
General Chemistry with a Biological Focus

CHM 12901 Course Packet Fall 2025

Professors

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CHM 12901 Teaching Team In addition to the members of the leadership team listed above, each lab section will be led by a teaching assistant (TA). Some TAs are graduate students in the Chemistry Department; some are outstanding undergraduate students who performed well in CHM12901 and/or have strong chemistry backgrounds. *Your TA should be your first point of contact with respect to questions related to the course content.* TA contact information, including weekly office hours, will be posted on Brightspace.

Course Description

Chemistry 12901 (CHM12901) is an accelerated, one-semester general chemistry course geared toward biology, biochemistry, pharmacy, and pre-health majors. This course is part of a 1-2-1 curriculum; the one semester of general chemistry is followed by 2 semesters of organic chemistry and 1 semester of biochemistry. We will use the atoms first approach to general chemistry. Topics covered during this semester include atoms and molecules, atomic structure and periodic trends, bonding and geometry, intermolecular forces, chemical reactions, kinetics and equilibrium, nuclear chemistry, acids and bases, thermodynamics, and oxidation and reduction. This course has been designed to include a biological context, in addition to foundational concepts, wherever possible. We emphasize application and problem-solving skills through regular homework, recitation worksheets, and laboratory experiments. Note that you must be enrolled in lab (which meets weekly), in addition to the lecture.

The expected prerequisite for CHM 12901 is a year of general chemistry (most often at the high school level). If you have not previously taken a course in general chemistry, or it has been an extended period since your last exposure to this material, you can remain enrolled in the course. We encourage you to take advantage of the numerous support mechanisms and review materials (on our course webpage on Brightspace) that we provide and we suggest you consider additional resources that may enhance your success (e.g. Problem-Solving Sessions, forming study groups, tutoring).

During the Fall 2025 term, CHM12901 will be face-to-face (F2F). If you are not present on the West Lafayette campus during the term, you may not be enrolled in CHM 12901. Please also be aware that course policies may be updated, as appropriate, and clarified and disseminated as quickly as possible. We will do our best to minimize disruptions and maximize your success. We rely heavily on electronic announcements to share key information; please check your email and the course Brightspace page regularly (and, at least, daily). Thank you for your efforts in following these policies and in adjusting to modifications that become necessary. Please correspond with our Course Coordinator, Mrs. Leah Everly, if you have any concerns or questions.

Learning Outcomes

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

1. Identify, set up, and solve algorithmic and biologically-relevant problems in general chemistry.
2. Read information on the Periodic Table of the Elements in order to make predictions about the behaviors of compounds and molecules (i.e. size, type of bonding, shape, structure, intermolecular forces, and mass).
3. Synthesize information from the 'bottom-up' (atoms first) approach to solve chemistry problems.
4. Read and represent chemical structures using expanded and compact formats.
5. Identify research-based strategies that have been used to define, develop, and refine chemical principles.
 - a. As part of this course, laboratory experiments will foster technical abilities, emphasize data collection, analysis, and interpretation, as well as written communication of chemical phenomena.

Course Structure

CHM 12901 consists of the following components, which will be further detailed throughout this packet. Brightspace: <https://purdue.brightspace.com/d2i/login> is the primary course management site and should be monitored regularly (recommended daily). Course announcements, lecture slides, lecture recordings, learning objectives, grades, and other information will be posted on Brightspace. A primary software package for the course will be Gradescope (<https://www.gradescope.com/>). It will be important for you to gain proficiency in using Gradescope; resources and examples will be posted to Brightspace. A complete **course schedule** is posted on Brightspace.

Lectures

3 lectures per week (M, W, and F) will be delivered in WTHR 200
There are two lecture sections:
CHM12901-001 (11:30 am – 12:20 pm), CRN 24552
CHM12901-002 (1:30 – 2:20 pm), CRN 10402
Your lecture section is on your class schedule

Labs

Thursday or Friday in Chaney-Hale Hall of Science (CHAS)
You will attend one lab section each week
Your lab section timing and location are on your class schedule

Recitation

Recitations will either be on Tuesday or Thursday
Your recitation section timing and location are on your class schedule

Problem-Solving Sessions These *optional* sessions are on Tuesdays (6:30-8:30 pm); see Brightspace

for details

Course information	Brightspace, https://purdue.brightspace.com/d2l/login
Examination Platform	Exams are in-person and will be graded in Gradescope. Exam regrade requests will be handled using Gradescope; upon a regrade request, the entire exam is subject to rescoring.
Homework Platform	McGraw Hill ALEKS, launch ALEKS from our course Brightspace page

