CHEMISTRY 11600
General Chemistry
Fall 2023
4.00 Credit Hours
Instructional Modality: Face-to-Face

Professor

Dr. John J. Nash; BRWN 4103C; phone: (765) 494-0175; e-mail: jnash@purdue.edu

Supervisor TAs

Ms. Sruthi Dasika; e-mail: sdasika@purdue.edu
Mr. Clayton Westerman; e-mail: westerc@purdue.edu
Ms. Haorui (Alina) Li; e-mail: li3777@purdue.edu

Course Description

A continuation of CHM 11500. Solutions; quantitative equilibria in aqueous solution; introductory thermodynamics; oxidation-reduction and electrochemistry; chemical kinetics; qualitative analysis; further descriptive chemistry of metals and nonmetals.

General Chemistry Office

The General Chemistry Office (BRWN 1144, (765) 494-5250, genchem@purdue.edu) handles all the administrative details associated with the course. Direct all non-chemistry questions about the course to this office. For example, contact us to discuss accommodations, to obtain grade checks, to discuss time conflicts, to get clarification on course policies, to resolve grade issues, and to get signatures on university forms such as add/drop forms. We are able to help you with a variety of requests so you can maximize your success in general chemistry.

Class Schedule

You are expected to attend all scheduled lectures, one recitation, and one laboratory each week. The lectures are given (in-person) at 1:30 pm in WTHR 200 on Tuesdays and Thursdays (unless otherwise stated). All labs (in-person) are held on Wednesdays, and all recitations (in-person) are held on either Mondays or Tuesdays (see your class schedule).

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 Brightspace and shared via announcements and e-mail.

You are expected to read your Purdue e-mail on a frequent basis.
E-Mail Communication

To avoid wasted time and duplicated effort, please do not e-mail multiple course or University personnel individually about the same issue, rather send one e-mail addressed to multiple people. Allow up to two business days (M-F, 8 am - 5 pm) for a response from your instructor, Supervisor TA or TA. In general, we will not answer e-mail after business hours (M-F, 8 am - 5 pm).

Learning Outcomes

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

1. use theory to understand/predict experimental observations,
2. demonstrate an understanding of the physical properties and a molecular understanding of chemical reactivity and materials, and
3. document scientific information and experimental data and write scientific reports, with graphical representation of data.

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 offer an opportunity to reinforce and extend what is discussed in lecture, explore new topics, and to develop your knowledge of chemistry laboratory skills.

The Chemistry 11600 team - the instructors, supervisors, teaching assistants, administrative assistants, and preparations lab staff 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 schedule, recommended ways to study, lab policies, grading, and other course policies and procedures.

Foundational Core

CHM 11600 meets the science requirement of the University’s foundational core.

Course Information

Brightspace (https://purdue.brightspace.com/d2l/login) is the primary course management site for the course. Assignments, links to lectures and labs, announcements, learning objectives, grades, and other course information will be posted on Brightspace.

Required Materials

Textbook: The textbook used in Chemistry 11600 is Chemistry: The Molecular Nature of Matter and Change, 9th Ed., by M. S. Silberberg and P. Amateis. There are several options available for purchasing a paper and/or electronic version of the book, including a loose-leaf version with eBook directly from McGraw-Hill for $58. See the course Brightspace page for further information.

Achieve: In Chemistry 11600, you are required to complete homework and quizzes online by using the Macmillan Achieve program. You can purchase instant access via the link on Brightspace ($41.60 for one semester access or $59.20 for multi-semester access) or you can purchase a code from a local
bookstore that you can then redeem via the link on Brightspace. If you purchased multi-semester access in a prior semester, then you do not need to purchase access again.

**Office 365**: You can download and use Teams/OneNote and other programs for free. Go to [https://www.itap.purdue.edu/shopping/software/product/office365.html](https://www.itap.purdue.edu/shopping/software/product/office365.html) and log in by using your Purdue account.

**Labflow**: You are required to purchase the Labflow program to access the lab manual and to submit pre-lab quizzes and lab reports. See the links and instructions on Brightspace for details.

**Hotseat**: In each CHM 11600 lecture this semester, a Hotseat question will be presented. You can use Hotseat in a web browser, as an iOS app, or by text messaging. Refer to the Lecture module on Brightspace for instructions.

**Laboratory Materials**: In addition to the Labflow program, you are also required to have approved safety (splash) goggles. *Approved safety (splash) goggles must be worn at all times in the laboratory.* Goggles can be purchased online, in bookstores, or at the storerooms in CHAS (during the first two weeks of class).

**Calculator**: You may only use a simple, scientific calculator on exams. Calculators that can graph or solve or store equations are *not* allowed. An acceptable calculator, for example, is the Texas Instruments TI-30Xa). See Brightspace (*Exam Information*) for details.

### Late Registration

If you register late, notify the Supervisor TA no later than Friday, September 8 to see about the possibility of making up missed assignments.

### Weekly Assignments

- Attend lecture, recitation and lab.
- Do the reading assignment for lecture.
- Complete your Achieve homework assignment (due each Tuesday at 10:00 pm).
- Read the lab instructions in preparation for lab, and complete the pre-lab practice problems in preparation for the online pre-lab quiz.

### Protect Purdue Pledge

“*Being a part of the Boilermaker community means that each of us must take extraordinary steps to stay well and persistently protect each other, on campus and in the community. Accountable together, I pledge to take responsibility for my own health, the protection of others and help keep the Purdue community safe from spread of COVID-19 and other infections as identified and instructed by the university.*” [https://protect.purdue.edu/pledge/](https://protect.purdue.edu/pledge/)

Any student who has substantial reason to believe that another person is threatening the safety of others by not complying with Protect Purdue protocols is encouraged to report the behavior to and discuss the next steps with their instructor. Students also have the option of reporting the behavior to the Office of the Student Rights and Responsibilities [https://www.purdue.edu/odos/osrr/](https://www.purdue.edu/odos/osrr/) > Report Concerns > General
Mental Health

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

- Counseling and Psychological Services (CAPS) at 765-494-6995 and [https://www.purdue.edu/caps/](https://www.purdue.edu/caps/) during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours.

