Professor

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

Lecture Supervisor

Ms. Hilary Florian; BRWN 1144; phone: (765) 494-5250; e-mail: hflorian@purdue.edu.

Lab Supervisor

Ms. Diana Perales; BRWN 1144; phone: (765) 494-5250; e-mail: dperale@purdue.edu.

General Chemistry Office

The General Chemistry Office (BRWN 1144, (765) 494-5250) handles all the administrative (non-chemistry) details associated with the course. Go to BRWN 1144 to get grade checks, to discuss exam conflicts, to get clarification on course policies, to resolve grade issues, to change your schedule (weeks 2 and 3), and to get signatures on university forms such as add/drop forms.

Required Course Materials

Textbook and Online Homework: In Chemistry 11600, you are required to complete online homework assignments using the McGraw-Hill Connect program. Connect includes an electronic version (eBook) of the textbook, *Chemistry: The Molecular Nature of Matter and Change*, 8th Ed., by M. S. Silberberg and P. Amateis, McGraw-Hill, 2017. If you took Chemistry 11500 in Spring 2019, 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.


Student Laboratory Notebook: *Laboratory Notebook for the Sciences*, Fountainhead Press, Inc., or any carbonless 2-part (duplicate page) laboratory notebook. You may purchase this item separately or bundled with the lab manual in a local bookstore. You may use your Chemistry 11500 laboratory notebook if you have blank pages left.

Calculator: A simple, battery-operated scientific calculator with exponential, logarithm and square root functions is needed for exams. You are not allowed to use alpha-numeric, graphing and/or programmable calculators for exams. (Two-line non-programmable calculators are allowed.) Approved calculators are available for purchase outside WTHR 200 during the first two weeks of class.

Laboratory Materials: One (1) padlock for your assigned lab drawer (by the end of lab Week 4, September 9) and approved safety goggles, available at the bookstores, outside WTHR 200 during the
first two weeks of classes, or from the storeroom on the first or second floor in BRWN. **Safety goggles must be worn at all times in the laboratory.**

**Class Schedule**

You are expected to attend all scheduled lectures, one recitation, and one laboratory each week. The lectures are given at 1:30 pm, 2:30 pm and 3:30 pm in WTHR 104, on Tuesdays and Thursdays (unless otherwise stated). PARTE’ (PSO) sessions (optional) will be held at 6:00 pm in WTHR 200 on Mondays (unless otherwise stated).

**Course Information**

Blackboard (http://www.itap.purdue.edu/tlt/blackboard). Assignments, announcements and other course information are available on the course Blackboard page. We recommend you visit it often.

**Foundational Core**

This course meets the science requirement of Purdue University’s foundational core curriculum. Learning objectives will be provided on Blackboard.

**Weekly Assignments**

- Attend lecture, recitation, lab and PARTE’ (PSO).
- Do the reading assignment for lecture.
- Complete your Connect homework assignment (due each Tuesday at 10:00 pm).
- Read the relevant lab manual chapter in preparation for lab, and complete the pre-lab practice problems in preparation for the online pre-lab quiz.

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

You are expected to read your @purdue.edu e-mail on a frequent basis.
# 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>8/20</td>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>8/22</td>
<td>Concentration Expressions</td>
<td>4,13</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>T</td>
<td>8/27</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
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<tr>
<td></td>
<td>R</td>
<td>8/29</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
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<tr>
<td>3</td>
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<td>9/3</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
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<tr>
<td></td>
<td>R</td>
<td>9/5</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
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<tr>
<td>4</td>
<td>T</td>
<td>9/10</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
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<tr>
<td></td>
<td>R</td>
<td>9/12</td>
<td>Kinetics: Rates and Mechanisms of Chemical Reactions</td>
<td>16</td>
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<tr>
<td>5</td>
<td>T</td>
<td>9/17</td>
<td>Equilibrium: The Extent of Chemical Reactions</td>
<td>17</td>
</tr>
<tr>
<td>**</td>
<td>W</td>
<td>9/18</td>
<td><strong>Exam I: 8:00 pm - 9:00 pm; EE 129 &amp; WALC 1055</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>9/19</td>
<td>Equilibrium: The Extent of Chemical Reactions</td>
<td>17</td>
</tr>
<tr>
<td>6</td>
<td>T</td>
<td>9/24</td>
<td>Equilibrium: The Extent of Chemical Reactions</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>9/26</td>
<td>Equilibrium: The Extent of Chemical Reactions</td>
<td>17</td>
</tr>
<tr>
<td>7</td>
<td>T</td>
<td>10/1</td>
<td>Acids &amp; Bases</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>10/3</td>
<td>Acids &amp; Bases</td>
<td>18</td>
</tr>
<tr>
<td>8</td>
<td>T</td>
<td>10/8</td>
<td>NO LECTURE (Octoberbreak)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>10/10</td>
<td>Acids &amp; Bases</td>
<td>18</td>
</tr>
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</table>

