Instructor: Dr. Beatriz Cisneros; WTHR 116K; 765-494-5310; cisneros@purdue.edu

Lectures: Monday, Tuesday, Wednesday, Thursday, 1:00 – 1:50 PM, WTHR 104

Labs: Tuesday and Thursday, 8:00 – 10:50 AM

Recitations: Monday and Wednesday 9:50 – 10:40 AM

TA Supervisor: Jared Breakall, jbreakal@purdue.edu, BRWN 1144, 765-494-5250. Jared supervises the lab teaching assistants while they are teaching lab. He can assist you with lab procedure questions, grade inquiries, and course policy issues.

General Chemistry Office, BRWN 1144, 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, to change your schedule, and to get signatures on university forms such as add/drop forms. Staff members Mrs. Linn and Mrs. Roadruck are able to help you with a variety of requests so you can maximize your success in general chemistry.

In CHM 11500, General Chemistry I, the following topics will be covered:

- Review of chemical concepts
- Nuclear chemistry
- The atom and spectroscopy
- Trends in chemical reactivity
- Molecular structure
- Organic chemistry
- Solution properties
- Inorganic chemistry and thermochemistry

Course Information Blackboard http://www.itap.purdue.edu/learning/tools/blackboard/

Lecture outlines, reading assignments, announcements, and other course information are available on the course Blackboard page. We recommended you visit it often.

Foundational Core: This course meets the science requirement of Purdue University's foundational core curriculum. Learning Objectives will be provided in lecture and on Blackboard.

Required Materials


• A **simple scientific calculator** will be necessary for exams. Alpha-numeric and programmable calculators will not be allowed for exams.

• **Approved chemical splash goggles** are available at the bookstores or from the chemistry storeroom on the 1st or 2nd floor in BRWN.

• A **black, permanent ink Sharpie pen** for marking lab glassware.

• A **padlock** for your assigned lab drawer (by June 21).

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**Things That You Must Do During Week #1**

- Complete the safety certification available on the course Blackboard page with a score of at least 20/25 before lab by 11:59 PM on June 13, 2018. This exercise is worth 15 points toward your final grade.

- Read all the information in this course packet.

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**SOURCES OF HELP FOR STUDENTS IN CHEMISTRY 11500**

**Professor** – The professor will hold office hours by appointment! E-mail address (the best way) and phone number are on the cover page of this packet of information.

**TA Office Hours** -- Each CHM 11500 TA will hold a one-hour office hour each week in BRWN 1106 where any CHM 11500 student can go to get help with chemistry from a CHM 11500 TA at no charge. Your TA is the person who has the closest contact with you in this course. The teaching assistants in the Department of Chemistry are not just “a bunch of grad students”. They are graduate students who have been through a training program in teaching and tutoring skills and may have several years of experience in teaching. If you are having a problem with some aspect(s) of the course, go first to your 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 hours with a classmate or small group if you feel uncomfortable going alone.** You may attend the office hours of any of the TAs, not just yours.

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**ADVICE FROM YOUR PROFESSOR**

**A University is like a Health and Fitness Center for your Brain.**

When you pay tuition to an academic institution such as Purdue, it is like paying fees to join a Health and Fitness Center. Purdue is a place to exercise and develop your brain “muscle”; health clubs or fitness centers focus on exercising other muscles of your body. Your membership in a “mental exercise club” such as Purdue gives you the opportunity to take advantage of the resources Purdue makes available to exercise your brain just as joining a health club gives you the opportunity to take advantage of the health club’s
equipment and resources. Simply being a member of either “club” does not guarantee success. As with a health club, the benefit you gain from a “mental exercise club” depends on the amount, and more importantly, the quality of effort you exert.

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 lecture. Lectures will be held in WTHR 104 and the lecture times are listed on the front cover of this packet and are on your schedule.

Before Class
- Complete the assigned reading and review the notes from the previous class.