- WellTrack, [https://purdue.welltrack.com/](https://purdue.welltrack.com/). Sign in and find information and tools at your fingertips, available to you at any time.

- Office of the Dean of Students, [https://www.purdue.edu/odos](https://www.purdue.edu/odos), for walk-in hours or call 765-494-1747 (M – F, 8 am – 5 pm).

- Purdue Wellness Coach at RecWell. If you find yourself struggling to find a healthy balance between academics, social life, stress, etc, student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is completely free and can be done on BoilerConnect. If you have any questions, please contact Purdue Wellness at evans240@purdue.edu

Basic Needs Security

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Office of the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 a.m. - 5 p.m. Monday through Friday. Submit requests for emergency assistance from the Critical Needs Fund ([https://www.purdue.edu/odos/resources/critical-need-fund.html](https://www.purdue.edu/odos/resources/critical-need-fund.html)).

Diversity Statement

We believe that every student in this course has something of value to contribute. Please take care to respect the different experiences, beliefs and values expressed by students and staff involved in this course. We support Purdue’s commitment to diversity, and welcome individuals of all ages, backgrounds, citizenship, countries of origin, disabilities, education, ethnicities, family status, genders, military experiences, political views, races, religions, sexual orientations, socioeconomic status, and work experiences. See: [https://www.purdue.edu/diversity-inclusion/](https://www.purdue.edu/diversity-inclusion/).

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, [https://www.purdue.edu/drc](https://www.purdue.edu/drc). To implement accommodations, you must follow the instructions provided by the Disability Resource Center, in addition to doing the following:
Share your “Notification of Course Accommodations” with the CHM 11600 instructors via the AIM system at least one week before an exam or assessment for which accommodations are desired. We may require an in-person or virtual meeting to discuss certain accommodations. Implementation of accommodations may not be possible if insufficient notification is given. It is the student’s responsibility to submit all exam requests through their Student Accommodation Portal. There is a 5 BUSINESS DAY (OR ONE CALENDAR WEEK) DEADLINE FOR ALL REGULAR EXAM REQUESTS.

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

### University Deadlines - Fall 2023

**September 1**: Last day to drop (cancel) a course by using Scheduling Assistant without it appearing on your record.*

**November 27**: Last day to drop (cancel) a course with a grade of “W”.*

*Submit request by using Scheduling Assistant.

### Chemistry Department Deadlines for Adding or Switching Sections - Fall 2023

**August 25**: Last day to add CHM 11600 or switch lab sections without instructor approval.

**September 8**: Last day to switch lab sections with instructor approval.*

**September 8**: Last day to add CHM 11600 with instructor approval.*

**September 18**: Last day to switch from another CHM course to CHM 11600 with instructor approval.*

*Submit request by using Scheduling Assistant.
### LECTURE SCHEDULE (WEEKS 1-8)

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Date</th>
<th>Lecture Topic</th>
<th>Chap.(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T</td>
<td>8/22</td>
<td>Introduction/Concentration Expressions</td>
<td>4,13</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>8/24</td>
<td>Thermodynamics: Entropy, Free Energy and The Direction of Chemical Reactions</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>T</td>
<td>8/29</td>
<td>Thermodynamics: Entropy, Free Energy and The Direction of Chemical Reactions</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>8/31</td>
<td>Thermodynamics: Entropy, Free Energy and The Direction of Chemical Reactions</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>T</td>
<td>9/5</td>
<td>Thermodynamics: Entropy, Free Energy and The Direction of Chemical Reactions</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>9/7</td>
<td>Equilibrium: The Extent of Chemical Reactions</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>T</td>
<td>9/12</td>
<td>Equilibrium: The Extent of Chemical Reactions</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>9/14</td>
<td>Equilibrium: The Extent of Chemical Reactions</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>T</td>
<td>9/19</td>
<td>Equilibrium: The Extent of Chemical Reactions</td>
<td>17</td>
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<tr>
<td>**</td>
<td>W</td>
<td>9/20</td>
<td>Exam I: 8:00 pm - 9:00 pm; BHEE 129, LILY 1105, ME 1130</td>
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<tr>
<td></td>
<td>R</td>
<td>9/21</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
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<tr>
<td>6</td>
<td>T</td>
<td>9/26</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>9/28</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
</tr>
<tr>
<td>7</td>
<td>T</td>
<td>10/3</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>10/5</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
</tr>
<tr>
<td>8</td>
<td>T</td>
<td>10/10</td>
<td><strong>NO LECTURE (Octoberbreak)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>10/12</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
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</table>

