

### **Resources (Sources of Help)**

Course resources are linked in the [Resources](#) module on Brightspace and are listed below.

- Office hours: Instructors and TAs will hold office hours each week, either in person or online. You may attend the office hours of any TA in this course. Detailed schedules will be posted on Brightspace in the [Resources](#) module.
- Supplemental Instruction (SI, [www.purdue.edu/SI](http://www.purdue.edu/SI)) is offered for CHM 11510 at PWL. Please visit Brightspace to access information about connecting with SI sessions and SI leader office hours.
- Chemistry Resource Room, WTHR 117B, PWL, open to all students, [https://www.chem.purdue.edu/academic\\_programs/resource-room/index.html](https://www.chem.purdue.edu/academic_programs/resource-room/index.html).
- COSINE Tutoring Program (College of Science), offered at PWL and Purdue in Indianapolis. See [https://www.purdue.edu/science/Current\\_Students/cosine/index.html](https://www.purdue.edu/science/Current_Students/cosine/index.html) for schedule.
- Academic Success Center - PWL, <https://www.purdue.edu/asc/>; Purdue in Indianapolis, <https://www.purdue.edu/asc/indianapolis/index.html>.
- Peer-led tutoring (<https://www.purdue.edu/asc/indianapolis/tutoring.html>) is offered for CHM 11510 at Purdue in Indianapolis. Please visit Brightspace for details.
- Private tutors (not free): see list on Brightspace ([Resources](#)).

### **Reading Assignments and Learning Objectives**

- Reading assignments are listed in the schedule at the end of this packet and will also be provided in lecture and on Brightspace. Reviewing the assigned material prior to lecture 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. They are posted in the [Learning Objectives](#) module on Brightspace. Exam questions will be based on the Learning Objectives.

### **Lectures**

- Lecture attendance is essential to learn the material presented. However, do not come to lecture if you are sick, have COVID-19 symptoms, or are directed to isolate or quarantine. Lectures at PWL are recorded on Boilercast. Access instructions are provided in the [Lectures](#) module on Brightspace.
- Lecture attendance (participation) is recorded through iClicker questions answered during class. Attendance will be taken during 19 unannounced, randomly selected lectures. You'll earn 3 points for each of these lectures, and only your best 17 scores will count toward your grade. To receive credit, you must attend in person and use a mobile device or laptop (iClicker remotes are not allowed). Instructions for setting up iClicker are available in the [Lectures](#) module on Brightspace. The iClicker mobile app is free through Purdue's site license.
- An additional 1 point of extra credit will be awarded for each randomly selected lecture where you answer the iClicker question *correctly*. You may earn up to 17 total points of extra credit, which will be added to your total at the end of the semester.

- If slides are used, then student versions of lecture slides may be posted on Brightspace in the **Lectures** module. These are outlines of the lectures and are not a substitute for taking notes in lecture.
- Cell phones, computers, and other electronic devices *not being used for instruction purposes* are distracting for everyone in a learning situation. Computers can be used to take notes and follow lectures, but please respect your classmates by not using social media, texting, searching the internet, watching Netflix, etc. during class.
- Talking aloud to classmates during lecture is distracting to other students and is disrespectful to the lecturer. If you have a question please ask but otherwise remain quiet and allow the students around you the opportunity to pay attention.
- If you have questions, please attend TA or instructor office hours (see the **Resources** module on Brightspace for the schedule).

### **Recitation**

- Recitation provides the opportunity for you to ask questions and work problems with your fellow students and TA. Recitation meets 12 times during the semester. See the course schedule at the end of this packet or on Brightspace.
- Each week that recitation meets, a recitation packet will be posted on Brightspace. Before recitation, you should review the material and complete the warm-up questions.
- Each week that recitation meets, there will be a pre-recitation quiz worth 5 pts on Gradescope. It covers the material introduced in the recitation packet and is due 24 hours before your recitation meets.
- Attendance at recitation is required. However, do not come to recitation if you are sick, have COVID-19 symptoms, or are directed to isolate or quarantine. If you have an *excused absence*, follow the instructions listed in the **Absences** module of Brightspace to request a make-up assignment for recitation attendance credit.
- Recitation attendance (participation) is worth 5 points per week that recitation meets. The maximum number of points you can earn for recitation attendance is 50 (i.e., participation in 10 of the 12 recitations). You must arrive within the first 10 minutes of class for your attendance to count. Each student is entitled to one grace late arrival.
- Each week that recitation meets, you will take a post-recitation quiz (10 pts) on Achieve over some of the material you covered in recitation. It is due Sundays at 11:59 PM.
- Take your textbook, homework, calculators, and/or any questions you have regarding the course to recitation.
- Note that it is not your TA's responsibility to *provide you with answers* to homework questions. Rather, they are expected to *guide you* to the correct solutions, help you identify mistakes, and add details to help you further understand concepts.

