In CHM 11600, General Chemistry II, the following topics will be covered:

- Kinetics and the quantitative application of kinetics concepts to understand the factors that control rates of reaction;
- Equilibria in chemical reactions, including gas phase reactions, acid-base reactions, heterogeneous reactions, and reactions in solution and the application of quantitative equilibrium concepts to selected chemical reactions;
- Chemical thermodynamics and the quantitative application of chemical thermodynamics to understand the role of energy transfer in chemical changes;
- Electrochemical cells and evaluation of the potentials and energy changes associated with reactions in these cells;
- The relationships between thermodynamics, electrochemistry, and equilibrium.

Course Information: Blackboard - https://mycourses.purdue.edu/
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 Course Materials**

**Textbook and Online Homework:** In CHM 11600, you are required to complete online homework assignments using the McGraw-Hill Connect program. Connect includes an electronic version (ebook) of the textbook, *The Molecular Nature of Matter and Change*, 8th Edition, by Silberberg and Amateis. If you took CHM 11500 in Fall 2017 or Spring 2018, your Connect access is still valid, so you do not need to purchase access again. If you do not already have Connect access, there are several options available for purchasing Connect access and an optional loose-leaf copy of the textbook. See the course Blackboard page for instructions.


**Calculator:** A **simple battery operated scientific calculator** with exponential, logarithm and square root functions is needed for exams and quizzes. You are NOT allowed to use alpha-numeric, graphing and/or programmable calculators for exams or quizzes. (Two-line non-programmable calculators are allowed.)

**Lab materials:** A Sharpie (black, permanent ink) for marking lab glassware, a padlock for your assigned lab drawer **(by June 21)**, an electronic storage device for lab data, and **approved safety goggles** (available at the bookstores or from the storeroom on the 1st or 2nd floor in BRWN).

**Week #1 Assignments:**

- Purchase required materials (see above).
- Register for your CONNECT account.
- Complete the first CONNECT homework assignment.
- Attend lab check-in.
- Attend recitation and lecture.
- Read all the information in this course packet.
- Read the 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 before 11:59 PM on June 13, 2018.

**You must complete your safety certification before you can work in lab.**

**Weekly Assignments:**

- Attend lecture, recitation, and lab.
- Do the reading assignment for lecture.
- Complete your Connect homework assignments.
- Prepare for lab: read the relevant lab manual chapter, do the textbook reading assignment for lab, and complete the pre-lab exercises including the lab procedure outline.
Overview of CHM 11600 Activities and Policies

How to Study for CHM 11600  (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 16-24 hours of distraction-free studying and working with chemistry outside of class each week. You may spend this time working on your lecture notes, reading the text, studying the required material, doing homework, studying for exams, or other things. You may find yourself spending more than 16-24 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.

Before Class
- Complete the assigned reading (given in lecture) and review your notes from the previous class.

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 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.

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 graduate instructor (TA) office hours 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 or get the notes from the Boilercast recording.
- Listen to the Boilercast lecture recordings on Blackboard to fill in things you missed.

Read Differently
- 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.

- Read technical material in a "distraction free" environment. Processing technical information will be more effective in the absence of TVs, radios, headsets, etc. Turn your phone off!

- Read and interpret subheadings. With technical material, the subheadings often carry important information. This is different from the chapter headings in a novel which usually contain no information.
• Use the textbook as a reference when you study your lecture notes. Fill in any gaps and correct any information.

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.

• Read 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 which 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 11600 students, including professor office hours and TA office hours (BRWN 1106). Find more information in the “Resources” folder on Blackboard.

Reading Assignments and Learning Objectives
• Reading assignments will be provided in lecture and/or posted on Blackboard. Reading the assigned material prior to lecture and laboratory is recommended. Some of the material will be covered in lecture and some on your own.

• 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. Exam questions are based on the Learning Objectives.

Lectures
• Student versions of the lecture notes may be posted on Blackboard. These are not verbatim copies of the lectures, but are outlines of the lectures.