Diversity Statement

In CHM 12901, we are committed to valuing every member of our course community and we believe that everyone plays a role in contributing to our collective success. We expect that every individual will demonstrate respect for the different experiences, beliefs, and values expressed by students and staff involved in this course. We welcome everyone, regardless of race, age, religion, sex, sexual orientation, gender expression, gender identity, disability, or other intersectional identity. The instructors are focused on the content of the course and appreciate everyone's efforts to maintain this priority and create space for each participant's opportunity for the best experience. If you have concerns or feel you have been subject to discrimination, please contact or the course coordinator (Leah Everly) so we can direct you to appropriate resources.

Nondiscrimination Policy

A link to Purdue's full Nondiscrimination Policy Statement, which our course adheres to, is included in the student services widget under "Academic Resources" on the Purdue Brightspace home page.

Mental Health & Wellness

If you 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 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). Please be aware that members of the instructional team are Mandatory Reporters and will report situations that could involve harm to members of the CHM12901 community.

Accessibility

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. Students whose DRC Course Accommodation Letter (CAL) includes test accommodations must first release their CAL. Instructions on how to do this can be found here: <https://www.purdue.edu/drc/students/course-accommodation-letter.php>. Upon receipt of the CAL an email will be sent to your @purdue.edu email address that will contain all exam scheduling information.

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.**

Any questions concerning your accommodations should be directed to Mrs. Leah Everly (leverly@purdue.edu) 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 at: drc@purdue.edu or by phone: 765-494-1247, as soon as possible.

Accommodated Testing

Emails about accommodated testing will come from Melissa Roadruck, melissa@purdue.edu

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 serves students 8 a.m.-5 p.m. Monday through Friday.

Emergencies

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

“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.

For more information, please see: https://www.purdue.edu/ehps/emergency_preparedness/

Absence Policies

General Attendance Policy

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 must be absent, refer to the Absence module on Brightspace and take the relevant action steps. It is the responsibility of the student to understand the absence policies and the steps to take should they need to miss class for any reason.** Contact Mrs. Leah Everly (leverly@purdue.edu) with any questions or concerns related to course absences and makeup work.

Do not come to class if you feel ill, have a fever, or display any symptoms associated with COVID-19 or the flu. Please follow the most current Purdue University guidelines for testing and quarantine.

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). These are the **only** excused absences in CHM 12901. To request makeup work or deadline extensions for excused absences, see the Absences module on Brightspace.

If you participate in a **NCAA sport**, you must contact Mrs. Leah Everly (leverly@purdue.edu) during the first two weeks of class (or receipt of letter) to discuss potential scheduling conflicts and use the Absence module on Brightspace to request makeup work.

To prevent the extent of scoring penalties that result from unexcused absences (illnesses, trips, conflicts, or other situations), the lowest score in each grade category (recitation (2), lab, HW, exam) is

automatically dropped at the end of the semester. This includes internet or related technology issues that may have prevented you from completing a lab report, recitation quiz, or homework. Therefore, since we appreciate that unforeseen circumstances arise, a general response to individual situations in which an assignment is not submitted will be to use the allotted drops. Please contact our Course Coordinator, Mrs. Leah Everly (leverly@purdue.edu), if you have questions about this policy. Students with unexcused lab absences are eligible for one prearranged lab report make-up assignment, per student, per semester. Refer to the Absence Module on Brightspace for details. No other makeup work or deadline extensions (i.e. for prelab, recitation, HW, or exams) are possible for unexcused absences. Absence accommodations approved by the **Disability Resource Center** will be handled individually. Contact Leah Everly (leverly@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> as soon as possible. Refer to the Absence 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>. Refer to the Absence module on Brightspace for more information or alternatives.

Medically Excused Absence Policy for Students (MEAPS)

Students may occasionally have to miss class and other academic obligations due to hospitalization or emergency department visits, whether physical or mental health related in nature. 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 should complete the Medical Excused Absence Request Form (<https://www.purdue.edu/advocacy/students/absences.html>) to request that an absence notification be sent to instructors. You will be given the opportunity to make up work missed due to a medical excused absence. Refer to the Absence module on Brightspace for more information on requesting makeup work or deadline extensions. Absences due to illness/injury not covered by MEAPS policies are addressed through our one free lab makeup as described above.

Purdue Academic Calendar

These dates follow the published academic calendar but may be subject to change; please follow updates provided on Brightspace for official schedule information.