**LECTURE SCHEDULE (WEEKS 9-16)**

<table>
<thead>
<tr>
<th>Week</th>
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<th>Date</th>
<th>Lecture Topic</th>
<th>Chap.</th>
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<tbody>
<tr>
<td>9</td>
<td>T</td>
<td>10/17</td>
<td>Acids &amp; Bases</td>
<td>4,18</td>
</tr>
<tr>
<td>**W</td>
<td>10/18</td>
<td>Exam II: 8:00 pm - 9:00 pm; BHEE 129, LILY 1105, ME 1130</td>
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<td></td>
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<tr>
<td></td>
<td>R</td>
<td>10/19</td>
<td>Acids &amp; Bases</td>
<td>18</td>
</tr>
<tr>
<td>10</td>
<td>T</td>
<td>10/24</td>
<td>Acids &amp; Bases</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>10/26</td>
<td>Acids &amp; Bases</td>
<td>18</td>
</tr>
<tr>
<td>11</td>
<td>T</td>
<td>10/31</td>
<td>Acid-Base Equilibria</td>
<td>18</td>
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<tr>
<td></td>
<td>R</td>
<td>11/2</td>
<td>Acid-Base Equilibria</td>
<td>18</td>
</tr>
<tr>
<td>12</td>
<td>T</td>
<td>11/7</td>
<td>Acid-Base Equilibria</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>11/9</td>
<td>Acid-Base Equilibria</td>
<td>18,19</td>
</tr>
<tr>
<td>13</td>
<td>T</td>
<td>11/14</td>
<td>Acid-Base Titrations</td>
<td>19</td>
</tr>
<tr>
<td>**W</td>
<td>11/15</td>
<td>Exam III: 8:00 pm - 9:00 pm; BHEE 129, LILY 1105, ME 1130</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>11/16</td>
<td>Reduction-Oxidation Reactions</td>
<td>4,21</td>
</tr>
<tr>
<td>14</td>
<td>T</td>
<td>11/21</td>
<td><strong>NO LECTURE</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>11/23</td>
<td><strong>NO LECTURE (Thanksgiving Break)</strong></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>T</td>
<td>11/28</td>
<td>Electrochemistry: Chemical Change and Electrical Work</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>11/30</td>
<td>Electrochemistry: Chemical Change and Electrical Work</td>
<td>21</td>
</tr>
<tr>
<td>**M</td>
<td>12/4</td>
<td>“Quiet Period” Begins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>T</td>
<td>12/5</td>
<td>Electrochemistry: Chemical Change and Electrical Work</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>12/7</td>
<td>Electrochemistry: Chemical Change and Electrical Work</td>
<td>21</td>
</tr>
</tbody>
</table>

## LABORATORY SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Experiment</th>
<th>Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/23</td>
<td><strong>NO LAB (Compensation for evening exams.)</strong></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>8/30</td>
<td>Check-in; Lab Safety; <strong>Lab 0</strong> (Preparation for Lab 1)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>9/6</td>
<td><strong>Lab 1</strong>: A Chemical Oscillation Reaction</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>9/13</td>
<td><strong>Lab 2</strong>: Thermodynamics and Equilibrium</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>9/20</td>
<td><strong>Lab 3</strong>: Bromocresol Green Equilibrium Systems</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>9/27</td>
<td><strong>Lab 4</strong>: Iron(III) Thiocyanate Equilibrium System</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>10/4</td>
<td><strong>Lab 5</strong>: Factors Affecting Reaction Rates</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>10/11</td>
<td><strong>NO LAB (Octoberbreak)</strong></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>10/18</td>
<td><strong>Lab 6</strong>: Chemical Kinetics, Part I</td>
<td>25</td>
</tr>
<tr>
<td>10</td>
<td>10/25</td>
<td><strong>Lab 7</strong>: Chemical Kinetics, Part II</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>11/1</td>
<td><strong>Lab 8</strong>: How Much Copper Is In a Penny?</td>
<td>25</td>
</tr>
<tr>
<td>12</td>
<td>11/8</td>
<td><strong>Lab 9</strong>: Electrolyte and Nonelectrolyte Solutions</td>
<td>25</td>
</tr>
<tr>
<td>13</td>
<td>11/15</td>
<td><strong>Lab 10</strong>: Preparation of Buffers and Determination of Buffer Capacity</td>
<td>25</td>
</tr>
<tr>
<td>14</td>
<td>11/22</td>
<td><strong>NO LAB (Thanksgiving Break)</strong></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>11/29</td>
<td><strong>Lab 11</strong>: Acid-Base Equilibria</td>
<td>25</td>
</tr>
<tr>
<td>16</td>
<td>12/6</td>
<td>Check-out <em>(You must attend or you will be charged a $45 failure-to-check-out fee.)</em></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL POINTS POSSIBLE** 275
UNIVERSITY AND COURSE POLICIES

Details of the following policies are listed under the University Policies and Statements module on the CHM 11600 Brightspace page: Academic Integrity, Nondiscrimination, Class Absences, Attendance, Amorous Relationships, Emergency Preparedness, Violent Behavior, Use of Copyrighted Materials, and Land Acknowledgement.

“As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue.” (Purdue Honors Pledge)

Attendance and Absences

Students are expected to be present for every meeting of the classes in which they are enrolled. (Purdue University policy for attendance)

This course follows Purdue’s academic regulations regarding attendance. Only the course instructor (professor) can excuse a student from a course requirement or responsibility. If you are absent, refer to the Absences module on Brightspace and take action accordingly.

Do not come to class if you feel ill, have a fever, or display any symptoms associated with COVID-19 or the flu. Please contact the Supervisor TA as soon as possible.

You will be responsible for all information, including assignments, policy changes, schedule changes, etc., announced in lecture. Audio/document camera recordings of the lectures will be available on Brightspace.

You are expected to attend all scheduled recitation sessions. Attendance will be recorded during the first ten minutes of each recitation session. Any student with three or more absences from recitation will be ineligible for any special borderline considerations when final grades are assigned.

You are expected to attend all scheduled laboratory sessions. If you miss or fail to complete 3 labs, your final grade will be reduced by one full letter grade. If you miss or fail to complete 4 or more labs, you will receive a failing grade (F) for the course. Attending lab but not submitting a lab report is considered a failure to complete. Completion of a lab project includes, but is not limited to, the following components: (a) attendance in the laboratory, (b) participation in the laboratory work, (c) participation in the preparation of the final lab report, and (d) completion and submission of a satisfactory final lab report.

