Dr. P.V. Ramachandran, WTHR 422, 765-494-5303, chandran@purdue.edu (1st 8 weeks)
Office Hour: Tuesdays, 3:00 - 4:00 pm or by appointment
Dr. Shelley Claridge, BRWN 4150C, 765-494-6070, claridge@purdue.edu (2nd 8 weeks)
Office Hour: to be announced in 2nd 8 weeks

Lecture and Lab Coordinators: JR Frey is the lecture coordinator, BRWN 1144, 765-494-5250; frey31@purdue.edu. Hilary Florian is the lab coordinator, BRWN 1144, 765-494-5250; hflorian@purdue.edu. The General Chemistry Office staff in BRWN 1144 can also answer questions you may have about course policies and procedures or you may direct your questions to Drs. Claridge or Ramachandran.

BRWN 1144, The General Chemistry Office, 765-494-5250 The General Chemistry office handles all the administrative details associated with the course. All non-chemistry questions about the course should be directed to this office. For example, go to BRWN 1144 to get grade checks, to discuss exam conflicts, to get clarification on course policies, to resolve grade issues, and to get signatures on university forms such as add/drop forms. Marybeth Miller and assistants Marlene Miller and Melissa Roadruck are able to help you with a variety of requests so you can maximize your success in general chemistry.

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

The course begins with a brief review of core concepts from high school chemistry and then moves into nuclear chemistry. The focus remains on materials at the atomic level while studying atomic spectroscopy and periodic trends. Models of bonding atoms move the course to a focus on ionic, covalent, and metallic compounds. At the molecular level, the shape and structure of compounds is studied next, followed by an examination of solutions, UV/Vis spectroscopy and calibration. A study of organic materials, such as hydrocarbons, biological molecules and polymers, comprises the middle section of the course. Solids, semiconductors, and nanoparticles are covered in the final section of the course, which focuses on inorganic materials.

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

There are 2 lecture sections of CHM 11500 taught by Professors Claridge and Ramachandran. There are about 15 graduate teaching assistants who teach laboratory and recitation sections.

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

CHM 11500 meets the science requirement of the university’s foundational core.

Lecture outlines, reading assignments, announcements, and other course information are available on the course Blackboard page. It is recommended you visit it often.
**Required Materials**

**Textbook and Online Homework:** In CHM 11500, you are required to complete homework assignments online using the McGraw-Hill Connect program. Connect includes an electronic version (ebook) of the textbook, *The Molecular Nature of Matter and Change*, 8th Edition, Silberberg. There are several options available for purchasing Connect access and a loose-leaf copy of the textbook. See the course Blackboard page for instructions. Materials may also be purchased in the bookstores, but the costs will likely be higher than those available through Blackboard.

**Lab Manual:** For lab, you are required to purchase the *CHM 11500 Laboratory Manual*, Purdue University, 2018-2019 Edition, ISBN 978-1-68036-842-0, Fountainhead Press, Inc., which is available in local bookstores. The lab manual is packaged and sold with the required laboratory notebook.

**Lab materials:** In addition to a lab manual, the following items are required for lab: a padlock for your assigned lab drawer (by Week 4, Jan. 28 - Feb. 1), a Sharpie (black, permanent ink) for marking lab glassware, and **approved safety goggles**, available at the bookstores, outside WTHR 200 during the first two weeks of classes, or from the storeroom on the 1st or 2nd floor in BRWN.

**Calculator:** A simple battery-operated scientific calculator with exponential, logarithm and square root functions is needed for exams. Two-line non-programmable calculators are allowed. Alpha-numeric and programmable calculators are **NOT** allowed for exams. Solar calculators do not function well in some areas of the Hall of Music. Exam approved calculators are available for purchase outside WTHR 200 during the first two weeks of class.

**iClicker+ or iClicker 2**

iClickers will be used in lecture for in-class quizzes, worth 30 points, 20 points plus 10 points of extra credit. There will be a quiz worth points in every class.