Classes begin Monday, August 25

No classes Labor Day, Monday, September 1

October Break, Monday and Tuesday, October 13-14

Thanksgiving Vacation, November 26-29

Last day of classes, Saturday, December 13

Finals Week begins Monday December 15

Adding/ Dropping/Changing Sections

University/Departmental Deadlines:

Fri. Aug. 29	last day to add a class or switch lab sections <i>without</i> instructor approval*	End of Week 1
Fri. Sept. 12	last day to switch lab sections <i>with</i> instructor approval* and last day to add a class <i>with</i> instructor approval*	End of Week 3
Mon. Sept. 22	last day to switch from CHM 12901 to another CHM course <i>with</i> instructor approval*	End of Week 4
Mon. Sept. 8	Last day to drop a class without it appearing on your transcript:	End of week 2
Tues. Nov. 25	Last day to drop a class with a grade of "W"	End of Week 13

**All schedule changes should be initiated through the Scheduling Assistant on My Purdue. Changes requiring instructor approval are then forwarded to the department for consideration.*

Adding the Course/Late Registration: Students are usually not permitted to add CHM 12901 after week 2 of the semester (**Fri. Sept. 5**). Students who add the course late must notify Leah Everly (leverly@purdue.edu) within 24 hours of adding the course.

Changing Sections: To change a lab section, departmental approval will be required after the first week of classes; in general, switching is discouraged and may be very difficult to accommodate. Due to the processes associated with assigned lab drawers and Brightspace and ALEKS enrollment, we will not make a section change for students after Week #3 of the semester (**Fri. Sept. 12**). If you change sections after you check into a locker drawer, you must check out of your old locker drawer before checking into a drawer in your new section. Failure to follow this policy may incur a penalty fee.

Dropping the Course/Lab Check-out:

If you drop the course by September 22, you do NOT need to formally check out of the laboratory. After that date, you MUST check out with your TA to avoid a penalty fee.

If you drop CHM 12901 after that date, it is your responsibility to check-out of your assigned drawer during the next scheduled lab period or during the regularly scheduled Check-Out. If you do not check out immediately, then go to lab at the regularly scheduled starting time during lab check-out as listed on the lab schedule and check out of your locker drawer. **You will need to be properly dressed for laboratory work and wear safety goggles through the entire check-out process (full description of proper dress appears later).**

Failure to Check-Out of Lab: For anyone who does not check out of a lab locker drawer by the scheduled or designated time:

- he/she will be charged a \$45 Failure to Check Out (FTCO) Fee and
- he/she forfeits the right to determine the acceptability of all locker drawer equipment, which may lead to additional penalties.

Academic Integrity: *Your integrity is your greatest asset.*

The professors in CHM 12901 view academic dishonesty (e.g. cheating) as a serious offense; we hope that cheating never arises as a problem in this course. The Office of the Dean of Students' publication, *Academic Integrity: a Guide for Students*, is an excellent summary of expectations for Purdue students and is available at: <http://www.purdue.edu/odos/osrr/academic-integrity/index.html>

"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 12901, academic integrity means demonstrating your own work and thought processes at all times. Since many of our students are freshmen, we acknowledge that the adjustment to the college environment can be challenging. This requires, therefore, an attention and steadfastness to generating a strong trajectory for your tenure at Purdue and a commitment to learning about and maintaining the highest ethical standards that make us Boilermakers. We strongly encourage collaboration and group study but sharing your answers and work for the purpose of letting other students copy it is unacceptable. Using online resources such as Chegg to gain answers to homework or exam questions is not allowed. Instructors can obtain user information from Chegg when quiz or exam questions are posted there. For any exams in CHM 12901 that are virtual (on Gradescope), collaboration with others (such as Group Me, Zoom, Chegg, discussion boards, internet searches, text, in-person, etc.) is prohibited.

While the following list of examples of academic dishonesty is not complete, the examples are provided for your information. If you have any questions at all about permissible behavior, ask before acting.