During the first 10-15 minutes of each lab period, your Graduate Instructor (TA) will give a pre-lab lecture in which safety issues related to the experiment will be discussed. For your safety, as well as the safety of others, if you are more than 10 minutes late for lab, or if you arrive on time but inappropriately dressed, you will not be allowed to perform the experiment or remain in the lab and you will receive a grade of zero for the experiment. Either of these situations will result in a failure to complete the lab project.
Under academic regulations, excused absences may be granted by the Office of the Dean of Students (ODOS; odos@purdue.edu; 765-494-1747) for cases of grief/bereavement, military service, jury duty, parenting leave, or emergent or urgent care medical care (details below). These are the only excused absences in CHM 11600. To request make-up work or deadline extensions for excused absences, see the Absences module on Brightspace.

To account for unexcused absences (illnesses, trips, conflicts, or other situations), the lowest score in each grade category (recitation, lab report, pre-lab quiz, homework, exam) is automatically dropped at the end of the semester. This includes internet or related technology issues that may have prevented you from completing a lab report, pre-lab quiz, or homework. Students with unexcused absences are eligible for one lab make-up assignment, per student, per semester. Refer to the Laboratory section of this document for details. No other make-up work or deadline extensions (i.e. for pre-lab, recitation, homework, or exams) are possible for unexcused absences.

Absence accommodations approved by the Disability Resource Center will be handled individually. Contact the General Chemistry office (genchem@purdue.edu) for more information.

Grief Absence Policy for Students (GAPS)

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

Military Absence Policy for Students (MAPS)

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

Medical Excused Absence Policy for Students (MEAPS)

Students may occasionally have to miss class and other academic obligations due to hospitalization, emergency department or urgent care visits, whether physical or mental health related in nature. The intention of this policy is to afford arrangements to students experiencing serious and short-term medical situations that cause them to miss coursework and/or exams. A student should complete the Medical Excused Absence Request Form (https://www.purdue.edu/advocacy/students/absences.html) to request that an absence notification be sent to instructors. You will be given the opportunity to make up work missed due to a medical excused absence. Refer to the Absences module on Brightspace for more information on requesting make-up work or deadline extensions.

Academic Integrity

All students are expected to be familiar with Purdue’s policies on academic integrity (https://www.purdue.edu/odos/academic-integrity/).
Students who observe an issue of academic integrity can report it to the Office of the Dean of Students (https://www.purdue.edu/odos/ - use the General Incident Report to report anonymously), call 765-494-8778, or e-mail integrity@purdue.edu.

"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.

Some examples of academic dishonesty are listed below. While this is not a complete list of examples of academic dishonesty, these examples are provided for your information. If you have any questions at all about permissible behavior, you should ask before acting.

- Copying or possessing an unauthorized crib or unauthorized information (written or electronic) during an exam.
- Copying from another student’s exam or work; allowing another student to copy your exam or work.
- 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.
- Changing data for a lab project to fit the perceived answer; that is, what you think the answer should be.
- Using someone else’s data in a lab report as if it were your own.
- Submitting a lab report or other work that you did not do.

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

All collaboration with others (such as Group Me, Zoom, discussion boards, text, in-person, etc.) during a quiz or exam is prohibited.

Working together is allowed on lab reports; however, your answers must be *in your own words*. All reports will be analyzed with Turnitin (a plagiarism checker), and students with closely matching reports will be investigated.

In lab reports, you must cite any sources (including the lab manual) used for your answers. Copying text word-for-word from the lab manual/instructions or any other source is prohibited and will receive no credit. Using ChatGPT to generate answers is not allowed and violates academic integrity policies.

Using online resources such as Course Hero or Chegg to gain answers to any graded assignment (including homework, labs, quizzes and exams) is *not* allowed. Posting course materials to web sites is
a violation of copyright laws and is not allowed. The CHM 11600 instructor can obtain user information from Chegg and other sites when inappropriate course material is posted. This information will be investigated.

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 the instructor. 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.

Reading Assignments and Learning Objectives

Reading assignments will be posted on Brightspace. 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.

Learning Objectives list the concepts you are expected to understand and the skills (calculations) you are expected to demonstrate for each topic covered in the course. They are posted in the Learning Objectives module on Brightspace. Exam questions will be based on the Learning Objectives.

Lectures

Lecture attendance is essential to learning the material presented. However, do not come to lecture if you are sick, have COVID-19 symptoms, or are directed to isolate or quarantine.

Lecture attendance will be assessed by using Hotseat. Two points per lecture will be awarded for answering Hotseat questions in fifteen (15) unannounced, randomly-selected lectures during the semester. One additional point of extra credit per randomly-selected lecture will be awarded for answering the Hotseat question correctly.

Student versions of lecture slides will be posted on Brightspace. Note that these will be outlines of the lectures and are not a substitute for taking notes during lectures.

Recordings and screen captures of lectures may be viewed or downloaded by using the Boilercast link in Brightspace.

Cell phones, computers, iPods or other electronic devices not being used for instruction purposes are distracting to 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.

If you have questions, please attend TA or instructor office hours (see the Resources module on Brightspace for schedules).
Recitation

Weekly recitation provides the opportunity for you to ask questions and work problems with your fellow students and TA. Your questions are always the first agenda item, so come prepared.

Attendance at recitation is required. However, do not come to recitation if you are sick, have COVID-19 symptoms, or are directed to isolate or quarantine. If you have an excused absence, follow the instructions listed in the Absences module of Brightspace to request a make-up assignment for recitation credit.

Recitation participation is worth two (2) points per week. The one lowest recitation attendance score will be dropped at the end of the semester. Recitation attendance will not be recorded in Weeks 1, 3 (Labor Day), 8 (Octoberbreak) and 14 (Thanksgiving Break). Thus, the maximum number of points you can earn for recitation attendance is 22 (i.e., best 11 of 12 scores).

Take your textbook, lab materials, homework, calculator, and/or any questions that you have regarding the course to recitation.

Note that it is not your TA’s responsibility to provide you with answers to homework, pre-lab, or lab report questions. Rather, they are expected to guide you to the correct solutions, help you identify mistakes, and add details to help you further understand concepts.