During Class
- Write the date of the lecture on the student notes at the beginning of class.
- Write information that is discussed in lecture, but is not on the notes. The professor will give you more information than is on the notes.
- Try to answer every question the professor asks and work every problem presented in lectures.
- 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 your CHM 11500 TA 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 spent in class in order to study and learn the material. You may spend this time working on your lecture notes, reading the text, studying the required material, studying for exams or other things. You may find yourself spending more time than estimated per week if your math skills need improvement or if you took a chemistry course a few years ago. But 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 using additional problems from the text similar to those assigned.
The following guidelines should be helpful if you want to do well in a technical course such as CHM 11500 which will probably involve re-learning concepts or learning concepts that you did not have in your high school chemistry course. Learning new material requires constant reinforcement which means you may have to change your study habits.

- 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 problem. Seek help from a CHM 11500 TA the next day during office hours. After a day or so, solve related problems in the text.

- It is important that you write down your complete problem solutions. You can fool yourself into believing you understand if you do not write your steps. You must practice if you are going to be proficient and efficient during exam times!

**YOU WILL EARN AN AUTOMATIC GRADE OF “F” IN CHM 11500 THIS SEMESTER IF YOU:**

- miss more than 2 of the 13 scheduled laboratory sessions.

OR

- fail to complete more than 2 laboratory reports with your team. Completion of a lab project includes the following equally important components:
  * attendance in the laboratory
  * participation in the laboratory work
  * participation in the preparation of the lab project report and
  * completion and submission of a satisfactory lab project report. Failure to submit a lab report counts the same as a missed lab.

**Changing Sections/Adding/Dropping**

<table>
<thead>
<tr>
<th>UNIVERSITY DEADLINES – Summer 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sun. Jun. 17:</strong> Last day to cancel (drop) a course without it appearing on your record.</td>
</tr>
<tr>
<td><strong>Fri. Jun 22:</strong> Last day to cancel (drop) a course without a grade.</td>
</tr>
<tr>
<td><strong>Wed. Jul 11:</strong> Last day to cancel (drop) a course (with a passing or failing grade).</td>
</tr>
</tbody>
</table>

**Late Registration** If you register late, notify your instructor no later than June 23 to see about the possibility of making up missed assignments.

**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.
CHEMISTRY 11500 POLICIES AND PROCEDURES  
Summer 2018

Each CHM 11500 professor is aware that chemistry can be difficult material for some people to learn. However, each professor understands that learning chemistry is not impossible and that a variety of different teaching and learning methods may assist with the learning process. In CHM 11500 you will have the opportunity to learn individually, with partners and in groups in lectures, recitations, labs and outside of class study time. Experts report that to adequately learn new material in college, two (2) hours of effective study outside regularly scheduled class time each week per one (1) credit hour is required. CHM 11500 is a 4-credit course so this suggests that eight (8) hours per week (16 during the summer, as we have 4 lectures per week) of effective study outside of regular class time is necessary to learn what the professors want you to learn. The department provides several sources of help for you in this process at no cost. These include the professor and the CHM 11500 TAs.

Everyone is aware of the diversity of skills and personal issues within this course so we are concerned that each individual be treated as fairly as possible in all aspects of the course. Consequently, we have established rules, policies and procedures that apply to all students in CHM 11500. As a student in CHM 11500, you are responsible for knowing and following the rules, policies and procedures.

Determining Your Course Grade  
*No extra credit will be available.*

Each of the activities will be assigned a given number of points listed below.

The total number of points for CHM 11500 is distributed as follows

- Exams (3 at 100 pts each) ..................300 pts
- Final Exam (comprehensive) ..........200 pts
- Homework (best 7 of 8 homework) ...140 pts
- Lab Projects ................................290 pts (best 11 at 25 pts each plus Safety Cert., 15 pts)
- Total ........................................930 pts

After the Final Exam your course grade will be based on the following guaranteed point totals for the semester. Lower cutoff ranges may be used if the faculty considers it to be appropriate.