**Weekly Assignments:**

- Attend lecture, recitation, and lab.
- Do the reading assignment for lecture (see your lecture notes or Blackboard).
- Complete your Connect homework assignment (usually due each Tuesday at 11:59 pm).
- Prepare for lab: read the relevant lab manual chapter, do the textbook reading assignment for lab (see lab/lecture schedule, pp. 16-17), and complete the pre-lab exercises including the lab procedure outline.

**Week #1 Assignments:**

- Purchase required materials (see above).
- Purchase access to CONNECT.
- Begin/complete the first CONNECT homework assignment.
- Read all the information in this course packet.
- Read the relevant Reading Assignments and Learning Objectives (on Blackboard).
- Complete the safety certification available on the course Blackboard page with a score of at least 20/25 by Sunday, January 13 at 11:59 PM. **You must complete AND pass your safety certification before you can work in lab. See page 5.**
- Attend recitation and lecture.

**Late Registration** If you register late, notify the course coordinator, JR Frey no later than Fri., February 1 to see about the possibility of making up missed assignments.
Overview of CHM 11500 Activities and Policies

How to Study for CHM 11500  (written by Dr. John Nash and Dr. Marcy Towns)
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 8-12 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 Class
- Review your notes from the previous class.
- Review the assigned reading and read the sample problems within the assigned section of the textbook.

Use the textbook in ways that work best for you.
- Use the textbook as a reference when you study your lecture notes. Fill in any gaps and correct any information.
- Processing technical information will be more effective in the absence of Netflix, TVs, radios, headsets, etc. Turn your phone on silent and set it aside.
- With technical material, the subheadings often carry important information. This is different from the chapter headings in a novel that usually contain no information.
- Read technical material (like your Chemistry textbook) differently than you would read a novel. Read in short "chunks" and give yourself time to reflect and interpret the information presented. With technical material, it is often difficult to pick up the "story" in the second paragraph if you did not process the first paragraph.
- Try the problems in the book without looking at the solutions! If you have understood what you’ve read, then you should be able to do the problems. First, cover the solution and try the problem. Second, quickly look at the answer to see if you are correct. If your answer is incorrect, try re-reading the section to see if you missed anything. Third, look at your work again to find your mistake. Fourth, look at the solution of the problem presented in the book. The key is to force yourself to recall and apply material.

During Class
- Take notes!
- Write down each step of every problem or example even if you do not understand the step. You can always ask about it later.
- Try to answer all the questions and work all the problems that the professor presents.
- Write a question mark next to things you don't understand so you can return to them 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 in Boilercast.
- Turn off distractions (i.e. Netflix, other HW, social media, etc.).
After Class

- Review your notes while things are still fresh in your mind.
- Listen to the Boilercast lecture recordings on Blackboard to fill in things you missed.
- Attend graduate instructor (TA) office hours 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 will miss class, then get a friend to take notes for you or get the notes from the Boilercast 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 a problem. Seek help from a graduate instructor (TA) the next day during office hours. 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.

Practice, Practice, Practice

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

Sources of Help

There are several free sources of help for CHM 11500 students, including professor office hours, TA office hours (WTHR 116 C), Supplemental Instruction (SI, www.purdue.edu/SI or the app, www.purdue.edu/boilerguide), and the Chemistry Resource Room (WTHR 117B). Find more information in the “Resources” folder on Blackboard.

Review Packet

Chapters 1-5 will be covered very briefly during the first three lectures, so it is important that you review on your own. A review packet of the topics that you are expected to remember from high school chemistry will be distributed on the first day of lecture. Your teaching assistant will be available to answer your questions about these problems and you will also have time in recitation to work on them with your classmates.

Reading Assignments and Learning Objectives

- Reading assignments will be provided in lecture. Reviewing the assigned material prior to lecture and laboratory is recommended. Some of the material will be covered in lecture and some on your own. Reading assignments and learning objectives (RA LO) will also be posted on Blackboard.
- Your Connect account includes access to SmartBook, an interactive digital version of the textbook. SmartBook highlights key concepts, offers learning resources like slides and videos, and asks questions so you can gauge your comprehension. Instructions for using SmartBook are posted on Blackboard.
- 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. Learning Objectives are essentially topics on which exam questions are based.
Lectures

- Lecture attendance is required and is integral to learning the material presented.
- Student versions of the lecture slides may be posted on Blackboard prior to the lecture. These are outlines of the lectures and are not meant to substitute for lecture attendance.
- Recordings and slide capture of lectures may be viewed or downloaded using the Boilercast link on Blackboard.
- iClickers will be used for quizzes in lecture to gauge your comprehension of the material presented. Quizzes are worth 30 points, 20 points plus 10 points of extra credit (see p. 9). There will be a quiz worth points in every class.
- Cell phones, computers, iPods or 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 lecture, but please respect your classmates by not using Facebook, texting, surfing 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.