Homework (Achieve)

You will have a weekly homework assignment on the Achieve platform. Unless otherwise stated, each homework assignment will be posted on Friday and will be due on the second Tuesday (at 10:00 pm) after it is posted (i.e., about ten (10) days after it is assigned). All links and due dates will be in the Homework module on Brightspace.

You will have five (5) attempts for each question in an assignment. There is no penalty for failed attempts.

There will be fourteen (14) graded homework assignments in this course. Each homework assignment will be scaled to 10 points, for a total of 140 points. The one lowest homework score will be dropped at the end of the semester.

No time extensions are possible for any 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.

Exams are likely to include questions taken from homework assignments.

For help with technical issues, contact Macmillan customer service at 1-800-936-6899 or use the online form at https://macmillan.force.com/macmillanlearning/s/contactsupport. Chrome is the recommended web browser for Achieve.
Exams

Exams are a chance for you to demonstrate your comprehension of the course material and are worth approximately 60% of your final grade. There will be three (one-hour) exams and a comprehensive final exam in this course.

The three (one-hour) exams:

- will be administered in the evenings, on the dates listed below,
- will be on paper with scantron answer forms,
- are worth 140 points each,
- will consist of multiple-choice questions,
- have a 60-minute time limit (unless you have extended time through the DRC).

<table>
<thead>
<tr>
<th>Exam</th>
<th>Points</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>140</td>
<td>Wednesday, Sept. 20</td>
<td>8:00 pm - 9:00 pm</td>
<td>BHEE 129, LILY 1105, ME 1130</td>
</tr>
<tr>
<td>Exam II</td>
<td>140</td>
<td>Wednesday, Oct. 18</td>
<td>8:00 pm - 9:00 pm</td>
<td>BHEE 129, LILY 1105, ME 1130</td>
</tr>
<tr>
<td>Exam III</td>
<td>140</td>
<td>Wednesday, Nov. 15</td>
<td>8:00 pm - 9:00 pm</td>
<td>BHEE 129, LILY 1105, ME 1130</td>
</tr>
<tr>
<td>Final Exam</td>
<td>280</td>
<td>To be announced</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have a conflict with another course (either a class or an exam), you must contact the Supervisor TA or the General Chemistry Office (BRWN 1144) at least one calendar week before the exam date to discuss your options. You may be asked to provide written verification of the conflict.

Exam questions will be based on the Learning Objectives and labs, in addition to other course materials.

You should plan to arrive at least 15 minutes before the exam start time. You will also need to bring a simple, scientific calculator, several sharpened #2 pencils, and your student ID with you to each exam. There will be no “spare” calculators available during exams, and you may not share a calculator with another student. Cell phones, and calculators that can graph or solve or store equations may not be used during exams.

You will not be allowed to leave the examination area during the first 15 minutes of the scheduled exam time. You may arrive late for the exam during this first 15-minute window; however, you will not receive additional time to complete the exam. After the first 15 minutes, no one will be allowed to enter the examination area or take the exam.

Your lowest exam score or ½ of your final exam score will be dropped at the end of the semester.

Zero scores caused by absences that are excused by GAPS/MAPS/MEAPS will be handled individually. Refer to the Absences module on Brightspace for information about requesting a make-up exam. No make-up exams are possible for unexcused absences.

Final Exam

The final exam is comprehensive and is worth 280 points. The format of the final exam will be communicated to you during the semester.

Wait until you know the date of the final exam before you make travel plans that might conflict with the exam. Final exams will NOT be rescheduled to accommodate your travel plans.
You must arrive within 15 minutes of the final exam start time to be eligible to take the exam. If you arrive more than 15 minutes after the start time, you will not be permitted to take the final exam.

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.”

Total Points

Each of the assigned course activities for CHM 11600 is worth the number of points listed below. Before final course grades are assigned at the end of the semester, the following scores will be dropped:

- your one lowest homework score
- your one lowest lecture participation score
- your one lowest recitation participation score
- your one lowest pre-lab quiz score
- your one lowest lab report score
- your one lowest exam score or ½ your final exam score

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>130</td>
<td>(best 13 of 14 at 10 pts. each)</td>
</tr>
<tr>
<td>Lecture Participation</td>
<td>28</td>
<td>(best 14 of 15 randomly selected lectures at 2 pts. each)</td>
</tr>
<tr>
<td>Recitation Participation</td>
<td>22</td>
<td>(best 11 of 12 at 2 pts. each)</td>
</tr>
<tr>
<td>Pre-Lab Quizzes</td>
<td>50</td>
<td>(best 10 of 11 at 5 pts. each)</td>
</tr>
<tr>
<td>Lab Reports</td>
<td>200</td>
<td>(best 10 of 11 at 20 pts. each)</td>
</tr>
<tr>
<td>One-Hour Exams</td>
<td>420</td>
<td>(3 at 140 pts. each)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>280</td>
<td>(comprehensive)</td>
</tr>
</tbody>
</table>

Sub-total **1130 pts.**

- **140 pts.** drop lowest exam or ½ final exam score, whichever is lower

Total **990 pts.**

The total points available for exams is 560. Your exam total will be determined as follows: your points earned on the Final Exam will be divided in half and considered as separate scores, T4 and T5. These scores will be compared with your scores on One-Hour Exams 1 - 3 (T1, T2, T3) and the lowest of these scores will be dropped (i.e., not counted into your total points earned). The remaining four scores will comprise your exam total points.