- Copying or possessing an unauthorized crib (written or electronic) during an exam.
- Copying from another student's exam OR allowing another student to copy from your exam.
- Copying lab data or lab reports (part or all). This includes electronic files as well as paper copies.
- Not generating your own charts and graphs.
- Giving your lab report to someone else to copy.
- Changing data for a lab project to fit the perceived answer.
- Using or reporting someone else's data in a report as if it were your own.
- Working together on prelab exercises, but not putting the work in your own "style."
- Submitting a lab report or other work that you did not do.
- Copying and pasting any materials without appropriate citation.
- Using any portion of the lab manual *verbatim* (this is an example of plagiarism).
- AI/CHAT GPT use: "Students who use AI-generated writing for any portion of their assignments will be deemed in violation of the academic integrity expectations for this course. Violations can include a failing grade for the course and restrictions from further class attendance. All suspected incidents of academic dishonesty will also be referred to the Office of Student Rights and Responsibilities for further review of the student's status with the University, which may include being separated from the University." (from Cornerstone Integrated Liberal Arts, Purdue University)

In CHM 12901, academic dishonesty will result in progressive discipline for all academic dishonesty issues with progressive consequences from a score of zero for a portion or the entire assignment in question and a report to the Office of the Dean of Students. Academic dishonesty could result in a grade of “F” in the course plus a report to the Office of the Dean of Students. The progression of discipline will go as follows:

- First offense: will result in a 0 on plagiarized questions or portions of the assignments, up to the entire assignment in question.
- Second offense: will result in a 0 on the entire assignment in question and reporting to the Office of the Dean of Students.
- Third offense and beyond: will result in a grade of “F” in the course plus a report to the Office of the Dean of Students

Definitions: Plagiarism and unauthorized collaboration are prohibited in CHM 12901.

- **Plagiarism:** “using the exact language of someone else without the use of quotation marks and without giving proper credit to the author” or “stealing someone else’s ideas and presenting them as your own” (from ODOS brochure referenced above).
- **Collaboration:** working with someone or a group to produce something is *encouraged* and relied upon in a laboratory setting. The Final Report is an out of classroom example of authorized collaboration. However, assignments which are specifically identified as independent should not be performed collaboratively. This means you should not “divide and conquer” these assignments (for example, through the use of a shared GoogleDoc), or copy directly from another’s work. You may still *discuss* the questions and their answers with each other, but your answers should be clearly in your own words so as to demonstrate your intellectual contribution.
- **Unauthorized collaboration:** copying directly from another student’s work (e.g. prelab) or not contributing equitably to the group or pair’s effort in lab

This course packet is a contract between CHM 12901 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/> - see academic dishonesty report), call 765-494-8778 or email integrity@purdue.edu.

THINGS THAT YOU MUST DO DURING WEEK #1:

- Purchase required materials.
- Install the iClicker App on your laptop computer (can also be installed on Apple mobile phones)
- Register for ALEKS through the course Brightspace page only!
- Read all the information in this course packet and watch the welcome video(s) on Brightspace, if you have not already done so
- Complete the appropriate *Reading Assignments* posted on Brightspace
- Complete Pre-Course Content Review Module on Brightspace (if you have not already done so)
- Complete the safety certification available on the course Brightspace page with a score of at least 20/25; this is due by 11:59 PM September 3. You must complete your safety certification before you can work in lab.
- Attend recitation.
- Do NOT register your materials on the ALEKS website directly.

Required Materials

- Registration/Access code for **ALEKS** online homework & e-book (can be purchased with the textbook). Purchase through Brightspace via ALEKS or McGraw-Hill store link.

- iClicker App for Recitation quizzes
- **Textbook:** OPTIONAL PHYSICAL VERSION of CHEM12901: Purdue General Chemistry with Biological Focus (Purdue University Edition), e-book or any version of the 5th edition of “**Chemistry: Atoms First**” by Overby and Burdge
- **Digital Materials Charge:** Students enrolled in this course must purchase digital materials for lab (\$35). This digital content is required; students cannot complete the course without access to it. The materials will be released online on a real-time (approximately weekly) basis during the Fall 2025 semester. You will purchase access to the digital materials via a Purdue University Online link (<http://www.eventreg.purdue.edu/online/CHMFall35>). Payment is due by September 5, 2025.
- **Approved safety goggles.** Splashless goggles (**not** safety glasses) may be purchased from the storerooms in the CHAS (laboratory) building on either the first or fourth floor.
- A Sharpie (black, permanent ink) for marking lab glassware
- A scientific calculator with exponential, logarithm and square root functions. **One, or two-line non-programmable calculators are allowed**; Calculators with a SOLVER function, graphing capabilities, or Alpha-numeric capabilities are NOT allowed; If a calculator can graph, or solve, or store equations, then it is NOT allowed. Preferred calculator models are: TI-30Xa (one-line), or TI-30X IIS (two-line).
- A bound single-subject dedicated notebook for the laboratory.