• Recordings and slide capture of lectures may be viewed or downloaded using the Boilercast link on Blackboard.

• You may be expected to participate in problem-solving activities during lecture. These will generally be conducted in small groups within the lecture and will provide you more opportunities to interact with the concepts and communicate your understanding.

• Cell phones, computers, iPods or other electronic devices not being used for instruction purposes are distracting for everyone in a learning situation. Please respect your classmates and turn off your cell phones and iPods in lectures as well as in recitations and labs.
Computers can be used to take notes and follow lecture, but you should not be using Facebook, texting, etc. during class. Talking out loud 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**

Your teaching assistant facilitates recitation two times a week designed to help you understand laboratories and to discuss any questions you may have from lecture or the homework. You will have time to ask questions and check your homework and pre-lab answers so take your homework questions and lab manual with you to recitation.

**Homework (CONNECT)**

- Each week you will complete homework on the online Connect system (see Blackboard for the link). Homework will *usually* be due on **Friday at 11:59 pm**. Due dates will be listed on Blackboard.

- Homework assignments may consist of LearnSmart modules and/or Connect assignments (end-of-chapter questions).

- You have 2 assignment submission attempts for each Connect homework. Each Connect assignment attempt contains 3 question attempts. You must submit your first assignment attempt to access your second assignment attempt. Your score is the best of the 2 assignment submissions.

- Each homework assignment is worth a total of 20 points. Your score will be the sum of your scores from the LearnSmart portion and the Connect homework portion. The one lowest homework score will be dropped at the end of the semester to account for illnesses, trips, technical difficulties and other situations.

- No time extensions are possible for homework assignments. Allow plenty of time to do your homework and get the highest possible score.

- Exams are likely to include questions taken from homework assignments.

- For technical difficulties with the Connect system, call 1-800-331-5094 or use the online form: [http://mpss.mhhe.com/contact.php](http://mpss.mhhe.com/contact.php).

**Laboratory**

Laboratory exercises are an integral part of CHM 11600 and are an opportunity for you to experience in a hands-on way the chemical concepts discussed in lecture.

- Lab attendance is required since CHM 11600 is a laboratory course. There are no make-up labs or excused absences, except those covered by the GAPS (grief absence) and MAPS (military absence) policies.

- You are required to complete 11 of the 13 scheduled lab projects to pass the course. If you fail to complete more than 2 lab projects, 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/MAPS approved absences)
- being dismissed from lab for an incomplete Safety Certification (score <20/25)
• being dismissed from lab for safety violations, including dress and goggle violations
• 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 before 11:59 PM on June 13, 2018. You must confirm your score in the Blackboard grade center. You will receive a zero for each lab you miss due to an incomplete safety certification. The safety certification score is not part of your course grade.

• Before lab, read the experiment and attend recitation to help you prepare.

• Complete the pre-lab exercises and prepare an experimental procedure in your lab notebook before coming to lab. Pre-labs 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.

• Follow all lab safety regulations (see below).

• Endeavor to work as an effective member of team.

• Lab reports are completed on worksheets contained in the lab manual or distributed by your instructor. Lab reports are due before leaving lab the day lab work is completed and the lab is over (i.e. at 5:00 PM). Lab reports submitted after the lab period ends, up to 24 hours late, are worth 50%. Lab reports submitted after 24 hours are worth no (zero) credit. Lab reports must be turned in to receive points for lab.

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

• Graded lab reports will be returned by your lab instructor one week after they are submitted. It is suggested that all lab partners review the graded report, as exams will include lab-related questions. If you have questions about a lab report grade, speak with your lab instructor (TA) or the TA supervisor, Candi Esquina, within one week of the report being returned to you. Your report must be completed in pen to be eligible for a regrade.
**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.

- 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 in the lab manual or by your instructor.
- 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).

*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
- 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.

Exams
Exams are a chance for you to demonstrate your comprehension of the course material and are worth approximately 60% of your final grade.