Saving Graded Materials

You should save all of your graded materials until after you have received your final letter grade for the course. In order to resolve any discrepancies, your graded materials will need to be reviewed.
The Grading Scale

At the end of the semester, the total scores for all students will be arranged in numerical order, the score that corresponds to either the 99th or 98th percentile ($S_{99}$ or $S_{98}$) will be determined, and then letter grades will be assigned based on this percentile score as follows:

A: \[ \text{Total Score} \geq 0.93 \times S_{99} \text{ (or } S_{98}) \]
A-: \[ 0.90 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.93 \times S_{99} \text{ (or } S_{98}) \]
B+: \[ 0.86 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.90 \times S_{99} \text{ (or } S_{98}) \]
B: \[ 0.83 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.86 \times S_{99} \text{ (or } S_{98}) \]
B-: \[ 0.80 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.83 \times S_{99} \text{ (or } S_{98}) \]
C+: \[ 0.76 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.80 \times S_{99} \text{ (or } S_{98}) \]
C: \[ 0.73 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.76 \times S_{99} \text{ (or } S_{98}) \]
C-: \[ 0.70 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.73 \times S_{99} \text{ (or } S_{98}) \]
D+: \[ 0.66 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.70 \times S_{99} \text{ (or } S_{98}) \]
D: \[ 0.63 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.66 \times S_{99} \text{ (or } S_{98}) \]
D-: \[ 0.60 \times S_{99} \text{ (or } S_{98}) \leq \text{Total Score} < 0.63 \times S_{99} \text{ (or } S_{98}) \]
F: \[ \text{Total Score} < 0.60 \times S_{99} \text{ (or } S_{98}) \]

This system has several advantages because:

- unlike a *curved scale*, it encourages cooperation among students because NO student is penalized when another is successful, and
- 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 earn in this course depends primarily on *your own* effort and performance. *It also ensures that all students who do well in the course will get good grades.*

Periodically during the semester, your total points will be calculated and tentative grade cutoffs will be posted so that you can see how well you are doing in the course.

Check all of your scores on Brightspace regularly. If there are errors or discrepancies, notify the Supervisor TA within two weeks of a grade update being announced.
SOURCES OF HELP

TA Office Hours

Chemistry 11600 TAs will hold office hours each week in WTHR 261 where any Chemistry 11600 student can go to get help with chemistry at no charge. You should feel free to see any of the TAs, not just your own! Feel free to go to the office hours with a classmate or small group if you feel uncomfortable going alone. The schedule for TA office hours will be posted on Brightspace.

Supervisor TAs / Professor

The Supervisor TAs and Dr. Nash will also hold office hours each week. The schedule for office hours will be posted on Brightspace.

Supplemental Instruction (SI)

There are Supplemental Instruction (SI) study sessions available for this course. These study groups are open to anyone enrolled in this course who would like to stay current with the course material and understand the material better. Attendance at these sessions is voluntary, but extremely beneficial for those who attend regularly. Times and locations for the help sessions can be found here: https://www.purdue.edu/si. Students who attend these interactive sessions will find themselves working with peers as they compare notes, demonstrate and discuss pertinent problems and concepts, and share study and test-taking strategies. Students are asked to arrive with their student ID card, lecture notes and questions to these informal, peer-led study sessions. Please visit Brightspace to access information about connecting with SI sessions and SI Leader office hours.

Resource Room

The staff in this area can answer many of your chemistry related questions but going to a Chemistry 11600 TA with your chemistry questions is recommended. The Chemistry Resource Room is also an area where you can study alone or with others. Various kinds of help for all chemistry students are available. The resources include:

- Free help and tutoring from the staff assigned to this area
- Numerous audio-visual, auto-tutorial programs on chemistry
- Molecular and crystal models
- Computers with a variety of chemical, tutorial topics

A student ID card is required to check out most of the materials in the Chemistry Resource Room. Days and times when the Chemistry Resource Room is scheduled to be open will be posted outside WTHR 117.
LABORATORY PROJECTS

Laboratory projects are an integral part of CHM 11600 and are an opportunity for you to experience the chemical concepts discussed in lecture in a practical way. You will access digital lab materials (procedures, report forms, etc.) via Labflow. You will take pre-lab quizzes on Labflow.

You will be working in teams of two (pairs) for most of the lab experiments. No students will be allowed to work individually in lab. While we encourage you to discuss concepts with other members of your class, each lab report must represent the unique effort of each individual student.

Laboratory Attendance and Participation

Lab attendance is required since CHM 11600 is a laboratory course. Students with excused absences are eligible to complete lab make-up assignments. Students with unexcused absences are eligible for one lab make-up assignment, per student, per semester, provided the student applies for a make-up assignment before the lab start time. Refer to the instructions listed in the Absences module of Brightspace to request a lab make-up assignment. Students can complete no more than four lab make-up assignments per semester for excused absences or disability accommodations. To account for all other absences (i.e., unexcused), the one lowest lab score is automatically dropped at the end of the semester.

For cases such as those listed below, a score of zero (failure to complete) will be assigned.

- being absent for any reason (except approved GAPS/MAPS/MEAPS 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 (if you go home to change clothes, you must be back within the first 10 minutes of the lab period)
- arriving more than ten (10) minutes after the lab start time (including if you go home to change clothes)
- leaving lab early or otherwise not completing the lab project
- inadequate preparation that hinders lab participation
- not contributing constructively to the group’s work in lab, including leaving the laboratory for longer-than-necessary periods of time/personal breaks
- not recording appropriate data and/or observations during lab
- failure to submit a lab report, even if you attended the lab

Penalty for Missed Labs

If you miss or fail to complete 3 labs, your final grade will be reduced by one full letter grade. If you miss or fail to complete 4 or more labs, you will receive a failing grade (F) for the course. Attending lab but not submitting a lab report is considered a failure to complete.

Pre-Lab Quizzes

The purpose of the pre-lab quizzes on Labflow is to ensure that you have adequately prepared for the lab by reviewing the concepts and procedure.

- You have two, timed (10-minute) attempts for each quiz. The quiz will automatically submit after 10 minutes. Do not click “Begin” until you are ready to take the quiz because you cannot pause, exit, cancel, resume later, etc.
- For the best chance of success, take the pre-lab quiz after reading the lab materials and completing the pre-lab practice questions. You are encouraged to use the lab materials and your work for the
pre-lab practice questions while taking the quiz.