### **Homework (Achieve)**

- You will have a weekly homework assignment on the Achieve platform, usually due on Tuesdays by 11:59 PM. All links and due dates will be in the **Homework** module on Brightspace.
- Each question allows up to five attempts. For every incorrect attempt, the score for that question is reduced by 5% of its value. *Example:* On a 20-question assignment worth 10 points, each question is worth 0.5 points. If you answer a question correctly on the third attempt (after two incorrect tries), you earn 0.45 points for that question. This policy is meant to encourage you to think carefully and do your best on your first try, rather than relying on guessing.

- Suggested strategy for solving HW problems:
  - Start by trying the problem on your own, referring to your class notes and textbook.
  - If you miss it, use Achieve's AI Tutor (see details below) - it's designed to guide your learning without giving away the answer.
  - Still stuck? Stop by office hours or check out campus resources like the Chemistry Resource Room or COSINE for extra help.
- Each homework assignment is worth 10 points. The one lowest homework score will be dropped at the end of the semester.
- Achieve includes an AI-powered personalized homework tutor that can help you approach and solve homework problems. To read tips or provide feedback about the AI Tutor, click the "Get Tips and Share Feedback" button next to the AI Tutor button in your Achieve assignment. You should always cross-check AI guidance with your own notes, textbook, and Achieve's feedback. Keep in mind that AI can sometimes provide inaccurate or incomplete information.
- No time extensions are possible for any homework assignments, except for excused absences. 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. If you have an *excused absence*, follow the instructions listed in the **Absences** module of Brightspace to request a deadline extension.
- Exams are likely to include questions taken from homework assignments. Copies of all HW assignments with unlimited attempts will be available after the due dates for study purposes.
- HW grades do not synchronize instantaneously with Brightspace. Also, do not be concerned if your grade updates before you finish the assignment. Be patient.
- If you have difficulties accessing Achieve, then try the following: (1) only access Achieve through Brightspace; (2) use Chrome; and (3) allow pop-ups.
- Macmillan Customer Service can be reached at 1-800-936-6899 or <https://mhe.my.site.com/macmillanlearning/s/chat-with-us>.

## **Exams**

Exams are a chance for you to demonstrate your understanding by answering conceptual questions and to demonstrate your skills by answering calculation questions. We aim for exams to be about half conceptual questions and about half calculation questions. Exams are worth approximately 60% of your final grade. All exam questions relate to one or more of the Learning Objectives posted on Brightspace.

Exams:

- will be on paper,
- are worth 155 points each,
- consist of multiple-choice questions and open-ended/numeric entry questions, and
- have a 60-minute time limit (unless you have extended time through the DRC),

Exam dates:

Exam	Date	Time	PWL Location	Purdue in Indianapolis Location
1	Thurs. Sept. 25	8:00 – 9:00 PM	Elliott Hall of Music	LE100, LE101
2	Wed. Oct. 22	8:00 – 9:00 PM	Elliott Hall of Music	LE100, LE101
3	Wed. Nov. 19	8:00 – 9:00 PM	Elliott Hall of Music	LE100, LE101

► If you have a conflict with another course (either a class or an exam), you *must* contact Marybeth Miller or the General Chemistry office *at least one calendar week* before the exam date to discuss your options. You may be asked to provide written verification of the conflict.