- A:  837 – 930 pts
- B:  744 – 836 pts
- C:  651 – 743 pts
- D:  558 – 650 pts
- F:  0 – 557 pts  OR if you **miss or fail to complete** more than 2 of the 13 scheduled lab sessions.

**YOU WILL EARN AN AUTOMATIC GRADE OF “F” IN CHM 11500 THIS SEMESTER IF YOU MISS OR FAIL TO COMPLETE MORE THAN 2 OF THE 12 SCHEDULED 25-POINT LAB PROJECTS.**
FAIL TO COMPLETE INCLUDES:
- missing more than 2 laboratory sessions
- failure-to-complete a laboratory report as directed

Completion of a lab project includes the following equally important components:
1) attendance in the laboratory
2) participation in the laboratory work
3) participation in the preparation of the lab project report
4) completion and timely submission of a satisfactory lab project report. Failure to submit a lab report counts the same as a missed lab.

Academic Integrity
Your integrity is your greatest asset.

The CHM 11500 professors view academic dishonesty as a serious offense and hope cheating is never a problem in this course. The office of the Dean of Students publication, Academic Integrity: A Guide for Students, is available at [http://www.purdue.edu/odos/osrr/academic-integrity/index.html](http://www.purdue.edu/odos/osrr/academic-integrity/index.html) and is an excellent summary of expectations for Purdue students.

Consequences of academic dishonesty -- (that is, cheating)
For any cheating on an exam, the student(s) involved will
- receive an “F” for the course.
- be reported to the Dean of Students Office.

For a first offense involving a laboratory, the student(s) will
- receive a grade of zero (0) for that lab and it will count as a failure to complete the lab.
- lose any benefit of the doubt for a borderline grade at the end of the semester.
- be reported to the Dean of Students Office.

For a second offense involving a laboratory, the student(s) will
- receive an “F” for the course.
- be reported to the Dean of Students Office.

Examples of Academic Dishonesty -- (cheating) -- 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, save yourself some heartache and ask before acting.

1. Copying or possessing an unauthorized crib or unauthorized information (written or electronic) during an exam.
2. Copying from another student’s exam or work; allowing another student to copy your work.
3. Copying lab data or a lab report; giving your data or lab report to someone else to copy. This includes files on computer disks as well as paper copies.
4. Changing data for a lab report to fit the perceived answer (that is, what you think the answer should be).
5. Using someone else’s data in a lab report as if it were your own.
6. Submitting a lab report or other work that you did not do.
Attendance/Absences

There are no make-up or excused absences for labs or exams, except those covered by the GAPS (grief absence), or MAPS (military absence) policies or direct conflicts with another exam, or class required university activity.

- **GAPS** – Death of an immediate family member. A student should contact the ODOS to request that a notice of his or her leave be sent to instructors. The student will provide documentation of the death or funeral service attended to the ODOS. Given proper documentation, the instructor will excuse the student from class and provide the opportunity to earn equivalent credit and to demonstrate evidence of meeting the learning outcomes for missed assignments or assessments.

- **MAPS** – Military Absence Policy. A student should contact the Office of the Dean of Students (ODOS) to request that a notice of the leave be sent to instructors as soon as the student is informed of the dates of mandatory military training. Given proper documentation, the instructor will excuse the student from class and provide the opportunity to earn equivalent credit and to demonstrate evidence of meeting the learning outcomes for missed assignments or assessments.

- **A direct conflict with another exam, class or required* university activity.** An absence form for this type of conflict must be completed (in BRWN 1144) with an attached verification letter at least one week (7 calendar days) before the conflict. We will try to accommodate legitimate conflicts but you will need to take care of the paperwork before the conflict. The excuses and paperwork will not be handled or considered after the conflict has occurred.

*Club activities will not be excused unless the activity is a professional activity directly associated with your major.

If you will miss more than two (2) labs due to NCAA athletics, PMO, band or religious activities, you must provide documentation to the staff in BRWN 1144. Otherwise you will receive no credit for lab absences that are associated with these activities although with documentation, these zeroes will not count as “failure to complete” labs.