Suggested Materials

- Highlighter and pens for lecture participation (or tablet or computer if you prefer)

DETERMINING YOUR COURSE GRADE, FALL 2025

Each of the assigned course activities for CHM 12901 is worth the number of points listed below. Before course grades are finalized at the end of the semester the following scores will be dropped:

- your lowest homework score
- your lowest two recitation activity scores
- your lowest lab score
- your lowest exam score

The total number of points for CHM 12901 will be distributed as follows:

Homework	180 pts	Best 12 of 13 scaled to 15 pts each
Recitation Activities	165 pts	Best 11 of 13 scaled to 15 pts each
Labs	250 pts	Best 10 of 11 scaled to 25 pts each
Course Packet Quiz	5 pts	REQUIRED
Quiz and Exams	600 pts	Best 4 of 5 exam scores at 150 pts each: 3 Midterm Exams (450 pts) Final Exam is worth 2 exams (300 pts)
TOTAL	1200 pts	

Your final course grade will be based on the following scale out of 1200 total points:

- A: 1080 - 1200+ points
B: 960 - 1079.99 points
C: 840 - 959.99 points
D: 720 - 839.99 points
F: Fewer than 720 points OR failure to complete 3 or more labs*
*This course has a required lab component. If you fail to complete 3 or more labs, your course grade is automatically an F.

Plus grades are determined at the instructors' discretion at the end of the semester. No minus grades are given.

* The Brightspace Grade is your grade in the course. Monitor this grade compared to your Gradescope grades for accuracy in transfer. If there is a discrepancy, notify your instructor within a week of the posting in Brightspace to have the grades reconciled.

It is your responsibility to check and verify that your scores posted on Brightspace are correct. Shortly after each of the first three exams and shortly before the final exam, all your scores to date will be available to you at the Brightspace grade book. You must report any errors on any graded material to your Teaching Assistant (TA) or to the professor within one week of the time they were posted. All disputed or missing scores must be resolved with your teaching assistant (TA) or the professor before the final exam. There will be no score correction considerations after the final exam.

SOURCES OF HELP FOR STUDENTS IN CHM12901

We are aware that chemistry can be difficult material for some people to learn. At the same time your professors are eager to support your success and provide a variety of teaching and learning methods that may assist with the learning process. In CHM 12901, you will have the opportunity to learn individually, with partners, and in groups. We encourage you to coordinate learning groups for your study and lab report preparation.

Experts indicate that to adequately learn new material in college, 2-3 hours of effective study outside regularly scheduled class time each week per one (1) credit hour is required. CHM 12901 is a 5-credit course so this suggests that 10-15 hours per week of effective study outside of regular class time is necessary to learn what we want you to learn.

The Chemistry Department provides several sources of help for you in this process at no cost. These include the professors, the CHM 12901 Teaching Assistants (TAs), an undergraduate Supplemental Instructor (SI), and the Chemistry Resource Room (CRR: WTHR 117b).

TA Office Hours: Each CHM 12901 graduate student Teaching Assistant (TA) will hold a one-hour office hours each week and each undergraduate TA will hold a one-hour office hour weekly. In office hours, any CHM 12901 student can go to get help with chemistry. If you are having a problem with some aspect(s) of the course, go first to your Teaching Assistant (TA). He/she wants to help you and is available for consultation both at specific hours and by appointment. Feel free to go to the office hour of another CHM 12901 TA. A complete schedule of office hours and their locations is posted on Brightspace. If you have any questions about office hours contact Leah Everly (leverly@purdue.edu).

Professor: You can go to either professors' office hours. E-mail addresses and office hour times and locations will be provided on Brightspace.

Purdue General Chemistry Help Site: <http://www.chem.purdue.edu/gchelp/Visualization> and Problem Solving for General Chemistry

Academic Success Center: <https://www.purdue.edu/asc/> Get help with reaching your academic goals.

Supplemental Instruction (SI):

There are Supplemental Instruction (SI) study sessions available for this course. Our SI Leader is a former CHM129 student who excelled in the course and is eager to support the success of current students. These study sessions are open to anyone enrolled in this course who would like to stay current with the course material and understand the material better. Attendance is voluntary, but extremely beneficial for those who attend weekly.