- Useful information (formulas, conversion factors, periodic table, etc.) to be provided with the exam will be posted in advance on Brightspace.
- You may only use a simple, scientific calculator on exams. Calculators that can graph or solve or store equations are not allowed. See Brightspace ([Exam Information](#) module) for details.
- Exam questions will be based on the Learning Objectives.
- You will have an assigned seat for the exams. Your seat assignment will be posted on Brightspace prior to Exam 1.
- Your lowest exam score or  $\frac{1}{2}$  your final exam score will be dropped at the end of the semester.
- If you have an excused absence and miss an exam, email Marybeth Miller as quickly as possible to arrange a make-up exam. No makeup exams are possible for *unexcused* absences.
- After all eligible students have taken the exam, we will post the key and worked solutions for numeric entry questions on Brightspace. It is important that you review your mistakes and correct misconceptions because chemistry is cumulative, and topics build on previous topics.
- You may ask questions about exam content in recitation or in TA office hours.
- If you would like to review your exam with the coordinator or your instructor, you must fill out the "Exam Debrief" form posted on Brightspace in the [Exam Information](#) module and email it to us before requesting a meeting.

### **Final Exam**

The final exam is comprehensive and is worth 310 points. The time, date and format of the final exam will be communicated to you during the semester.

Wait until you know the date of the final exam before you make travel plans that might conflict with the exam. Final exams will NOT be rescheduled to accommodate your travel plans.

University policy on Final Exams states: "*Students scheduled for **more than two** (final) examinations in one calendar day are entitled to reschedule any examination in excess of two. . . It is the responsibility of the student to make necessary arrangements **before the last week of regularly scheduled classes.***"

### **Determining Your Course Grade**

Each of the assigned course activities for CHM 11510 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 pre-recitation quiz score
- your *one (or more)* lowest recitation attendance scores (participation)
- your *one* lowest post-recitation quiz score
- your *one* lowest exam score or ½ final exam score

The total number of points for CHM 11510 will be distributed as follows:

Lecture Participation (iClicker)	51 pts	(best 17 of 19 at 3 pts each)
Homework	130 pts	(best 13 of 14 assignments at 10 pts each)
Pre-Recitation Quiz	45 pts	(best 9 of 10 assignments at 5 pts each)
Recitation Participation	50 pts	(best 10 of 12 at 5 pts each)
Post-Recitation Quiz	100 pts	(best 10 of 11 at 10 pts each)
Exams	465 pts	(3 at 155 pts each)
<u>Final Exam</u>	<u>310 pts</u>	(comprehensive)
Sub-total	1151 pts	
<u>Dropped exam</u>	<u>-155 pts</u>	(drop lowest exam score or ½ final exam score, whichever is less)
Total	996 pts	

Extra Credit.....17 pts     (Answering iClicker questions *correctly*)

The total points available for exams is 620. 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, T4 and T5, both of which are equal. For example, if you score 186/310 on the final exam, then your scores for T4 and T5 would each be 93/155. These scores will be compared with your scores on Exams 1-3 and the lowest of these scores will be dropped (i.e., not counted into your total points). The remaining 4 scores will comprise your exam total.

Up to 17 points of extra credit will be available for answering iClicker questions in lecture *correctly*.

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

A:	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:	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.*

- Periodically during the semester, your total points will be calculated, and your tentative letter grade to date will be posted so that you can see how well you are doing in the course.
- You must check all your grades on Brightspace regularly. After each exam, we will announce a deadline for you to inform us of any grade errors or discrepancies. Grade issues that are brought forward after the deadlines may not be considered, depending on the timing and situation.

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## UNIVERSITY AND COURSE POLICIES

Links to Academic Policies and Regulations and Student-Related Policies can be found by scrolling all the way down on the Brightspace *home* page (*not* the CHM 11510 page).

### **Attendance and Absences**

This course follows Purdue's academic regulations regarding attendance. Only the course instructors (professors) can excuse a student from a course requirement or responsibility. If you are absent, refer to the information below and the [Absences](#) module on Brightspace and act accordingly.

#### **Excused Absences**

Under academic regulations, excused absences may be granted by ODOS for cases of grief/bereavement, military service, jury duty, parenting leave, or emergent medical care (details below). To request make-up work or deadline extensions (HW, recitation) for *excused* absences, use the appropriate form in the [Absences](#) module on Brightspace.

Student athletes who miss class for NCAA travel should fill out the appropriate form in the [Absences](#) module on Brightspace to request makeup work. A student athlete must submit their NCAA travel letter to Marybeth Miller to be eligible for makeup work.

For absences due to academic or professional development activities, contact Marybeth Miller at least one week prior to the absence for consideration and fill out the appropriate form in the [Absences](#) module on Brightspace. Documentation of the activity must be provided. Make-up assignments or deadline extensions may or may not be provided, depending on the nature of the activity (according to the judgement of the instructors).