## LECTURE SCHEDULE (WEEKS 9-16)

<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>9</td>
<td>T</td>
<td>10/15</td>
<td>Acid-Base Equilibria</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>W</td>
<td>10/16</td>
<td>Exam II: 8:00 pm - 9:00 pm; EE 129 &amp; WALC 1055</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>10/17</td>
<td>Acid-Base Equilibria</td>
<td>18</td>
</tr>
<tr>
<td>10</td>
<td>T</td>
<td>10/22</td>
<td>Acid-Base Equilibria</td>
<td>18, 19</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>10/24</td>
<td>Acid-Base Titrations</td>
<td>19</td>
</tr>
<tr>
<td>11</td>
<td>T</td>
<td>10/29</td>
<td>Transition Elements and Their Coordination Compounds</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>10/31</td>
<td>Transition Elements and Their Coordination Compounds</td>
<td>23</td>
</tr>
<tr>
<td>12</td>
<td>T</td>
<td>11/5</td>
<td>Transition Elements and Their Coordination Compounds</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>11/7</td>
<td>Thermodynamics: Entropy, Free Energy and The Direction of Chemical Reactions</td>
<td>20</td>
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<tr>
<td>13</td>
<td>T</td>
<td>11/12</td>
<td>Thermodynamics: Entropy, Free Energy and The Direction of Chemical Reactions</td>
<td>20</td>
</tr>
<tr>
<td>**</td>
<td>W</td>
<td>11/13</td>
<td>Exam III: 8:00 pm - 9:00 pm; EE 129 &amp; WALC 1055</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>11/14</td>
<td>Thermodynamics: Entropy, Free Energy and The Direction of Chemical Reactions</td>
<td>20</td>
</tr>
<tr>
<td>14</td>
<td>T</td>
<td>11/19</td>
<td>Thermodynamics: Entropy, Free Energy and The Direction of Chemical Reactions</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>11/21</td>
<td>Reduction-Oxidation Reactions</td>
<td>4, 21</td>
</tr>
<tr>
<td>15</td>
<td>T</td>
<td>11/26</td>
<td>Electrochemistry: Chemical Change and Electrical Work</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>11/28</td>
<td><strong>NO LECTURE (Thanksgiving Break)</strong></td>
<td></td>
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<tr>
<td>16</td>
<td>T</td>
<td>12/3</td>
<td>Electrochemistry: Chemical Change and Electrical Work</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>12/5</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>8/19</td>
<td>NO LAB (Compensation for evening exams.)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>8/26</td>
<td>Check-in; Lab Safety</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>9/2</td>
<td>NO LAB (Labor Day)</td>
<td></td>
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<tr>
<td>4</td>
<td>9/9</td>
<td>A Chemical Oscillation Reaction</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>9/16</td>
<td>Factors Affecting Rates of Chemical Reactions</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>9/23</td>
<td>Chemical Kinetics, Part I</td>
<td>25</td>
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<tr>
<td>7</td>
<td>9/30</td>
<td>Chemical Kinetics, Part II</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>10/7</td>
<td>NO LAB (Octoberbreak)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>10/14</td>
<td>Bromocresol Green Equilibrium Systems</td>
<td>25</td>
</tr>
<tr>
<td>10</td>
<td>10/21</td>
<td>Iron(III) Thiocyanate Equilibrium System</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>10/28</td>
<td>Electrolytic Conduction (<a href="#">posted on Blackboard</a>)</td>
<td>25</td>
</tr>
<tr>
<td>12</td>
<td>11/4</td>
<td>Acid-Base Equilibria, Part I</td>
<td>25</td>
</tr>
<tr>
<td>13</td>
<td>11/11</td>
<td>Acid-Base Equilibria, Part II</td>
<td>25</td>
</tr>
<tr>
<td>14</td>
<td>11/18</td>
<td>How Much Copper Is In a Penny?</td>
<td>25</td>
</tr>
<tr>
<td>15</td>
<td>11/25</td>
<td>Thermodynamics and Equilibrium</td>
<td>25</td>
</tr>
<tr>
<td>16</td>
<td>12/2</td>
<td>Check-out (<a href="#">You must attend or you will be charged a $45 failure-to-check-out fee.</a>)</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL POINTS POSSIBLE** 275
COURSE POLICIES

“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

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

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 Boilercast.