Recitation

Weekly recitation provides the opportunity for you to ask questions, work problems in groups, and prepare for the upcoming laboratory experiment. Bring your textbook, lab manual and homework and/or lecture questions with you to recitation.

You must attend recitation to receive credit for your pre-lab assignment for that week. (If you are absent from recitation, the prelab portion of your lab score for that week will be a zero.) Email your TA in advance, if you must miss recitation.

Homework (Connect)

- Each week you will have one homework assignment, usually due on Tuesdays at 11:59 PM. All links and due dates are listed on Blackboard and on the Connect assignment page.
- You will have two assignment submission attempts for each Connect assignment. Each assignment attempt will contain three question attempts. In the second assignment attempt, you are only presented with the questions you missed in your first attempt. Your score will be the best score of the two assignment submissions.
- Each homework assignment is worth 10 points. The lowest homework score will be dropped at the end of the semester.
- No time extensions are possible for homework assignments. Allow plenty of time to do your homework and get the highest possible score. If you wait until the last minute, you risk the possibility of technical difficulties, illness, or other situations interfering with your success.
- For help with technical issues, contact Connect customer service at 1-800-331-5094 or use the online form at https://mhedu.force.com/CXG/s/ContactUs. Firefox is the recommended browser for Connect.
Laboratory
Laboratory exercises are an integral part of CHM 11500 and are an opportunity for you to experience in a hands-on way the chemical concepts discussed in lecture.

Laboratory Attendance
- Lab attendance is required since CHM 11500 is a laboratory course. There are no make-up labs or excused absences, except those covered by the GAPS and MAPS policies (see p. 10).

- You are required to complete 9 of the 11 scheduled lab projects to pass the course. If you fail to complete or miss more than two labs, an automatic grade of “F” will be assigned for the course at the end of the semester.

A failure to complete (zero score) will be assigned in the following cases:
- being absent for any reason (except GAPS or MAPS approved absences)
- being dismissed from lab for an incomplete Safety Certification (score <20/25)
- being dismissed from lab for safety violations, including improper dress and goggle infractions
- arriving more than 10 minutes late
- leaving lab early or otherwise not completing the lab project and/or report
- inadequate preparation that hinders lab participation
- not contributing constructively to the group’s work in lab
- failure to submit a lab report
- not participating in preparation of the lab report

- You must complete the online safety certification found on Blackboard with a score of 20/25 or better by 11:59 PM on Sunday, January 13. You must confirm your score in the Blackboard grade center (My Grades link). If you have less than 20/25 at the due date, you will not be allowed to work in lab and will receive a zero. You will receive a zero for each lab you miss due to an incomplete safety certification.

- Endeavor to work as an effective member of your team.

- Complete the lab report appropriately:
  - Use ink and write neatly.
  - Label graphs and tables.
  - Use the data your group collected for the calculations and analysis.
  - Use correct units of measurement and significant figures.
  - Use chemical terms and concepts correctly.
  - Ensure results and conclusions are consistent with your data and observations.

- If you do not attend lab check-out (at your scheduled lab time) at the end of the semester, you will be charged $45 plus the cost of replacing dirty, damaged or missing equipment.
**Lab Preparation**

- Read the experiment and attend recitation to help you prepare.
- Answer the pre-lab questions found on Blackboard and prepare an experimental procedure in your lab notebook before coming to lab. Pre-lab assignments are due at the beginning of the lab period.
- Arrive on time, properly dressed, and prepared for lab work. If you arrive at lab more than 10 minutes late or improperly dressed, you will be asked to leave the lab and will receive a score of zero (failure to complete).