Supplemental Instructor: **Mary Wang (she/her)**, email: wang6345@purdue.edu

SI Sessions: Mondays, HAMP 2118, 5:30-6:20 PM

Thursdays, HAMP 2118, 5:30-6:20 PM

Office Hour: Mondays, WILY C215, 2:30-3:30 PM

Problem-Solving Sessions (PSS):

Practice in problem-solving is essential to the study of chemistry. Students will solve problems through weekly homework, recitation worksheets, and extra problems that are available in the textbook and posted to the course Brightspace page. As an additional source of practice problems that resemble the style of exam questions (focused on synthesis of concepts and, often, multi-part questions), there will be weekly, optional PSS activities led by the Lecture Coordinator. The general format will be that a problem will be shown, and participants will be given a set time to attempt the problem, based on the predicted time available during an exam. Following this interval, participants will be encouraged to work together to attempt to solve the problem before the Lecture Coordinator provides the solution using the Document Camera. Once these sessions are scheduled, the time and location will be posted to the course Brightspace page.

COURSE ACTIVITIES, POLICIES AND PROCEDURES

Lectures

Student versions of the lecture notes will be posted on Brightspace and can be filled during lecture. You are encouraged to either bring a hard copy or use a tablet or laptop to actively participate during lecture. The lecture files for the coming week will be posted to Brightspace by noon on the preceding Sunday. We will do our best to minimize last-minute changes to these slides, but we request your understanding if a situation arises for which we decide on necessary modifications (any such changes will be announced on Brightspace and updated slides will be posted). Completed lecture slides will not be uploaded to Brightspace. You will be responsible for any announcements or course changes that are made in lectures.

Exams

CHM 12901 will have 3 midterm exams at 1.5 hours each and a final exam of 2 hours. The exams will be in-person and your seating assignment will be shared on Brightspace. All exams will be administered

recitation time and section.

Recitation problem sets will be accessed via Gradescope. Recitation sessions provide you with the opportunity to ask questions and work with your Teaching Assistant (TA) and classmates in smaller groups, as much as possible. You will have time to ask questions. Recitation sessions are not long enough to answer all the questions that all students may have. If you have difficulties or have questions about certain problems, you should seek help from your professor or a CHM 12901 Teaching Assistant (TA) during scheduled office hours.

You will receive a maximum of 15 points per recitation session; 12 points are allocated for effort on the worksheet and 3 are reserved for the weekly recitation quiz. Should you be unable to attend a recitation, the first option will be to drop that week's score; additional accommodations will be made on a case-by-case and need basis. You need to attend a minimum of 11/13 sessions – two are dropped at the end of the semester. We encourage you to submit the weekly assignment for feedback on the work and the opportunity for 12 points, but the weekly quiz points are only available for those attending recitation in person. Materials for recitation must be legible and submitted via Gradescope by the Sunday following that recitation, no later than 11:59 pm EDT.

Laboratories

Pre-lab: To ensure adequate preparation, you are expected to read the laboratory manual for each experiment, watch the instructional laboratory videos, complete the pre-lab safety quiz (2 points), and complete the pre-lab content quiz (5 points) before coming to lab each week. All of these materials can be found on Brightspace. The pre-lab exercises that are published in the manual are not required, and will not be graded, but could be another source of excellent problem-solving practice and may help in reviewing key concepts related to lab materials. You must pass the safety quiz with a score of 100% in order to be eligible to participate in the lab. Unannounced quizzes are possible if instructors find that many students are not preparing in advance for lab.

To be eligible for full credit, your pre-lab safety and content quizzes for the current week's lab are due by the Tuesday preceding the lab, no later than 11:59 pm EDT and should be submitted using Brightspace. If you do not attempt or do not successfully pass the safety quiz after three attempts, you will not be allowed to participate in the lab session and will receive a zero for that lab. If you do not pass the safety quiz in your first attempt, we recommend you attend an office hour to clarify any misunderstandings about the material. You may want to complete your third attempt, with assistance, in an office hour to ensure eligibility to complete the lab. You will only receive one attempt for the content quiz but can participate in lab regardless of your score.

Lab project completion: You are required to complete **9 of the 11** scheduled lab sessions to pass the course. Labs are completed by either attending lab and submitting a lab report, or by submitting an approved makeup lab following an absence. Attendance at Check-in and check-out is mandatory.

A failure-to-complete score (zero points) for lab will be assigned in the following cases:

- being dismissed from lab for safety violations including improper dress or failure on the safety quiz
- arriving more than 10 minutes late,
- inadequate preparation for lab that hinders participation,
- not contributing constructively to the group's work in the lab,
- failure to submit a lab report, or
- not participating in preparation of the lab report.