#### **Unexcused Absences**

To account for *unexcused* absences (illnesses, trips, conflicts, or other situations), the lowest score in each grade category (recitation, HW, exam) is automatically dropped at the end of the semester. Lowest scores are also dropped to account for internet or related technology issues that may have prevented you from completing a quiz or homework. No other make-up work or deadline extensions (i.e., for recitation, quizzes, HW, or exams) are possible for *unexcused* absences.

## **Absence accommodations**

Absence accommodations, such as modified attendance, approved by the **Disability Resource Center** will be handled individually. Contact the General Chemistry office ([genchem@purdue.edu](mailto:genchem@purdue.edu)) for more information.

## **Grief Absence Policy for Students (GAPS)**

If you experience the death of a family member or close friend, fill out the form at <https://www.purdue.edu/advocacy/students/absences.html>. Scores for any missed assignments covered under a verified GAPS absence can be pro-rated (assigned a score based on your average grade for that type of assignment at the end of the semester) or you can make up the work. Refer to the **Absences** module on Brightspace for more information or alternatives.

## **Military Absence Policy for Students (MAPS)**

If you are required to complete mandatory military training, fill out the form at <https://www.purdue.edu/advocacy/students/absences.html>. Scores for any missed assignments covered under a verified MAPS absence can be pro-rated (assigned a score based on your average grade for that type of assignment at the end of the semester) or you can make up the work. Refer to the **Absences** module on Brightspace for more information or alternatives.

## **Medical Excused Absence Policy for Students (MEAPS)**

Students may occasionally have to miss class and other academic obligations due to hospitalization or emergency department visits. This policy is intended for **emergent care only (note that urgent care visits are no longer included in this policy)**. **Emergent medical issues are those that pose a threat to loss of life or limb** (e.g., serious burns, seizures, severe cuts requiring stitches, broken/dislocated limbs or joints, head injuries). The Office of the Dean of Students will not provide notes to instructors for primary care medical appointments or routine care (e.g., overall wellness, dental care, general behavioral health care) nor occasional symptoms (e.g., pink eye, colds, flu).

A student who has experienced a medical emergency as described above should complete the Medical Excused Absence Request Form (<https://www.purdue.edu/advocacy/students/absences.html>) as soon as possible to request that an absence notification be sent to instructors. You will be given the opportunity to make up the work missed due to a medical excused absence. Refer to the **Absences** module on Brightspace for more information on requesting make-up work or deadline extensions.

If your illness is not a medical emergency, then your missed work will be handled by the dropped score policy. For special consideration, contact Marybeth Miller, [mille201@purdue.edu](mailto:mille201@purdue.edu). For privacy reasons, we are prohibited from accepting medical documentation, so do not provide it to us.

## **Mental Health**

We care about your mental health. If you or someone you know is feeling overwhelmed, depressed, anxious, and/or in need of mental health support, please talk with your instructor, your TA, one of the head TAs, the course coordinator (Marybeth Miller), your advisor or other trusted person, or seek help from one of the resources below.

- If you find yourself struggling with stress, anxiety and/or starting to feel overwhelmed, try TAO (<https://us.taoconnect.org/register>). Sign in with your Purdue login and find effective resources and tools at your fingertips, available to you at any time.
- If you need support and information about options and resources, please contact or see the Office of the Dean of Students. Call 765-494-1747. Hours of operation are M-F, 8 am- 5 pm.

- 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 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.

### **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 a.m.-5 p.m. Monday through Friday. Students may submit requests for emergency assistance from the Critical Needs Fund (<https://www.purdue.edu/odos/resources/critical-need-fund.html>).

### **Nondiscrimination Policy Statement** [https://www.purdue.edu/home/ea\\_eou\\_statement/](https://www.purdue.edu/home/ea_eou_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 are committed to the principles of 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. If you have concerns or feel you have been subject to discrimination, please contact one of us so we can direct you to appropriate resources.

### **Disability Accommodations**

Purdue University strives to make learning experiences accessible to all participants. If you anticipate or experience physical or academic barriers based on disability, you are encouraged to contact the Disability Resource Center as soon as possible:

PWL: [drc@purdue.edu](mailto:drc@purdue.edu) or 765-494-1247.