If you miss an exam or lab for some reason that is not on the list above, that is, an unexcused absence, that score will not be considered for prorating.

**Reporting Absences** -- Telling your graduate instructor that you have missed or will miss an exam or lab is not sufficient. Absence forms must be completed in BRWN 1144.

- **Conflicts You Know About Before an Exam or Lab** -- An absence form for this type of conflict must be completed with an attached verification letter at least one week (7 calendar days) before the conflict. These forms may be obtained in BRWN 1144. We will try to accommodate legitimate conflicts but the excuses and paperwork will not be handled after the conflict has occurred.

**ACADEMIC ACCOMMODATIONS FOR DISABILITIES**

If you require accommodations to access course activities or materials, the accommodations must be described and approved by Disability Resource Center, Room 830, Young Hall, 302 Wood Street, 765-494-1247, [www.purdue.edu/drc](http://www.purdue.edu/drc). To implement accommodations you must follow the instructions listed as “Responsibilities of the Student” in the letter prepared by the Disability Resource. Give one copy of the accommodation letter to your instructor, not your TA. **Take a copy of the accommodation letter to Mrs. Melissa Roadruck in BRWN 1144 within the first week of the semester to discuss your accommodations.** If you have accommodations identified and approved during the semester, you are encouraged to initiate a meeting with Mrs. Roadruck to discuss the accommodations within one (1) week of the date of the letter. Timely notification of your accommodation is critical for timely implementation.
Course Activities

Readings -- Reading assignments will be given for each lecture. These assignments will be announced in lectures, posted on Blackboard and can be found on the lecture/lab schedule.

Lectures -- You will be responsible for any announcements or course changes that are made in all lectures.

- Lecture notes will be available in Blackboard.

The use of cell phones, iPods or other electronic devices not being used for instructional purposes are distracting for everyone. The use of these types of devices in the classroom, in addition to talking with your neighbor, reading the newspaper, etc., is considered to be inappropriate behavior for group learning environments where others are trying to listen and understand what is going on. Please respect your colleagues and turn off this equipment in lectures as well as in recitations and labs.

Exams -- Attendance is required. We do not give make-up exams in CHM 11500.

Take your Purdue ID, a calculator with exponential, logarithm and square root functions and a #2 lead pencil with you to the exam. Cell phones and programmable or alpha-numeric calculators may not be used during an exam. You may not share a calculator with another student.

- If you are absent for an exam, follow the procedures for reporting absences.
- Students will not be allowed to leave the examination area during the first 15 minutes of the scheduled exam period. Students may arrive late for the exam in this 15-minute window. After the first 15 minutes, no one will be allowed to enter the examination area.
- If you arrive late for an exam you will not receive additional time to complete the exam.

Hour Exams -- Two multiple choice exams will be evening exams.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Exam I</td>
<td>Monday, June 25, 2018</td>
<td>1:00 – 1:50 PM</td>
<td>WTHR 104</td>
</tr>
<tr>
<td>Exam II</td>
<td>Monday, July 9, 2018</td>
<td>1:00 – 1:50 PM</td>
<td>WTHR 104</td>
</tr>
<tr>
<td>Exam III</td>
<td>Wednesday, July 25, 2018</td>
<td>1:00 – 1:50 PM</td>
<td>WTHR 104</td>
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<tr>
<td>Final Exam</td>
<td>TBD</td>
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Wait until you know the date of the final exam before you make travel plans that might conflict with the exam. Early exams will not be given to accommodate your travel plans.

The final exam will be a two-hour exam. University policy on Final Exams states: “Students scheduled for more than two (final) examinations in one calendar day are entitled to reschedule any examinations in excess of two. It is the responsibility of the student to make necessary arrangements before the last week of regularly scheduled classes.”

Recitation -- You will be responsible for any information given or problems done in these scheduled weekly sessions. These sessions provide you with the opportunity to ask questions and work with your classmates and graduate instructor in small groups. Recitation is not a time to begin your homework assignments. Unannounced quizzes will be given during the recitation period.