Penalties for failure-to-complete labs are as follows:

- 1st fail-to-complete lab: a score of zero; can be dropped at the end of the semester
- 2nd fail-to-complete lab: score of zero (will be included in calculation of total points)
- 3rd fail-to-complete lab: score of zero and a failing grade for CHM 129

Safety Certification: To be permitted to work in lab, you must complete the online safety certification found on Brightspace with a score of 20/25 or better. The first lab sessions will meet September 4 and 5; plan to complete your certification **by 11:59 PM September 3**. Make sure to access the Brightspace grade book to check your score. **You will receive a zero for each lab you miss due to an incomplete safety certification.**

Preparation: You are expected to arrive on time, properly dressed, and prepared for lab work. If you arrive at lab more than 10 minutes late or improperly dressed, then you will be considered unprepared to do the lab work and will be asked to leave the lab. **You will receive a zero for that lab and it will count as a failure to complete the lab.**

Working with a Lab Partner or Group: You will be working with a partner or group for most of the laboratory projects. One member of the group will upload a copy of the lab report to Gradescope, unless otherwise stated. It is critical that you work together to analyze data and prepare the lab report. You and your partner or group share the responsibility for writing lab reports that honestly reflect your work. **You must include the names of everyone who participated in preparing the lab report or a deduction will incur.** If you are experiencing difficulties within your group, you should refer to your group contract, signed during the first week of lab, and notify your instructor early in the semester or as soon as possible so the issue may be resolved.

Lab Reports: Each laboratory report is due 11:59 pm the night before the next lab class, or as stated in Gradescope. Physical submissions will not be accepted; completed reports should be uploaded to Gradescope. All graphs must be computer-generated using a spreadsheet and graphing program such as Microsoft Excel or MatLab. Additional information about the format for lab reports will be provided in lab. Please ensure that figure legends, equations, and titles are legible.

Late Lab Reports: Fifty percent (50%) of the maximum points will be deducted from the score for all late lab reports (including those submitted in partial form that are later uploaded in complete form). No laboratory reports will be accepted and graded beyond 24 hours after the report is due.

Grading Criteria for Lab Reports: Your lab reports will be graded primarily on correctness and completeness. The following guidelines will apply:

- The report is complete.
- The report is organized correctly.
- The presentation is legible and logical. Headings and subheadings are used to identify or describe the contents of a particular section. Graphs and tables have titles to describe the contents.
- The data analysis and calculations have been done with the data your team collected during the lab period.
- The data analysis, including units of measurements and significant figures, are correct.
- Chemical terms and concepts have been used correctly throughout the report.
- Your conclusions and results are consistent with your data and calculations.
- Data are within acceptable error limits.

Questions about Lab Report Grades: If you have a question about the score on any of your lab reports, first ask your Teaching Assistant (TA) for clarification. If the Teaching Assistant (TA) cannot answer your questions, you may take the graded lab report to a lab supervisor for possible re-grading. You will need to do this within one week after the graded paper has been returned via Gradescope. The entire lab report will be regraded, not just the part where you think an error has been made.

Lab Ending Times: The Teaching Assistants (TAs) must close the laboratories promptly by the end of your scheduled lab period. At that time all equipment must be cleaned and put away, lab drawers locked and lab notes turned in (checked by your TA) so the lights can be turned out and the doors closed.

Safety Policies for Chemistry Labs: The safety of everyone in the active learning environment of a lab is taken seriously and your failure to comply with the safety regulations WILL affect your grade. Complying with safety regulations is simply a minimum requirement for being allowed to work and learn in a chemistry lab.

Compliance with the Safety Regulations is NOT a Matter of Personal Choice or Opinion.
Compliance is a REQUIREMENT.

Safety Goggles: You must always wear appropriate, splashless and approved safety goggles (not safety glasses) in the laboratory, including the day of check-out. You will be dismissed from lab and lose all credit for an experiment or lose your opportunity to check out if you do not wear your safety equipment as required. Safety goggles may be purchased at the local bookstores or the chemistry storerooms. Goggles may be stored in your laboratory drawer in a plastic bag with your name.

Appropriate Clothing: Chemistry department regulations state that you must wear clothing in the laboratory that protects your skin from your neck to your ankles and feet when you are sitting, standing or reaching. Shoes that cover your feet entirely are required. Your best option for chemistry lab attire is a t-shirt, jeans without holes, and sneakers with socks. **If you attend lab in unacceptable attire, you will be sent home and will receive a zero for the lab.**

Unacceptable clothing includes, but is not limited to: sleeveless, low-cut (i.e. below the collar bone), bare midriff or tank tops, see-through, transparent or sheer clothing, pants that are ripped or have holes in the fabric of *any* size that expose your skin, Capri pants, shorts, short skirts, tights, leggings/jeggings, tight exercise pants, open-toed and/or open-heeled shoes (including Crocs, Birkenstocks or other clogs), sandals (with or without socks), ballet flats, slippers, moccasins, or any shoe that doesn't cover the **entire top and heel** of your foot, with *or* without socks.