Purdue in Indianapolis: [drcindy@purdue.edu](mailto:drcindy@purdue.edu) or 765-494-1247.

If the Disability Resource Center (DRC) has determined reasonable accommodations that you would like to utilize in this class, you must share your DRC Course Accommodation Letter (CAL) via the AIM system *at least one week before* an exam or assessment for which accommodations are desired. Instructions on sharing your Course Accommodation Letter can be found by visiting: <https://www.purdue.edu/drc/students/course-accommodation-letter.php>

*Implementation of accommodations may not be possible if we do not have access to your CAL or if insufficient notification is given.* It is the student's responsibility to submit all exam requests through their Student Accommodation Portal. There is a 5 BUSINESS DAY (OR 1 CALENDAR WEEK) DEADLINE FOR ALL REGULAR EXAM REQUESTS.

## **Accommodated Testing**

Due to the size of the class, students with testing accommodations are expected to schedule and take their examinations through Purdue Testing Services. Students are expected to respond in a timely manner and meet all communicated deadlines to schedule their examinations (including the final) with the Purdue Testing Services. Students with accommodations who fail to respond and fail to schedule their test with the testing center *may not be able to have all their accommodations met*. Thus, it is critically important that all students read their Purdue email daily and respond in a timely manner to requests or directives, especially if you have accommodations related to testing.

**NOTE:** Emails about accommodated testing for CHM 11510 PWL will come from Melissa Roadruck, [melissa@purdue.edu](mailto:melissa@purdue.edu).

## **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 11510 will be posted on Brightspace and shared via announcements and email. You are expected to read your Purdue email on a frequent basis.

## **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/odos/osrr/honor-pledge/about.html>

## **Academic Integrity**

All students are expected to be familiar with Purdue's policies on academic integrity <https://www.purdue.edu/odos/osrr/academic-integrity/index.php>

"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 11510, 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 allowing other students to copy it is not acceptable. Such a use of technology does not help you learn the material and is considered academic dishonesty.

All collaboration with others (such as Group Me, Zoom, discussion boards, websites, text, in-person, TA office hours, etc.) during recitation quizzes is prohibited.

Using online resources such as Course Hero or Chegg to gain answers to any graded assignment (including homework, quizzes, and exams) is *not* allowed. Posting course materials to websites is a violation of copyright laws and is *not* allowed. The CHM 11510 instructors can obtain user information from Chegg and other sites when inappropriate course material is posted. This information will be investigated.

The use of ChatGPT or other AI agents is not banned in the class, however, it should not take the place of your own writing, and you need to ensure that you also confirm facts that are generated, because these tools do not check the accuracy of your claims. If you use an AI agent, you must

specify the AI agent used, the time and date used, the prompts used to generate text, the sections containing AI-generated text, and the ideas resulting from AI use.

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.

This course packet is a contract between CHM 11510 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](mailto:integrity@purdue.edu).

### **How to Study for CHM 11510**

It will take you at least two hours on your own for every hour we spend in class 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 exams, 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 Lecture**

- Review your notes from the previous lecture.
- 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 Netflix, TVs, radios, earbuds, etc. Turn your phone on silent and set it aside/across the room.
- 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 solve 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.**

### **During Lecture**

- 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 on all the problems that the professor presents.
- Write a question mark next to things you do not understand so you can return to them after class.
- Use shorthand or abbreviations so that you can write quickly, but understandably.
- Periodically note the time in the margin so that you can quickly find a certain section of the lecture when you review the lecture recording.
- Turn off distractions (i.e., Netflix, HW, social media, etc.).

### **After Lecture**

- Review your notes while things are still fresh in your mind.
- Listen to the lecture recording to fill in things you missed.
- Attend TA office hours or email your TA (allow 24 hours for a response) to ask questions and get help.
- Never miss lecture. Chemistry is cumulative. What is presented tomorrow depends upon your knowledge of what was covered today. If you miss class, then get a friend to take notes for you or take notes from the recording.

### **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 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 via email (allow 24 hours for a response).

### **Practice, Practice, Practice**

- Read the Sample Problems in the textbook, then work one or both Follow-Up Problems and check your work at the end of the chapter.
- Work additional problems at the end of each textbook chapter. You can check answers for the problems with colored numbers in Appendix E.
- 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.