You will have time to ask questions. However, 50 minutes is not sufficient time to answer all the questions that all students may have. If you have difficulties or have questions about certain problems, you should go to the CHM 11500 graduate instructors’ office hours and ask for help. You can attend these office hours by yourself, with a classmate or in a small group.

Laboratories -- Attendance is required since CHM 11500 is a laboratory course. You and your partner or group will complete each lab project including the lab report during the regularly scheduled laboratory time unless otherwise noted in the lab schedule. You will not be able to make-up a missed lab or reschedule an individual lab, but you will be responsible for the material covered in any lab you miss since questions based on the lab projects
may appear on exams. You will fail CHM 11500 if you miss more than 2 of the twelve (12) scheduled lab projects. If you miss a lab, follow the procedures for reporting absences.

You are expected to arrive on time, properly dressed and prepared for lab work when you arrive. 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 for the day. You will not get a grade for that lab and it will count as a fail to complete lab. If you arrive 1-10 minutes late for lab, answers to pre-lab questions will be considered late and not accepted for grading.

The graduate instructors must close the laboratories by the end of your scheduled lab period. At that time all equipment must be cleaned and put away, lab drawers locked and lab reports turned in.

**Lab Reports** -- Lab reports will be due before leaving lab the day lab work is completed and the lab is closed for that lab period. Graduate instructors do not have authority to change the date or time when work is due. Lab reports must be written in ink on the report sheets that you will get in lab. Grading criteria for lab reports are described below.

**Late Lab Reports** -- Fifty percent (50%) of the maximum points will be deducted from the score of all members of a group for any lab report that is up to 24 hours late. No laboratory report will be accepted and graded beyond 24 hours after the report is due. Neither student (nor the entire group) will receive a score for a lab if the report is more than 24 hours late and it will count as a “Failure to Complete” laboratory.

**IN ORDER TO GET ANY CREDIT FOR PRE-LAB, YOU MUST PARTICIPATE IN THE LAB THEN HELP PREPARE AND SUBMIT A LAB REPORT.**

**Caution about Working with a Lab Partner** -- You will be working with a partner for most of the laboratory projects. Each pair or group will turn in a single lab report unless otherwise stated. While we encourage you to discuss concepts with other members of your class, the lab reports are to be unique efforts by you and your partner or group. You and your partner or group share the responsibility for writing lab reports that honestly reflect your work. It is also your responsibility as a team to ensure that everyone whose name is on the report participated in preparing it.

**Grading Criteria for Lab Reports** -- Your lab reports will be graded primarily on correctness and completeness.

- The report is complete.
- The report is organized correctly.
- The presentation is legible and logical. Heading and subheadings are used to identify or describe the contents of a particular section. Graphs and tables have titles to describe the contents. Sentences are complete.
- 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.

If a student forfeits the responsibility of preparing a lab report to a partner (or other students in the group) and that student changes or falsifies data or plagiarizes any or all parts of the report, then ALL students share the negative consequences associated with academic dishonesty, that is, cheating.
Grading Questions -- If you have a question about the score on any of your lab work, first ask your graduate instructor for clarification. If the graduate instructor cannot answer your questions, you may take the graded paper to the lab supervisor in BRWN 1144 for possible re-grading. You will need to do this within one (1) week (that is, 7 calendar days) after the graded paper has been returned to you. Your work will have to have been typewritten or written in ink for a possible re-grade. The lab supervisor will re-grade the entire paper, not just the part where you think an error has been made.

Saving Graded Papers -- Save all returned graded papers and your exams until after you have received your course letter grade for CHM 11500. If you claim that an incorrect grade has been recorded for you, we will need to see your paper(s) before we can change the grade.

Checking Your Scores -- Shortly after each of the first two exams, all your scores to date will be available to you at the Blackboard course site. You are expected to check your scores when they are posted. You must report any errors to your graduate instructor or the lab supervisor within one (1) week of the time they were posted. All disputed scores must be resolved with your TA or instructor before the final exam. There will be no score correction considerations after the final exam.