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. You will earn an automatic grade of “F” in the course this semester if you fail to complete, or are absent for, more than two (2) of the eleven (11) scheduled lab projects. 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, (d) completion and submission of a satisfactory final lab report, and (e) completion and submission of a Peer and Self Evaluation Form.

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.

Verified grief and military absences are the only excused absences in Chemistry 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 (765) 494-1747. If you experience an absence that is expected to be for an extended period of time (normally a week or more), you should also contact the Office of the Dean of Students. As a courtesy to the student, a member of the Dean of Students staff will notify the your instructor(s) of the circumstances. This intervention does not change in any way the outcome of the instructor’s decision regarding the student’s academic work and performance in Chemistry 11600.

There are no make-up labs, homework, or exams in this course. Note that the lowest score in each category of graded activity (i.e., lab, homework, and exam (or ½ final exam; see below)) is dropped at the end of the semester to account for absences due to illnesses, trips, conflicts or other situations that are not excused absences.
Classroom Etiquette

The lectures will begin promptly at 1:30 pm or 2:30 pm or 3:30 pm, so please be in your seat by this time. If you must be late, please enter as quietly as possible and sit in the back rows so as not to disturb the class. Please be respectful of your classmates and avoid loud wrappers, opening drinks, reading newspapers, etc. in class. Dr. Nash will do his best to keep the lectures on time and asks that you not leave, or prepare to leave (shuffling papers, etc.) until the class is dismissed.

Cell phones, laptops and other electronic devices not being used for instructional purposes are distracting to everyone in a learning situation. Please respect your classmates and turn off your cell phones in lectures as well as in recitations and labs. Laptops can be used to take notes and follow lecture, but you should not use social media, watch videos, or shop during class. Talking out loud to classmates during lecture is distracting to other students and is disrespectful to Dr. Nash. If you have a question, please ask, but otherwise remain quiet and allow the students around you the opportunity to pay attention.

Disability Accommodations

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let us know so that we can discuss options. You are also encouraged to contact the Disability Resource Center (DRC) at: drc@purdue.edu or by phone: (765) 494-1247 (https://www.purdue.edu/drc).

If you require accommodations to access course activities or materials, the accommodations must be described and approved by the DRC. To implement accommodations, you must follow the instructions in the letter provided by the DRC. Take a copy of this letter to the General Chemistry Office (BRWN 1144) within the first three (3) weeks of the semester or within one week of the date of the letter to discuss your accommodations. Implementation of accommodations may not be possible if insufficient notification is given.

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

Academic Integrity

All students are expected to be familiar with Purdue’s policies on academic integrity (https://www.purdue.edu/odos/academic-integrity/).

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 e-mailing integrity@purdue.edu or by calling (765) 494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.
"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 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 dishonesty 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 Chemistry 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.

**Homework**

Each week you will have a reading assignment. Reading assignments will be posted on Blackboard. Reading the assigned material prior to lecture and laboratory is strongly recommended. Some of the material will be covered in lecture and some on your own.
Each week you will have a homework assignment on the online Connect system (see Blackboard for the link). Unless otherwise stated, each homework assignment will be posted on Friday and will be due on the second Tuesday after it is posted (i.e., about ten (10) days after it is assigned). Due dates will be listed on Blackboard and the Connect assignment page.

There will be fifteen (15) homework assignments in this course. Each homework assignment will be scaled to 10 points, for a total of 150 points. The lowest homework score will be dropped at the end of the semester to account for illnesses, trips, technical difficulties and other situations.

You have two (2) assignment submission attempts for each Connect homework. Each assignment attempt contains three (3) question attempts. You must submit your first assignment attempt to access your second assignment attempt. Assignments are automatically submitted at the due date and time. Your score is the best of the two assignment submissions.