**Who to contact for what concern:**

What?	Who?
missed lecture	<ol style="list-style-type: none"><li>1. We record attendance at 17 of 19 lectures, i.e., drop the lowest 2 lectures, so there is no need to inform anyone.</li><li>2. Access lecture recording and slides on Brightspace (Kaltura Media Gallery), PWL only.</li></ol>
missed HW, recitation, or other assignment due to <b>excused absence</b> , i.e., emergency illness (MEAPS), death in the family (GAPS), or military leave (MAPS)	<ol style="list-style-type: none"><li>1. Fill out absence request with ODOS <a href="https://www.purdue.edu/advocacy/students/absences.html">https://www.purdue.edu/advocacy/students/absences.html</a>.</li><li>2. Request makeup work, deadline extensions or prorated scores at ####form.</li></ol>
exam conflict	<ol style="list-style-type: none"><li>1. Email <a href="mailto:CHM11510LEC@purdue.edu">CHM11510LEC@purdue.edu</a> at least one calendar week before the exam to see if you are eligible for a rescheduled exam.</li></ol>
missed an exam	<ol style="list-style-type: none"><li>1. Email <a href="mailto:CHM11510LEC@purdue.edu">CHM11510LEC@purdue.edu</a> to see if your absence is excused and if you can take a make-up exam.</li></ol>
homework issue	<ol style="list-style-type: none"><li>1. If you have a content (chemistry) question, go to TA office hours (schedule on Brightspace) and ask for help.</li><li>2. For Achieve technical issues, use the form at <a href="https://mhe.my.site.com/macmillanlearning/s/chat-with-us">https://mhe.my.site.com/macmillanlearning/s/chat-with-us</a></li><li>3. For other questions, email <a href="mailto:CHM11510LEC@purdue.edu">CHM11510LEC@purdue.edu</a>.</li></ol>
Brightspace issue	Purdue IT (see below)
DuoKey issue	Purdue IT (see below)
Gradescope issue	Purdue IT (see below)

**Purdue IT:**

- By Phone: 765-494-4000
- By Email: [it@purdue.edu](mailto:it@purdue.edu)
- Hours of Operation: by phone and by email 24 hours a day, 7 days a week\*.

**Purdue IT walk-up Service Desk locations (for in-person help and Purdue Duo tokens):**

- Hicks Undergraduate Library (HKS), main floor near the Libraries Desk
- HSSE Undergraduate Library (HSSE), main floor of Stewart Center near the printers
- Wilmeth Active Learning Center (WALC), first and second floors
- See hours at <https://it.purdue.edu/facilities/instructionallabs/resources/currenthours.php>.

## Due Dates

Week #	Week of	REC #	Pre-Recitation Quiz		Post-Recitation Quiz		HW		Exams	
			#	due 24 hrs before REC	#	due Sun. 11:59 PM	#	due Wed. 11:59 PM	#	date
1	25-Aug	1			PostQ1_Rec1	31-Aug				
2	1-Sep	2*	PreQ1_Rec2		PostQ2_Rec2	7-Sep	HW01	3-Sep		
3	8-Sep	3	PreQ2_Rec3		PostQ3_Rec3	14-Sep	HW02	10-Sep		
4	15-Sep	4	PreQ3_Rec4		PostQ4_Rec4	21-Sep	HW03	17-Sep		
5	22-Sep	NO RECITATION					HW04	24-Sep	Exam 1	25-Sept 8:00-9:00 PM
6	29-Sep	5	PreQ4_Rec5		PostQ5_Rec5	5-Oct	HW05	1-Oct		
7	6-Oct	6	PreQ5_Rec6		PostQ6_Rec6	19-Oct	HW06	8-Oct		
8	13-Oct	NO RECITATION FALL BREAK (10/13-10/14)					HW07	15-Oct		
9	20-Oct	7	PreQ6_Rec7		PostQ7_Rec7	16-Oct	HW08	22-Oct	Exam 2	22-Oct 8:00-9:00 PM
10	27-Oct	8	PreQ7_Rec8		PostQ8_Rec8	2-Nov	HW09	29-Oct		
11	3-Nov	9	PreQ8_Rec9		PostQ9_Rec9	9-Nov	HW10	5-Nov		
12	10-Nov	10	PreQ9_Rec10		PostQ10_Rec10	16-Nov	HW11	12-Nov		
13	17-Nov	NO RECITATION					HW12	19-Nov	Exam 3	19-Nov 8:00-9:00 PM
14	24-Nov	NO RECITATION THANKSGIVING BREAK (11/26-11/28)					HW13	2-Dec		
15	1-Dec	11	PreQ10_Rec11		PostQ11_Rec11	7-Dec	HW14	7-Dec (Sun)		
16	8-Dec	12	QUIET WEEK - Semester Review in lecture and recitation							
FINALS	15-Dec								Final Exam	TBA