Changing Sections -- During week 1 of the summer session you may be asked to change your lab section on the Banner registration system in order to even out the number of students in the lab sections.

To change a lab section after week 1, take your Drop/Add form (Form 23) to BRWN 1144. We will NOT make a section change for students after week 2 of the semester. 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.

LAB CHECK-OUT
Dropping the Course -- If you drop CHM 11500 after having checked into a locker drawer, it is your responsibility to check-out of your locker drawer during the next regularly scheduled lab. If you do not check out immediately, then you must go to lab at the regularly scheduled check-out time during week 8 and check out of your locker drawer.

Scheduled Lab Check-Out -- Lab check-out will start at the regularly scheduled lab time and continue during the regularly scheduled lab time until the graduate instructor has checked equipment in each lab drawer of those students who are present. If this process takes less than the full three (3) hours, then the graduate instructor will close lab and the deadline for that lab’s checkout will be declared. We will not be able to accommodate a check-out process for any student who arrives after this scheduled/designated check-out period.

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

- his/her padlock will be cut (this may also happen for students who arrive late for lab in Week 8)
- he/she will be charged a minimum $45 fee and
- he/she forfeits the right to determine the acceptability of all locker drawer equipment. You will be charged for all equipment that is in unacceptable condition.
SAFETY CONSIDERATIONS IN LABS

Safety policies MUST be followed in the laboratories. Everyone’s safety is a primary concern in laboratory instructional situations and must be taken very seriously by everyone in a lab. We don’t establish and enforce rules to harass students, graduate instructors or staff but we must comply with EPA regulations to create a safe working environment for everyone. Ultimately it is everyone’s responsibility to watch out for everyone’s safety in a laboratory setting. The rules are based on many years of experience by the CHM 11500 professors and staff.

**Failure to comply with the safety regulations has serious consequences.** If you are dismissed from lab for violation of safely regulations or departmental lab dress code, you will not get a grade for that lab and it will be counted as an unexcused absence and as a failure to complete lab.

SAFETY POLICIES IN CHEMISTRY LABS AT PURDUE

**Chemical Splash Goggles** -- Each student must have approved chemical splash goggles (not safety glasses) and wear these approved chemical splash goggles *in the laboratory at all times*, 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 goggles as required. Chemical splash goggles may be purchased at the local bookstores or the chemistry storeroom.

**Appropriate Clothing** -- Chemistry department regulations state that you must wear clothing in the laboratory that protects your skin from your neck to your ankles, feet and toes when you are sitting, standing or reaching. You are expected to arrive at lab properly dressed for lab work. 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 acceptable clothing. *Unacceptable* clothing includes, but is not limited to: sleeveless or bare midriff tops, and low cut necklines, pants that are ripped or have holes in the fabric that expose your skin, shorts, short skirts, open-toed and/or open-heeled shoes and sandals (with or without socks), ballet-type shoes or house slippers, flip flops.

**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 for any reason, take the gloves off and throw them away. Get new gloves when you return to lab.

**Contact Lenses** -- Wearing contact lenses in the laboratory is not a wise idea; you are encouraged to wear glasses instead. If you wear contact lenses in the laboratory, you must inform your graduate instructor 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 – (NOT ALLOWED) -- You may not eat, drink or bring food into the laboratory. This includes water bottles.

Electronics -- The only electronic equipment allowed in the lab will be calculators and equipment 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 graduate instructor or others for appropriate handling of hazardous materials.