**Lab Safety**

Students’ safety in the laboratory is a priority and everyone is required to comply with the following safety regulations. Failure to comply will result in being sent home from lab with a score of zero, which counts as a lab absence.

- Follow all lab safety regulations (see below).
- Dress appropriately (see below).
- Goggles are required at all times in the laboratory, including during report-writing and lab check-out. If you are in lab and your goggles are not covering your eyes, you will be sent home and will receive a zero for the lab and the lab report (failure to complete).
- Wear gloves when specified.
- If your hair is longer than shoulder length you must tie it behind your head.
- Contact lens wearers are encouraged to wear glasses in the laboratory.
- Food and beverages are not allowed in the labs. (This includes water bottles.)
- Follow your instructor’s guidance on appropriate handling of hazardous materials and disposal of chemical waste.
- Promptly clean up spills and tidy the laboratory before leaving.
- Proper dress (clothing and shoes) is required. Your clothing must cover you from your neck (collarbone) to your ankles when sitting, standing or reaching. Your feet must be completely covered by your shoes.
If you attend lab in unacceptable attire, you will be sent home and will receive a zero for the lab (failure to complete), which counts as an absence. 

*Unacceptable* clothing includes, but is not limited to:
- tops that are sleeveless, low-cut or V-neck (below the collar bone), bare midriff or tank-style
- see-through, transparent or sheer clothing
- pants that are ripped or have *holes* in the fabric of *any* size
- tights or thin (translucent or transparent) *leggings*
- Capri or cropped pants
- shorts
- short skirts
- open-toed and/or open-heeled shoes (including Crocs, Birkenstocks or other clogs)
- sandals (with or without socks)
- **boat shoes**, ballet flats, slippers, moccasins, or any shoe that doesn’t cover the *entire* top of your foot and ankle, with *or* without socks

►If you come to lab wearing anything in the list above, you will be sent home and you will get a zero for that lab.

►Your best option for chemistry lab attire is a crew neck t-shirt, jeans without holes, and sneakers with socks.

**Lab Reports and Grades**
- Lab reports are due before leaving lab on the day lab work is completed and before the lab is closed, that is 10:20 AM, 2:20 PM or 5:40 PM. Lab reports submitted up to 24 hours late are worth 50%. You will be required to complete one formal group lab report this semester. Details will be provided by your lab instructor.
- Graded lab reports will be returned by your lab instructor **one week after** they are submitted. If you have questions about your grade, speak with your lab instructor or the course coordinator (JR Frey) within one week of the report being returned to you.

- To request a lab report regrade, a **written** request, which provides clear justification for the regrade, must be submitted to the Course Coordinator, JR Frey, **within one week** of the report being returned to you. Lab reports must be written in non-erasable ink to be eligible for regrades. Note that the entire lab report will be regraded and the adjusted grade will stand as the final grade for the report, even if it is lower than the original grade.

**Exams**
Exams are a chance for you to demonstrate your comprehension of the course material and are worth approximately 60% of your final grade. Your lowest exam score or ½ your final exam score will be dropped at the end of the semester.

**Spring 2019 hour exam schedule:**

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>Tuesday, Feb 12</td>
<td>6:30 - 7:30 pm</td>
<td>Elliott Hall of Music</td>
</tr>
<tr>
<td>Exam II</td>
<td>Wednesday, Mar 6</td>
<td>6:30 - 7:30 pm</td>
<td>Elliott Hall of Music</td>
</tr>
<tr>
<td>Exam III</td>
<td>Monday, Apr 8</td>
<td>8:00 – 9:00 pm</td>
<td>Elliott Hall of Music</td>
</tr>
</tbody>
</table>

►**Final Exam: time and place to be announced – see below**

- Attendance at exams is required. There are NO make-up exams and absences are not excused except those covered by the GAPS or MAPS policy (see p. 12). If you are absent for one exam, your score will appear as a zero until the end of the semester, at which time one zero score can be dropped. You will receive a score of zero for additional missed exams.