_No time extensions are possible for Connect homework assignments._ Allow plenty of time to do your homework and get the highest possible score. If you wait until the last minute, you risk the possibility of technical difficulties, illness, or other situations interfering with your success. **For technical difficulties with the Connect system, call (800) 331-5094 or use the online form:** http://mpss.mhhe.com/contact.php.

**PSO (Optional PARTE’ Sessions - Mondays, WTHR 200, 6:00 pm)**

During Preparation And Readiness to Take Exams (PARTE’) sessions you will have the opportunity to work exam-type questions with other students and get help from TAs. As such, you are expected to stay for all or most of the class period (50 minutes). You will not be allowed to obtain the PARTE’ packet and leave immediately.

Answers will be provided only after you have attempted or completed all of the problems. If you don’t have time to check your answers during the session, then you may consult with a TA during office hours.

Note that PARTE’ sessions are not a time to get help with homework or pre-lab questions; TA office hours are available for this purpose.

**Exams**

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

There will be three exams and a _comprehensive final exam_ in this course. You should plan to arrive at least 15 minutes before the exam start time. You will also need to bring a simple, battery-operated 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 graphing, programmable and alpha-numeric calculators, may not be used during exams. (Two-line non-programmable calculators are allowed.) The date and time of each exam is given below.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Points</th>
<th>Date and Time</th>
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</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>140</td>
<td>Wednesday, September 18; 8:00 pm - 9:00 pm; EE 129 &amp; WALK 1055</td>
</tr>
<tr>
<td>Exam II</td>
<td>140</td>
<td>Wednesday, October 16; 8:00 pm - 9:00 pm; EE 129 &amp; WALK 1055</td>
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</tbody>
</table>
Exam III  140 points  Wednesday, November 13; 8:00 pm - 9:00 pm; EE 129 & WALC 1055
Final Exam 280 points  To be announced; during finals week

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.

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

**Final Exam**

You should wait until you know the date of the final exam before you make travel plans that might conflict with the exam. **Early exams will not be given to accommodate your travel plans.** Additional information about the final exam, when available, will be announced and posted on Blackboard.

There is no make-up exam if you miss the final exam. You must arrive within 15 minutes of the exam start time to be eligible to take the final 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 Chemistry 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:

- lowest homework score
- lowest lab project score (provided you have completed at least 9 of the 11 projects)
- lowest exam score or ½ your final exam score, whichever one is lower

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams I - III</td>
<td>420 pts.</td>
<td>(3 at 140 pts. each)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>280 pts.</td>
<td>(comprehensive)</td>
</tr>
<tr>
<td>Homework</td>
<td>140 pts.</td>
<td>(best 14 of 15 at 10 pts. each)</td>
</tr>
<tr>
<td>Labs</td>
<td>250 pts.</td>
<td>(best 10 of 11 at 25 pts. Each)</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>1090 pts.</strong></td>
<td></td>
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<tr>
<td></td>
<td>-140 pts.</td>
<td>drop lowest exam or ½ final exam score, whichever is lower</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>950 pts.</strong></td>
<td></td>
</tr>
</tbody>
</table>
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**: $\text{Total Score} \geq 0.90 \times S_{99}$ (or $S_{98}$)
- **B**: $0.80 \times S_{99}$ (or $S_{98}$) $\leq \text{Total Score} < 0.90 \times S_{99}$ (or $S_{98}$)
- **C**: $0.70 \times S_{99}$ (or $S_{98}$) $\leq \text{Total Score} < 0.80 \times S_{99}$ (or $S_{98}$)
- **D**: $0.60 \times S_{99}$ (or $S_{98}$) $\leq \text{Total Score} < 0.70 \times S_{99}$ (or $S_{98}$)
- **F**: $\text{Total Score} < 0.60 \times S_{99}$ (or $S_{98}$)

At various times during the semester, this approach will be used to create tentative grading scales which you can use to see how well you are doing in the course. This system has several advantages. It lets you know several times during the semester how you are doing in the course. Unlike a curved scale, it encourages cooperation among students because no student is penalized when another is successful. Unlike an absolute scale, it tends to neutralize the effects of differences from one semester to another and thereby ensures that the same criteria are used to assign grades from one semester to another.

This approach to grading means that the grade you get in this course depends primarily on your own effort and performance. It also ensures that all students who do well in the course will get good grades.