- Quizzes are individual assignments. Collaboration with other students during the quiz is not allowed. (However, you are encouraged to work together in advance to complete the pre-lab practice questions.)
- Pre-lab quizzes are due each week on Tuesdays by 11:59 pm.
- If you do not attempt the quiz before the time it is due, then you will receive a zero for the quiz (out of 5 points). You are, however, allowed to attend lab and can still earn points for the lab report (20 points).
- There are no make-up quizzes or time extensions, except in the case of excused absences. For details on requesting deadline extensions for excused absences, see the Absences module on Brightspace. The lowest pre-lab quiz score is dropped at the end of the semester to account for unexcused absences due to illnesses, technical difficulties, and other situations.

Laboratory Notes and Reports

For each lab project, you must upload a brief procedure to Labflow. Your procedure can be a list of steps, a flowchart or an outline, and is due at the beginning of your lab period.

For each lab project, you will complete an individual lab report in Labflow. Detailed instructions will be provided later. All submissions will be analyzed by the Turnitin plagiarism checker. Be sure to complete the lab report appropriately (see below).

- answer in full sentences for open-ended questions
- for calculations or lab notes, make sure your handwriting is clear and legible if you are using a stylus on a tablet or uploading photos of your handwritten notes
- each student must prepare individual graphs and tables - screenshots or photos of another student’s work are not acceptable
- label graphs and tables clearly
- show calculation steps clearly for mathematical questions
- show the use of correct units of measurement and significant figures
- ensure results and conclusions are consistent with your data and observations
- answer questions by using your own words
- cite the lab manual if you are quoting directly from it or put information from the lab manual into your own words

You are encouraged to access lab materials and notes while completing the reports. Also, you may discuss your report with peers and your TA; however, you must do your own work (i.e., you should not copy of submit another student’s answers).

Each lab report will be due at the end of the lab period in which the experiment was performed (unless otherwise stated). Details about how to submit lab reports will be communicated via Brightspace and e-mail.

Lab reports are worth twenty (20) points each. The lowest lab report score will be dropped at the end of the semester to account for illnesses, trips, conflicts and other situations. Lab reports submitted after the due date (end of lab), up to 24 hours late, are worth 50%. Lab reports submitted after 24 hours are worth no (zero) credit.

Lab Grades

Penalty for missed labs: If you miss or fail to complete 3 labs, your final grade will be reduced by one
full letter grade. If you miss or fail to complete 4 or more labs, you will receive a failing grade (F) for the course. Attending lab but not submitting a lab report is considered a failure to complete.

Graded lab reports will be available for viewing approximately one week after submission. You are encouraged to review the graded work as your TA may have left useful feedback for your future improvement. If you have questions about a lab grade, speak with your TA or the Supervisor TA within one week of the graded report being made available to you. If lab grading is delayed, please inform the Supervisor TA.

Make sure you review lab content because exams will include lab-related questions.

Laboratory Equipment Policies

You will share an assigned laboratory drawer of equipment with the student(s) at your lab table. Your lab partner(s) will depend upon your commitment to keeping the equipment clean and in good working condition.

You and your lab partner(s) will have the opportunity to assess the equipment during check-in. Check-in is your chance to replace, at no charge, equipment that is unusable (i.e., dirty, chipped, cracked, stained, broken, etc.). It is important that you inspect all pieces of equipment carefully.

After Check-In

It is important that you do your part to maintain the drawer throughout the semester by cleaning all the glassware after use by (1) washing with hot water, soap, and a brush, (2) rinsing with tap water, and then (3) rinsing with deionized water. By using this three-step process for cleaning glassware, you will have better experimental results. Make sure to return clean glassware to your drawer.

If you are responsible for a piece of equipment becoming unusable (i.e., the piece becomes chipped, cracked, stained, broken, etc.), then you must go to the storeroom (immediately) and purchase a replacement.

Should you discover that a piece of equipment is missing, first check with the other students at your lab table and in the lost and found box in the lab. If the piece is still missing, then your group must replace it immediately. The storeroom staff can split the cost of a replacement among all or any number of lab partners.

Often, pieces of equipment are broken accidentally; for example, a thermometer rolls off the table and breaks. Replacing the thermometer is still the responsibility of the group and the storeroom staff can split the cost of a replacement among the lab partners.

Your TA will open the drawer before lab each week. You may store personal items (such as goggles) in the drawer, but you should label everything with your name.
Changing Lab Sections / Dropping the Course / Withdrawing from the University

If you change sections, drop the course, or withdraw from the University, then 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 a $45 fee**, and forfeiture of the right to determine the acceptability of all drawer equipment; that is, you will be charged for all equipment that is unacceptable (e.g., dirty, broken, chipped, missing, etc.).

- **You must check out of your lab drawer during your scheduled lab period. Contact the Supervisor TA if you need to make alternate arrangements to check out.**
- Inform the storeroom staff immediately if you are changing lab sections, dropping the course, or withdrawing from the University. Check out involves a process where you and your TA or other staff member inspect the items in your lab drawer before you are released from your responsibility for the items in the drawer.
- If you **change sections**, then you are still required to properly check out of your current lab drawer before checking in to another section.
- If you **drop, or withdraw** from the course before the end of the semester, then you are still required to properly check out of your lab drawer.
- If you have any questions about properly checking out of your lab drawer, go to the storeroom, CHAS 1041 or CHAS 4039, for assistance.

Check-out Day

On the last day of lab, you and your lab partners will check out of your lab drawer. You must arrive on time, be properly dressed and wear goggles. If you arrive more than 15 minutes late, you will be asked to leave the lab and will be assessed a fee of $45 for failure to check out, plus the cost of replacing any equipment that is broken, missing or dirty.