- If you have a direct conflict with another exam, class, or required university activity, contact the General Chemistry office (BRWN 1144) **at least one week before** the conflict to discuss your options. You will be asked to provide written verification of the conflict. If an emergency occurs, contact the General Chemistry office (BRWN 1144) as soon as possible.

- Exams I, II and III are each one hour in length. You should arrive at least 15 minutes before the exam start time. If you are more than 15 minutes late for an exam, you will not be allowed to take the exam and will receive a score of zero.

- Exams I, II, and III will be given in the Elliott Hall of Music. Before each exam you will receive an exam seat assignment (location, level, aisle, row, and seat) which will be posted in Blackboard. Make sure you check Blackboard before each exam. Take your PUID, your seat assignment, an appropriate calculator (see p. 2), and #2 lead pencils with you to the exam. You may not share a calculator with another student.
Final Exam

- The final exam is a 2-hour comprehensive exam. The time and place will be announced mid-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, Spring 2019

Each of the assigned course activities for CHM 11500 is worth the number of points listed below. Before course grades are finalized at the end of the semester the following scores will be dropped:

- your lowest homework score
- your lowest lab score (provided you have completed at least 9 of 11 labs). The 10 pt Course Policy Review and Excel exercises cannot be dropped; see p. 11, “Late Registration,” for instructions to make up these two assignments.
- your lowest exam score or ½ your final exam score, whichever is lower (see below)

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

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>130 pts (best 13 of 14 assignments at 10 pts. each)</td>
</tr>
<tr>
<td>iClicker quizzes</td>
<td>20 pts  (in-class quizzes, first 20 correct out of 30 quizzes)</td>
</tr>
<tr>
<td>Labs</td>
<td>270 pts (best 10 of 11 at 25 pts each plus 2-10 pt. exercises)</td>
</tr>
<tr>
<td>Exams</td>
<td>450 pts (3 at 150 pts each)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>300 pts (comprehensive)</td>
</tr>
<tr>
<td>Sub-total</td>
<td>1170 pts</td>
</tr>
<tr>
<td>Drop</td>
<td>-150 pts (drop lowest exam score or ½ final exam score, whichever is less)</td>
</tr>
<tr>
<td>Total</td>
<td>1020 pts</td>
</tr>
</tbody>
</table>

Extra credit.......20 pts.......(10 pts for LearnSmart chapters assigned on Blackboard, plus up to 10 pts for iClicker quizzes, 1 pt per quiz correct above 20)

► If you miss more than 2 labs (L1-11), your course grade will automatically be an F. Except for approved GAPS or MAPS leaves, there are no excused absences in CHM 11500.

The point total available for exams is 600 (4 x 150). Your dropped exam score 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. These scores will be compared with your scores on Exams I-III (T1, T2, and T3) and the lowest of these 5 scores will be dropped (i.e. not counted into your total points).

A total of 20 points of extra credit will be available; 10 points for completing certain LearnSmart modules assigned using the Connect system (see the Extra Credit folder on Blackboard), and 10 points for in-class iClicker quizzes.
At the end of the semester, the total scores for all students will be arranged in numerical order, the score that corresponds to the 99th percentile ($S_{99}$) will be determined, and then letter grades will be assigned based on this percentile score as follows:

- **A:** Total Score $\geq 0.90 \times S_{99}$
- **B:** $0.80 \times S_{99} \leq$ Total Score $< 0.90 \times S_{99}$
- **C:** $0.70 \times S_{99} \leq$ Total Score $< 0.80 \times S_{99}$
- **D:** $0.60 \times S_{99} \leq$ Total Score $< 0.70 \times S_{99}$
- **F:** Total Score $< 0.60 \times S_{99}$ or if you fail to complete 9 of the 11 lab projects

At various times during the semester, this approach will be used to create *tentative* grading scales which you can use to *estimate* your letter grade.

This system has several advantages:
- It lets you know several times during the semester how you are doing in the course.
- 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.*

- Check all your grades on Blackboard after each exam. If there are any errors or discrepancies, notify the Course Coordinator, JR Frey, within 2 weeks of the exam.
- Save all returned graded papers and your exams until after you have received your course letter grade for CHM 11500. To resolve any discrepancies, your paper(s) will need to be reviewed.