Summer 2018 hour exam schedule (During Class Time):

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Wednesday June 27, 2018</td>
<td>8:30 AM</td>
<td>WTHR 104</td>
</tr>
<tr>
<td>II</td>
<td>Wednesday July 18, 2018</td>
<td>8:30 AM</td>
<td>WTHR 104</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 and MAPS policies. You will receive no score (zero points) for any missed exams.

• If you have a direct conflict with required university activity, contact the General Chemistry office (BRWN 1144) one week before the conflict. 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.

• Hour exams are 60 minutes in length. If you arrive more than 15 minutes late for an exam, you will not be allowed to take the exam.

• Bring an appropriate calculator (see details on p. 2). You may not share a calculator with another student.

Final Exam
• The final is a 2-hour comprehensive exam. Details about the final exam, including content, date, time and location, will be announced.

• 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 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, Summer 2018
Each of the assigned course activities for CHM 11600 is worth the number of points listed below.
Before course grades are finalized at the end of the semester the following scores will be dropped:
• your one lowest homework score
• your one lowest quiz score
• your one lowest lab score, provided you complete at least 11 of 13 labs.

The total number of points for CHM 11600 will be distributed as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>120 pts</td>
<td>(best 6 of 7 at 20 pts each)</td>
</tr>
<tr>
<td>Lab Projects</td>
<td>315 pts</td>
<td>(best 12 of 13 at 25 pts each plus Week 1 lab exercise (15 pts))</td>
</tr>
<tr>
<td>Quizzes</td>
<td>30 pts</td>
<td>(best 6 of 7 at 5 pts each)</td>
</tr>
<tr>
<td>Exams</td>
<td>300 pts</td>
<td>(2 at 150 pts each)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>300 pts</td>
<td>(comprehensive)</td>
</tr>
<tr>
<td>Total</td>
<td>1065 pts</td>
<td></td>
</tr>
</tbody>
</table>

If you miss, or fail to complete more than 2 labs your course grade will automatically be an F. Except for approved GAPS or MAPS leaves, there are no excused absences in CHM 11600.

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 11 of the 13 lab projects

At various times during the semester, this approach will be used to create tentative grading scales (letter grade cut-offs) which you can use to see how well you are doing in the course.

This grading 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.
• Check your grades on Blackboard after each exam. If there are any errors or discrepancies, notify Dr. Gull 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 11600. 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 11600. 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 lab, quiz, and homework scores are dropped at the end of the term to account for absences due to illnesses, trips, conflicts or other situations. If you have concerns about how an absence will affect your course grade, contact Dr. Gull 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 excuse you or change in any way the outcome of the instructor’s decision regarding your academic work and performance in CHM 11600.

- 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). Contact General Chemistry Administrative Assistant Melissa Roadruck 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. Contact General Chemistry Administrative Assistant Melissa Roadruck for more information.

Changing Sections/Adding/Dropping

<table>
<thead>
<tr>
<th>UNIVERSITY DEADLINES – Summer 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fri., Jun 15: Last day to cancel (drop) a course without it appearing on your record.</td>
</tr>
<tr>
<td>Fri., Jun 22: Last day to cancel (drop) a course without a grade.</td>
</tr>
<tr>
<td>Wed., Jul 11: Last day to cancel (drop) a course (with a passing or failing grade).</td>
</tr>
</tbody>
</table>

Late Registration: If you register late, notify Dr. Gull no later than Friday, June 22 to see about the possibility of making up missed assignments.

Lab Drawer Check-Out: All students must check-out of their lab drawer, if you switch sections, drop, or withdraw from the University. 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. You will be charged for all equipment that is in unacceptable condition.

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 Disability Resource Center, Young Hall Room 830, 302 Wood Street, 765-494-1247, [www.purdue.edu/drc](http://www.purdue.edu/drc). To implement accommodations you must follow the instructions in the Letter of Accommodation prepared by the Disability Resource Center. **Take a copy of this letter to Mrs. Melissa Roadruck in BRWN 1144 within the first two (2) weeks of the semester, or within one week of the date of the letter to discuss your accommodations.** Timely notification of the course coordinator is critical for timely implementation.