You and your lab partners will clean and inventory the drawer for your TA’s inspection. All missing or unusable equipment must be replaced at that time.

If you do not attend lab check-out, then you will be assessed a fee of $45 for failure to check out, plus the cost of replacing any equipment that is broken, missing or dirty.
TEACHING LABORATORY SAFETY POLICIES

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. It is your responsibility to know the policies. You may or may not receive a warning before being dismissed from lab for safety violations.

All students must complete the online safety certification found on Brightspace with a score of 20/25 or better by 11:59 pm on Sunday, August 27. You must confirm your score in the Brightspace grade book. If you miss lab check-in, or score less than 20/25, then you must make alternate arrangements to complete the safety certification before you will be allowed to work in the lab. Note that you will be sent home and will receive a zero for each lab you miss due to an incomplete safety certification.

Safety (Splash) Goggles

Approved safety (splash) goggles must be worn at all times in the laboratory (including during check-in, clean up, report writing, and the day of check-out). If you are in lab and your goggles are not covering your eyes, then you will be send home and will receive a zero for the lab and the lab report (failure to complete). When lab is over and you remove your goggles, you must walk out of the lab immediately. In other words, you must put everything away, pack up, and chat with classmates before removing your goggles.

Appropriate Clothing

Proper dress (clothing and shoes) is required. Each student must wear clothing in the laboratory that covers, and protects, the skin from the neck (including the shoulders) to the ankles, feet, and toes when sitting, standing or reaching. Your TA or Supervisor TA might ask you to raise your arms or bend your knees to check if you are violating proper dress. 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 or scoop neck (below the collar bone), bare midriff or crop-tops, or tank-style
- loose-knit sweaters that expose your skin due to holes or baggy style
- pants that are ripped or have holes in the fabric of any size
- tights or thin (translucent or transparent) leggings or those that have holes or mesh inserts
- Capri or cropped pants
- skinny or ankle pants that reveal skin between the shoe and the bottom of the pant leg (wear boot or long socks if your ankle shows)
- shorts
- short skirts (i.e., shorter than floor-length)
- 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

Your best option for chemistry lab attire is a crew neck t-shirt, jeans without holes, and sneakers with socks that cover your ankles.
Gloves

Gloves serve two purposes; they protect your skin from potential contaminants and keep any potential contaminants inside the lab. You should wear protective gloves when directed to do so. When you leave the lab, take the gloves off and throw them away. Get new gloves when you return to lab.

Contact Lenses / Hair

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 TA of this at the beginning of the semester. If your hair is longer than shoulder length, then you must tie it behind your head in order to avoid contact with chemicals that might be on the lab bench. Rubber bands are available in the laboratory.

Food & Beverages

Food and beverages are no allowed in the laboratory. *This includes water bottles.*

Hazardous Materials / Disposal of Waste

Follow your TA’s guidance on appropriate handling of hazardous materials and disposal of chemical waste. Promptly clean up spills, and the laboratory, before leaving.
HOW TO STUDY FOR CHEMISTRY 11600

It will take you at least two hours on your own for every hour we spend online or in class in order to study and learn the material. This means you will spend about 8-12 hours of distraction-free studying and working with chemistry each week. You may spend this time reviewing and annotating your lecture notes, reading the text, doing homework, working practice problems, studying for quizzes and exams, or other things. You may find yourself spending more than 8-12 hours per week if your math skills need improvement or if it has been a few years since you took a chemistry course. If you are committed to your goals and dreams, then dedicate yourself to spending the necessary time to perform well.

Before Lecture

- Review your notes from the previous lecture.
- Review the assigned reading and read the sample problems within the assigned section(s) 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, music, texting, 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 textbook without looking at the solutions! If you have understood what you have 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 textbook. The key is to force yourself to recall and apply material.

During Lecture

- Take notes!
- Write down each step of every problem or example even if you do not understand the step. You can always ask about it later.
- Try to answer all the questions and work 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 of your notes so that you can quickly find a certain section of the lecture when you review the lecture recording.
- Turn off distractions (e.g., Netflix, other homework, social media, etc.)

After Lecture

- Review your notes while things are still fresh in your mind.
- Listen to the lecture recording to fill in things that 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 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, then go on to another problem. After a day or so, work related problems in the textbook.
- Review your class notes and the assigned section(s) in the textbook *before* you attempt any of your homework problems.
- Seek help from a TA during recitation or office hours.

**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 (e.g., homework questions, lecture examples). Classify problems by the type of knowledge that is needed to solve the problem.
EMERGENCY PREPAREDNESS

Emergency preparedness is your personal responsibility. Purdue University is actively preparing for natural disasters or human-caused incidents with the ultimate goal of maintaining a safe and secure campus.

- For any emergency, call 911.
- There are nearly 300 Emergency Telephone Systems throughout campus that connect directly to the Purdue Police Department (PUPD). If you feel threatened or need help, push the button and you will be connected to the PUPD.
- If we hear a fire alarm, we will immediately evacuate the building. During lecture, we will proceed to the areas in front of CL50 and LOEB. During lab, we will proceed to the area between SCHL and HOVD (basement labs) or the north entrance to the Armory (AR). **Do not use the elevator!**
- If we are notified of a Shelter in Place requirement for a tornado warning, we will shelter in the lowest level of this building away from windows and doors. Our preferred location is the **basement** of WTHR or BRWN (lecture, recitation) or CHAS (lab).
- If we are notified of a Shelter in Place requirement for a hazardous materials release, we will shelter in our classroom shutting any open doors and windows.
- If we are notified of a Shelter in Place requirement for an active threat such as a shooting, we will shelter in a room that is securable preferably without windows. During lecture, we will shelter in WTHR 200. During lab, we will shelter in the lab.

“Shelter in Place” means seeking immediate shelter inside a building or university residence. 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 e-mail 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.