**UNIVERSITY AND COURSE POLICIES**

**Absences**

- Verified grief and military absences are the only excused absences in CHM 11500. Students who experience the death of a family member or close friend and students who are called into military service should contact the Office of the Dean of Students at 765-494-1747. (See below.)

- The lowest score in each category (lab, HW, exam) is dropped at the end of the semester to account for other types of absence, such as those due to illnesses, trips or conflicts. If you have concerns about how an absence will affect your course grade, contact your instructor or Course Coordinator JR Frey *at the time of the absence.*

- If you experience an absence that is expected to be for an extended period of time (normally a week or more), you should contact the Office of the Dean of Students at 765-494-1747. As a courtesy to the student, a member of the Dean of Students staff will notify your instructor(s) of the circumstances. *This intervention does not change in any way the outcome of the instructor's decision regarding your academic work and performance in CHM 11500.*
• **Grief Absence Policy for Students (GAPS)**  
If you experience the death of a family member or close friend, notify the Office of the Dean of Students at 765-494-1747. Scores for any missed assignments covered under a verified GAPS absence will be pro-rated (assigned a score based on your average grade for that type of assignment). See the Course Coordinator (JR Frey) for more information.

• **Military Absence Policy for Students (MAPS)**  
If you are required to complete mandatory military training, notify the Office of the Dean of Students (ODOS) at 765-494-1747 to request that a notice of the leave be sent to instructors. See the Course Coordinator (JR Frey) for more information.

### Adding/ Dropping/Changing Sections

<table>
<thead>
<tr>
<th><strong>CHEMISTRY DEPARTMENT DEADLINES FOR ADDING OR SWITCHING SECTIONS – SPRING 2019</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mon., Jan 14:</strong> last day to switch lab sections without instructor approval</td>
</tr>
<tr>
<td><strong>Fri., Jan 25:</strong> last day to switch lab sections with instructor approval*; last day to add CHM 11500 with instructor approval* if <em>not</em> already enrolled in another CHM course</td>
</tr>
<tr>
<td><strong>Fri., Feb 1:</strong> last day to switch from another CHM course to CHM 11500 with instructor approval*</td>
</tr>
</tbody>
</table>

*Add/Drop forms (Form 023) must be signed by your Academic Advisor and delivered to the General Chemistry office, BRWN 1144, to obtain a signature for the instructor.

<table>
<thead>
<tr>
<th><strong>UNIVERSITY DROP DEADLINES - Spring 2019</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mon., Jan 21:</strong> Last day to drop (cancel) a course via myPurdue without it appearing on your record.</td>
</tr>
<tr>
<td><strong>Mon., Feb 4:</strong> Last day to drop (cancel) a course with a grade of “W.”*</td>
</tr>
<tr>
<td><strong>Fri., Mar 8:</strong> Last day to drop (cancel) a course (with a passing or failing grade).</td>
</tr>
</tbody>
</table>

*Add/Drop forms (Form 023) must be signed by your Academic Advisor and delivered to the General Chemistry office, BRWN 1144, to obtain a signature for the instructor.

► **Late Registration**  
If you register late, notify the course coordinator no later than **Fri., Feb., 1** to see about the possibility of making up missed assignments.

**Course Drop and Lab Drawer Check-Out**  
If you drop CHM 11500 after having checked into a lab drawer, it is your responsibility to check-out of your assigned drawer during your scheduled lab period. Failure to check-out of lab will result in your padlock being cut, a $45 fee, and forfeiture of the right to determine the acceptability of all locker drawer equipment.  
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.
**Disability Accommodations**
If you require accommodations to access course activities or materials, the accommodations must be described and approved by the Disability Resource Center, Young Hall Room 830, 302 Wood Street, 765-494-1247, www.purdue.edu/drc. To implement accommodations, you must follow the instructions in the letter provided by the Disability Resource Center. **Take a copy of this letter to the General Chemistry Office (BRWN 1144) within the first three (3) weeks of the semester or within one week of the date of the letter to discuss your accommodations.** Letters must be received in BRWN 1144 at least one week before an exam to be eligible for accommodations (unless your letter is dated within a week of the exam).