Proper Dress: See picture. If you attend lab in unacceptable attire, you will be sent home and will receive a zero for the lab.

Gloves: Gloves serve two purposes: they protect your skin from potential contaminants and keep any potential contaminants inside the lab. You will be required to wear protective gloves for many lab activities. When you leave a lab, take the gloves off and throw them away. Get new gloves when you return to lab.

Contact Lenses: Contact lens wearers are encouraged to wear glasses in the laboratory. If you wear contact lenses in the laboratory, you must inform your Teaching Assistant (TA) of this at the beginning of the semester.

Hair: If your hair is longer than shoulder length you must tie it behind your head in order to avoid accidental contact with open flames or chemicals that might be on the lab bench. Rubber bands are available in the laboratory.

Food and Beverages: You may not eat, drink, or bring food into the laboratory.

Electronics: The only electronics allowed in the lab is that which is being used for instruction.

Handling and Disposal of Hazardous Materials: You will be required to follow the instructions printed in your lab manual or given to you by the Teaching Assistant (TA) or others for appropriate handling of hazardous materials and disposal of chemical waste.

Lab Clean Up: You are expected to promptly clean up spills and tidy the laboratory before leaving. Ask



for help if you are unsure of proper cleaning procedures.

Lab Check-out: Formal check-out begins on September 23rd. This means that any students dropping the course on or before September 22nd can check-out by merely completing a form at the storerooms. Formal check-out requires each student to inventory the contents of their drawer and replace lost or unacceptable items (chipped, broken, etc.). All students must complete one of these procedures if they check-in to our laboratories. Failure to check-out can result in a \$45 fee plus the cost of all items replaced in the drawer.

How Do I Learn From Lectures?

You can't learn from lectures if you do not attend them or do not think about the information as it is presented during lectures.

You are responsible for all material covered and announcements made in lectures.

Before Class

- Complete the assigned reading and review the notes from the previous class.
- Download and print any student notes for lecture from the course Brightspace site.

During class

- Write the date of the lecture on the student notes at the beginning of class if it is not on the first slide.
- Write information that is discussed in lecture but is not on the notes. The professor will give more information than is on the notes.
- Try to answer all the questions that the professor may present.
- Write down each step of every problem or example even if you do not understand the step. You can always ask about it later.
- Write a question mark next to things you don't understand so you can return to them after class.
- Use shorthand or abbreviations so that you can write quickly, but understandably.

After Class

- Review your notes while things are still fresh in your mind.
- Check your text in order to understand those items that you did not understand and marked in lecture. If necessary, use office hours with any CHM 12901 Teaching Assistant (TA) or professor to help you.
- Never miss lecture. Chemistry is cumulative. What is presented tomorrow depends upon your knowledge of what was covered today. If you will miss class, then get a friend to take notes for you.
- It will take you at least two hours out of class for every hour we spend in class in order to study and learn the material. This means about **8 hours of distraction-free studying and working with chemistry each week**. You may spend this time working on your lecture notes, reading the text, studying the required material, doing ALEKS homework, studying for exams, or other things. You may find yourself spending more than 8 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 study and do well.

Finally, your ability to understand what you are currently learning may depend on your already having mastered earlier material. So, study chemistry every day and correct your mistakes as they occur.

When Should I Do Homework?

Your assigned homework is considered to be a minimum requirement for keeping focused and learning the material in each chapter. You should practice solving additional problems from the text similar to those assigned and the additional (optional) problems available on ALEKS.

The following guidelines should be helpful if you want to do well in a technical course such as CHM 12901 which will probably involve relearning concepts or learning concepts that you did not have in your high school chemistry course. Learning new material requires constant re-enforcement, which means you may have to change your study habits.

- Read the assigned pages in the textbook before you attempt any of your homework problems.
- 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 10-15 minutes, go on to another a problem. Seek help from a CHM 12901 Teaching Assistant (TA) the next day during office hours. After a day or so, solve related problems in the text.
- Even though ALEKS usually asks for your final answer only, it is important that you write down your complete problem solutions. You must practice if you are going to be proficient and efficient during exam times and you must show your work to be eligible for the full points!