**Mental Health**

Purdue University is committed to advancing the mental health and well-being of its students. Services are available if you or someone you know is feeling overwhelmed, depressed, and/or in need of support. For help, contact Counseling and Psychological Services (CAPS) at (765) 494-6995 and [http://www.purdue.edu/caps/](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.

**Purdue’s Honor Pledge**

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

**Academic Integrity**

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

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breeches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. Information may be submitted anonymously.

“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 11600, 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 11600 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.
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 11600 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>Date</th>
<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>
<th>Exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>06/11</td>
<td>1</td>
<td>Introduction to CHM 11600</td>
<td>Course Packet Sect. 4.1, 13.5, CH 16</td>
<td>06/12</td>
<td>Check-in; Observing; Recording and Communicating Experimental Information <em>(hand-out)</em> – 15 pts</td>
<td>textbook 4.1, 13.5</td>
<td><strong>(Safety Certification must be completed before working in lab)</strong></td>
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<tr>
<td></td>
<td>06/12</td>
<td>2</td>
<td>Concentration Expressions; Kinetics</td>
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<td></td>
<td>06/13</td>
<td>3</td>
<td>Kinetics</td>
<td>CH 16</td>
<td>06/14</td>
<td>Lab 1: A Chemical Oscillation Reaction – 25 pts (CH 1; review Appendix B &amp; C)</td>
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<td></td>
<td>06/14</td>
<td>4</td>
<td>Kinetics</td>
<td>CH 16</td>
<td></td>
<td>*<strong>(Safety Certification must be completed before working in lab)</strong></td>
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<tr>
<td>2</td>
<td>06/18</td>
<td>5</td>
<td>Kinetics</td>
<td>CH 16</td>
<td>06/19</td>
<td>Lab 2: Factors Affecting Rates of Chemical Reactions (hand-out)</td>
<td>textbook CH 16</td>
<td></td>
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<tr>
<td></td>
<td>06/19</td>
<td>6</td>
<td>Kinetics</td>
<td>CH 16</td>
<td></td>
<td>Lab 3: Chemical Kinetics, Part I (Rate Law) (CH 2; review Appendix A &amp; D)</td>
<td>textbook CH 16</td>
<td></td>
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<tr>
<td></td>
<td>06/20</td>
<td>7</td>
<td>Equilibrium</td>
<td>CH 17</td>
<td>06/21</td>
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<td>Equilibrium</td>
<td>CH 17</td>
<td>06/26</td>
<td>Lab 4: Chemical Kinetics, Part II (Activation Energy) (CH 2; review Appendix A &amp; D)</td>
<td>textbook CH 16</td>
<td>Exam I, June 27, 8:30 AM WTHR 104</td>
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<td>Lab 5: Bromocresol Green Equilibrium System – (CH 3; review Appendix C &amp; D)</td>
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<td>Lab 6: Iron(III) Thiocyanate Equilibrium System (CH 6; review CH 1 &amp; Appendix D)</td>
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<td>Lab 7: Acid-Base Equilibria (Part I) (CH 5)</td>
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<td>Acid-Base Buffers</td>
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<td>Lab 8: Acid-Base Equilibria (Part II) (CH 5)</td>
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<td>Lab 9: Enthalpy: Hess’ Law (CH 6)</td>
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<td>Enthalpy and Thermochemistry</td>
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<td>Lab 11: How Much Copper is in a Penny? (CH 7)</td>
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<td>Lab 12: Oxidation-Reduction Reactions/Oxidizing Agents and Reducing Agents (CH 8)</td>
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<td>Lab 13: A Metal Ion Sensor (CH 9)</td>
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<td>Lab Check-out (You must attend or be charged a $45 failure-to-check-out fee.)</td>
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<td>and Equilibrium</td>
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<td>Do NOT make travel plans until you know the date of the final exam.</td>
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