**Purdue’s Honor Pledge**
“As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue.”  (https://www.purdue.edu/provost/teachinglearning/honor-pledge.html)

**Academic Integrity**
All students are expected to be familiar with Purdue’s policies on academic integrity (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 11500, academic integrity means “doing your own work” at all times. Discussion of chemical concepts is encouraged, but sharing your answers and work on social media for the express purpose of letting other students copy it is not acceptable. Such a use of technology does not help you learn the material and is considered academic dishonesty.

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

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

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

**Mental Health**
Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of 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 through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.
Emergencies

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor’s control. Relevant changes to CHM 11500 will be posted on the course Blackboard site or can be obtained by contacting the instructors or TAs via email or the General Chemistry office via phone at 765-494-5250.

You are expected to read your @purdue.edu email on a frequent basis.

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

In the case of a major campus emergency involving a shelter-in-place, all laboratory experiments will be halted while students shelter in lab. Students’ lab grades will not be penalized in this situation.
<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Date</th>
<th>Lecture Topics for Spring 2018</th>
<th>Textbook Reading Assignment</th>
<th>Lab (lab manual chapter)</th>
<th>Lab Reading Assignment</th>
<th>Exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1/8</td>
<td>Introduction to course and policies</td>
<td>Course Packet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1/10</td>
<td>Review</td>
<td></td>
<td>Check in, Safety Procedures, The Basics of Excel (CH 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Matter and energy; SI units and unit conversions; significant figures; conservation laws; atomic structure and elements; ionic and covalent compounds</td>
<td>1.1, 1.4, 1.5, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 2.9</td>
<td>Safety Certification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>1/15</td>
<td>Review</td>
<td></td>
<td>L1: How Can We Use Chemical Interactions to Characterize Compounds? (CH 5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Moles and molar mass; molecular formula; balancing chemical equations; stoichiometry and limiting reagents</td>
<td>3.1, 3.2, 3.3, 3.4</td>
<td><strong>Safety Certification due Jan 13 at 11:59 PM. You will not be allowed to work in lab if you have not completed the Safety Certification with a minimum score of 20/25.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>1/17</td>
<td>Review</td>
<td></td>
<td>textbook 2.8, 4.1, 4.2, 4.3, 4.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Concentration terms; ionic equations; precipitation reactions and solubility rules; acid-base reactions; gas laws</td>
<td>4.1, 4.2, 4.3, 4.4, 5.3, 5.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>1/22</td>
<td>Nuclear Chemistry</td>
<td>CH 24</td>
<td>no lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>1/24</td>
<td>Nuclear Chemistry</td>
<td>CH 24</td>
<td>MLK Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>University Holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>1/29</td>
<td>Nuclear Chemistry</td>
<td>CH 24</td>
<td>L2: How Can We Make Accurate and Precise Measurements of Physical Properties? (CH 2)</td>
<td>textbook 1.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>1/31</td>
<td>The Atom and Spectroscopy</td>
<td>CH 24</td>
<td><em><strong>You must have your own lock for your lab drawer this week.</strong></em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Atomic Spectroscopy, ionization energies, shells</td>
<td>7.1, 7.2, 7.4 (part, pp. 314-315, 319-322)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>2/5</td>
<td>The Atom and Spectroscopy</td>
<td>CH 24</td>
<td>L3: How Can We Use a Physical Property to Develop a Separation Method? (CH 3)</td>
<td>textbook 1.5, 4.1, 4.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>2/7</td>
<td>The Atom and Spectroscopy</td>
<td>CH 24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Energy of orbitals, electron configurations</td>
<td>8.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>UV/Vis spectroscopy, calibration</td>
<td>13.1, 13.4, 13.5 and pp. 308-309</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>2/12</td>
<td>Trends in Chemical Reactivity</td>
<td>CH 24</td>
<td>L4: How Can Absorption of Light Be Used to Determine the Concentration of a Compound in Solution? (CH 9)</td>