### Lecture, Recitation and Exam Schedule

Week	Week of	Lecture #	Lecture Topic	Reading	Recitation	Exams
1	25-Aug	1	Introduction to CHM 11510/Nuclear Chemistry 1	Course Packet, CH 24	1. Measurement and SI units (1.3), sig figs (1.4), unit conversions & density (1.5)	
		2	Nuclear Chemistry 2	CH 24		
2	1-Sep	Labor Day - no lecture M/T			2. Mass conservation (2.3), atomic theory (2.4), Periodic Table (2.5), ion formation (2.6) <b>(No REC on Mon. Sept. 1)</b>	
		3	Nuclear Chemistry 3	CH 24		
3	8-Sep	4	Nuclear Chemistry 4	CH 24	3. Chemical formulas (2.7), the mole and molar mass (3.1)	
		5	Quantum Theory/Atomic Structure 1	CH 7		
4	15-Sep	6	Quantum Theory/Atomic Structure 2	CH 7	4. Chemical equations (3.3), stoichiometry (3.4)	
		7	Quantum Theory/Atomic Structure 3/Periodic Trends 1	CH 7, CH 8		
5	22-Sep	8	UV/Vis Spectroscopy/Beer-Lambert Law	pp. 304-5; 4.1	<b>No recitation</b>	<b>Exam 1</b> Thurs. Sept. 25 8:00 - 9:00 PM
		9	Periodic Trends/Trends in Chemical Reactivity 2	CH 8		
6	28-Sep	10	Periodic Trends/Trends in Chemical Reactivity 3/Thermochemistry 1	CH 8/CH 6	5. Molarity and solution stoichiometry (4.1)	
		11	Thermochemistry 2	CH 6		
7	6-Oct	12	Thermochemistry 3	CH 6	6. Gas laws (5.3, 5.4, 5.5)	
		13	Models of Bonding 1	CH 9		
8	13-Oct	October Break - no classes M/T			<b>No recitation</b>	
		14	Models of Bonding 2	CH 9		

Week	Week of	Lecture #	Lecture Topic	Reading	Recitation	Exams
9	20-Oct	15	Shapes of Molecules 1	CH 10	7. Lewis Structures (10.1)	<b>Exam 2</b> Wed. Oct. 22 8:00 - 9:00 PM
		16	Shapes of Molecules 2	CH 10		
10	27-Oct	17	Shapes of Molecules 3	CH 10	8. VSEPR (10.2)	
		18	Organic Chemistry 1	11.1-2; 15.1-2		
11	2-Nov	19	Organic Chemistry 2	11.1-2; 15.1-2	9. VB Theory and Hybridization (11.1)	
		20	Polymers	pp. 513-7; 15.5		
12	10-Nov	21	IR Spectroscopy	pp. 378-9	10. Phase Changes (12.2-12.3)	
		22	IMF/Biological Molecules 1	13.1, 15.6, p. 426		
13	17-Nov	23	IMF/Biological Molecules 2	13.1, 15.6, p. 426	<b>No recitation</b>	<b>Exam 3</b> Wed. Nov. 19 8:00 - 9:00 PM
		24	Crystal Structures	12.6		
14	24-Nov		No Lecture		<b>No recitation</b>	
		Thanksgiving Break- no classes W, Th, F				
15	1-Dec	25	Crystal Structures	12.6	11. Crystal structures (12.6)	
		26	Advanced Materials	12.7, pp. 278-9		
16	8-Dec	27	Quiet Week - Semester Review		12. Semester Review	
		28	Quiet Week - Semester Review			
Finals Week	15-Dec			Final Exam: Wait until you know the date of the final exam before you make travel plans that might conflict with the exam. Final exams will NOT be rescheduled to accommodate your travel plans.		<b>Final Exam TBA</b>