**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 this course 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.
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<th>Week</th>
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<th>Lecture</th>
<th>Lecture Topic</th>
<th>Textbook Chapter/Section</th>
<th>Date</th>
<th>Lab (Lab Manual Chapter)</th>
<th>Lab Reading Assignment</th>
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<td>11-Jun</td>
<td>1</td>
<td>CHM 11500 Introduction and Review</td>
<td>Course Packet 1.1, 1.4, 1.5</td>
<td>12-Jun</td>
<td>Check in, Safety Procedures, Course Policy Review</td>
<td>Course Packet</td>
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<td>12-Jun</td>
<td>2</td>
<td>Review: Matter and energy; SI units and unit conversions; significant figures; conservation law; atomic structure and elements, ionic and covalent compounds.</td>
<td>2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 2.9</td>
<td>12-Jun</td>
<td><strong>Safety Certification must be completed before you can work in lab</strong></td>
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<td>13-Jun</td>
<td>3</td>
<td>Review: Moles and molar mass, molecular formula, balancing chemical reactions, stoichiometry and limiting reagent; concentration terms; gas law.</td>
<td>3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4, 5.3, 5.4</td>
<td>14-Jun</td>
<td>L1: How Do We Make Accurate and Precise Measurements of Physical Properties? (Ch 2)</td>
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<td>14-Jun</td>
<td>4</td>
<td>Nuclear Chemistry: Radioactive Decay and Nuclear Stability; Kinetics of radioactive decay</td>
<td>24.1 24.2</td>
<td>14-Jun</td>
<td>textbook 2.8, 4.1-4.4</td>
<td><strong>Must have lock for lab drawer</strong></td>
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<td>18-Jun</td>
<td>5</td>
<td>Nuclear Chemistry: Nuclear Transmutation; Effects of Nuclear Radiation on Matter</td>
<td>24.3, 24.4, 24.5</td>
<td>19-Jun</td>
<td>L2: How Can We Use a Physical Property to Develop a Separation Method? (Ch 3)</td>
<td>textbook 1.5, 4.1, 4.4</td>
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<td>19-Jun</td>
<td>6</td>
<td>Nuclear Chemistry: Radioisotopes; Interconversion of mass and energy; fission and fusion</td>
<td>24.6,24.7</td>
<td>20-Jun</td>
<td>L3: How Can We Use Chemical Interactions to Characterize Compounds? (Ch 5)</td>
<td>textbook 2.8, 4.1-4.4</td>
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<td>20-Jun</td>
<td>7</td>
<td>The Atom and Spectroscopy: , ionization energies, shells, energy level configurations</td>
<td>7.1, 7.2, 7.4 (pp. 314-315, 319-322); 8.2</td>
<td>21-Jun</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>
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<td>25-Jun</td>
<td></td>
<td>Exam I</td>
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<td>2</td>
<td>26-Jun</td>
<td>9</td>
<td>Trends in Chemical Reactivity: atomic radii, ionization energies, molecular formula trends as a prelude to bonding</td>
<td>8.3, 8.4, 2.7, 2.8</td>
<td>26-Jun</td>
<td>textbook 4.1 and pp 308-309</td>
<td><strong>Must have lock for lab drawer</strong></td>
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<td>27-Jun</td>
<td>10</td>
<td>Trends in Chemical Reactivity: Ionic vs. covalent trends; (ionic vs covalent vs metallic models); ionic bonds</td>
<td>8.2, 8.3, 2.7, 2.8</td>
<td>28-Jun</td>
<td>L6: How Can We Produce a Salt from an Element (Ch 6)</td>
<td>textbook 4.1 and pp 308-309</td>
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<td>28-Jun</td>
<td>11</td>
<td>Trends in Chemical Reactivity: Covalent bonds, bond energies; lattice energies.</td>
<td>9.1-9.3, 9.6, 6.5</td>
<td>28-Jun</td>
<td>L7: How Does Molecular Shape Affect Polarity? (Ch 11)</td>
<td>textbook 1.4, 5.3-5.4</td>
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<td>3</td>
<td>2-Jul</td>
<td>12</td>
<td>Trends in Chemical Reactivity</td>
<td>6.2, 6.4, 9.4; and pp. 430-434</td>