<td>textbook 4.1 and pp. 308-309</td>
<td>Exam I</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>2/14</td>
<td>Periodic trends in atomic properties</td>
<td>CH 24</td>
<td></td>
<td></td>
<td>Tues, Feb 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chemical bonding and trends</td>
<td>8.3, 8.4, 2.7, 2.8</td>
<td></td>
<td></td>
<td>6:30 p.m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Elliott</td>
</tr>
<tr>
<td>7</td>
<td>13</td>
<td>2/19</td>
<td>Trends in Chemical Reactivity</td>
<td>CH 24</td>
<td>L5: Where's the Iron? (Ch 10)</td>
<td>textbook 4.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>2/21</td>
<td>Bond energies, lattice energy</td>
<td>CH 24</td>
<td></td>
<td>and pp. 308-309</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cont.</td>
<td>CH 24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>15</td>
<td>2/26</td>
<td>Review</td>
<td>CH 24</td>
<td>L6: How Can Three Small Molecules Be Used to Synthesize a Calcium Channel Blocker? (CH 4)</td>
<td>textbook 4.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>2/28</td>
<td>Molecular Structure: Lewis structures, electronegativity/ polarity, formal charge</td>
<td>10.1, 9.5</td>
<td></td>
<td>and pp. 308-309</td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Lecture</td>
<td>Date</td>
<td>Lecture Topics for Spring 2018</td>
<td>Textbook Reading Assignment</td>
<td>Lab (lab manual chapter)</td>
<td>Lab Reading Assignment</td>
<td>Exams</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>------</td>
<td>-------------------------------</td>
<td>----------------------------</td>
<td>--------------------------</td>
<td>------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>9</td>
<td>17</td>
<td>3/5</td>
<td>Molecular Structure</td>
<td>10.2, 10.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Resonance, shapes of molecules, molecular polarity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>3/7</td>
<td>Molecular Structure</td>
<td>12.3, 13.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intermolecular forces</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>3/12</td>
<td>No Classes -- Spring Break</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>19</td>
<td>3/19</td>
<td>Organic Chemistry</td>
<td>11.1, 11.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hybridization (Valence Bond Theory)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>3/21</td>
<td>Organic Chemistry</td>
<td>15.1, 15.2, 15.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Organic compounds, functional groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>21</td>
<td>3/26</td>
<td>Organic Chemistry</td>
<td>15.5, pp. 516-520</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Polymers</td>
<td></td>
<td>L7: How Does Molecular Shape Affect Polarity? (CH 11)</td>
<td>textbook 10.1-10.3</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>3/28</td>
<td>Organic Chemistry</td>
<td>Infrared spectroscopy, bond energies</td>
<td>L8: Do You See the Light? (CH 12)</td>
<td>p. 655 (Table 15.5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Polymers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>23</td>
<td>4/2</td>
<td>Biochemistry</td>
<td>13.2, 15.6, and pp. 431-432</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Biological molecules (sugars, carbohydrates)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td>4/4</td>
<td>Biochemistry</td>
<td>13.2, 15.6, and pp. 431-432</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Biological molecules (lipids, DNA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Phase Changes, Solution Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td></td>
<td>4/11</td>
<td>Solution Properties</td>
<td>13.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Colligative Properties</td>
<td></td>
<td>L10: How Can We Isolate Biologically Important Molecules? (CH 14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>27</td>
<td>4/16</td>
<td>Inorganic Chemistry</td>
<td>12.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Crystal Structures</td>
<td></td>
<td>L11: What do Crystals Look Like on the Atomic Scale? (hand-out)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
<td>4/18</td>
<td>Inorganic Chemistry</td>
<td>12.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Crystal Structures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>29</td>
<td>4/23</td>
<td>Inorganic Chemistry</td>
<td>12.7 and The Future of Energy Use, pp. 281-285</td>
<td>Check-out</td>
<td>(You must attend or be charged a $45 failure-to-check-out fee.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Advanced Materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>4/25</td>
<td>Review</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Final Exam Week (4/29-5/4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td></td>
<td></td>
<td>Final Exam</td>
<td></td>
<td></td>
<td>Final Exam TBD</td>
<td></td>
</tr>
</tbody>
</table>