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<td>3-Jul</td>
<td>13</td>
<td>Molecular Structure: Lewis structures, electronegativity/polarity, formal charge</td>
<td>10.1, 9.5</td>
<td>3-Jul</td>
<td>textbook 4.1 and pp 308-309</td>
<td><strong>Must have lock for lab drawer</strong></td>
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<td>4-Jul</td>
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<td>NO LECTURE - UNIVERSITY HOLIDAY</td>
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<td>5-Jul</td>
<td>14</td>
<td>14</td>
<td>Molecular Structure: Resonance, shapes of molecules, molecular polarity</td>
<td>10.2, 10.3</td>
<td>5-Jul</td>
<td>textbook 1.4, 5.3-5.4</td>
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<td>Week</td>
<td>Date</td>
<td>Lecture</td>
<td>Lecture Topic</td>
<td>Textbook Chapter/Section</td>
<td>Date</td>
<td>Lab (Lab Manual Chapter)</td>
<td>Lab Reading Assignment</td>
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<td>5</td>
<td>9-Jul</td>
<td>Exam II</td>
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<td>10-Jul</td>
<td>L8: How Can Three Small Organic Molecules Be Used to Synthesize a Calcium Channel Blocker? (Ch 4)</td>
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<td>10-Jul</td>
<td>15</td>
<td>Molecular Structure: Intermolecular Forces; solubility</td>
<td>12.3, 13.1</td>
<td>10-Jul</td>
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<td>12-Jul</td>
<td>17</td>
<td>Organic Chemistry: IR spectroscopy: fingerprints and bond energies</td>
<td>15.1, 15.2, 15.3; pp384-385</td>
<td>12-Jul</td>
<td>L9: Do You See the Light? (Ch 12 plus development)</td>
<td>p. 655 (Table 15.5)</td>
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<td>6</td>
<td>16-Jul</td>
<td>18</td>
<td>Organic Chemistry: Polymers</td>
<td>15.5, pp516-520</td>
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<td>17-Jul</td>
<td>19</td>
<td>Biochemistry: Biological molecules (sugars and carbohydrates)</td>
<td>13.2, 15.6 and pp431-432</td>
<td>17-Jul</td>
<td>L10: Mussel-like Adhesives from Corn Protein Week 1 (handout)</td>
<td>textbook 15.5 and pp516-520</td>
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<td>18-Jul</td>
<td>20</td>
<td>Biochemistry: Biological properties (lipids, DNA)</td>
<td>13.2, 15.6; and pp. 663-4</td>
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<td>19-Jul</td>
<td>21</td>
<td>Solution Properties: Phase changes, solution processes</td>
<td>12.2, 13.3</td>
<td>19-Jul</td>
<td>L10: Mussel-like Adhesives from Corn Protein Week 2 (handout)</td>
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<td>7</td>
<td>23-Jul</td>
<td>22</td>
<td>Solution Properties: Solubility, colligative properties</td>
<td>13.6</td>
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<td>24-Jul</td>
<td>23</td>
<td>Inorganic Chemistry Crystal Structures</td>
<td>12.6</td>
<td>24-Jul</td>
<td>L11: How Do We Standardize a Solution (Ch 7)</td>
<td>textbook 4.4</td>
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<td>25-Jul</td>
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<td>Exam III</td>
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<td>26-Jul</td>
<td>24</td>
<td>Inorganic Chemistry: Advanced materials (semiconductors)</td>
<td>12.6 and 12.7 (pp. 281-285)</td>
<td>26-Jul</td>
<td>L12: How Can Enthalpy Changes For Chemical and Physical Processes Be Determined (Ch 8)</td>
<td>textbook 6.6</td>
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<td>8</td>
<td>30-Jul</td>
<td>25</td>
<td>Thermochemistry</td>
<td>6.1, 6.2, 6.3, 6.4, 6.5, 6.6</td>
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<td>31-Jul</td>
<td>26</td>
<td>Thermochemistry Course Review</td>
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<td>31-Jul</td>
<td>Check-out <strong>You must attend or will be charged a $45 failure-to-check-out fee</strong></td>
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*The order of lecture content is subject to change*