You should check for accuracy all of your scores on Blackboard after each exam. If there are errors or discrepancies, notify the Lecture Supervisor within two weeks of the exam.

Dropping the Course and Lab Drawer Check-Out

If you drop Chemistry 11600 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 lab drawer equipment. If you change sections after you check into a lab drawer, you must check-out of your old lab drawer before checking into a drawer in your new section.

**University Deadlines - Fall 2019**

- **September 2**: Last day to drop (cancel) a course via MyPurdue without it appearing on your record.
- **September 16**: Last day to drop (cancel) a course with a grade of “W”.*
- **October 22**: Last day to drop (cancel) a course (with a passing or failing grade).*

*Add/drop forms (Form 023) must be signed by your advisor and delivered to the General Chemistry Office (BRWN 1144) to obtain a signature for the instructor.
TA Office Hours

Chemistry 11600 TAs will hold office hours each week in WTHR 116-B (adjacent to the Resource Room) 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! Note that the TAs in the Department of Chemistry are not just “a bunch of grad students.” They are graduate students, all of whom have been through a training program in teaching and tutoring skills and some of them have several years of experience in teaching. Feel free to go to the office hours with a classmate or small group if you feel uncomfortable going alone.

Course Supervisors / Professor

You can make an appointment with either the Lecture Supervisor, Lab Supervisor, or the Professor. E-mail addresses (the best way) and phone numbers are on the cover page of this packet.

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 Chemistry 11600 and are an opportunity for you to experience in a “hands-on” way the chemical concepts discussed in lecture. Safety is paramount in a chemical laboratory. For this reason, note that you will be dismissed from lab for any safety violations, including inappropriate dress or not wearing your goggles. Either situation will result in a score of zero for the project and will count as a failure to complete the lab project.

Laboratory Preparation

- Before lab, read the experiment and attend recitation to help you prepare.
- Complete the pre-lab practice questions posted on Blackboard each week. These exercises are designed to help you prepare for the lab and the pre-lab quiz. The practice problems will not be collected or graded. You can ask questions about them during recitation.
- 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 for that week’s lab.
Pre-Lab Quizzes

There will be a quiz based on the lab procedure and the pre-lab practice questions before each lab. The purpose of these quizzes is to ensure your preparation for, and safety in, lab.

- Pre-lab quizzes are completed online through Blackboard and are due at your lab start time. Pre-lab quizzes consist of 5 questions worth 2 points each (10 points total for each quiz).
- It is recommended that you have your written answers to the pre-lab practice questions, along with scrap paper, pencil and calculator, available before you begin the quiz.
- You have one, timed (10 minute) attempt for each quiz. The quiz will automatically submit after 10 minutes. Do not click “Begin” until you are ready to actually take the quiz because you cannot pause, exit, cancel, resume later, etc.
- For the best chance of success on the pre-lab quizzes, you need to ensure you have a strong, stable connection to the Internet. A hard-wired connection to the Internet is better than Wi-Fi. If Wi-Fi is the only option, then you need to check the signal strength and ideally shut down any other programs that are using the Internet (such as streaming audio, mail programs, etc.).
- Pre-lab 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.)
- There are no make-up quizzes or time extensions. The lowest pre-lab score is dropped at the end of the semester to account for illnesses, technical difficulties and other situations.
- If you do not attempt the quiz before the time it is due, then you will receive a zero for the quiz. However, you are allowed to attend the lab and can still earn points for the lab report portion of the grade.

Teamwork / Laboratory Projects / Laboratory Reports

You will be working in teams of two, or four, for all of the lab experiments. No students will be allowed to work individually in lab. For most of the labs, you will complete group lab report worksheets contained in the lab manual or distributed by your TA. While we encourage you to discuss concepts with other members of your class, each lab report worksheet must represent the unique effort of each team of two, or four, students. No individual lab report worksheets will be accepted, or graded.

Complete the lab report worksheets appropriately:

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

Upon completion of each lab project, you will be required to complete a Peer and Self Evaluation Form (distributed by your TA). On this form you will evaluate your own contributions, as well as those of your lab partners, to the lab project. Your TA will use your completed evaluation as well as those completed by your lab partners to calculate your score for the lab project. Note that coming to lab unprepared, not carrying your fair share of the load, and/or not doing what you are supposed to do will result in a lower score for the lab project.

Lab reports are due before leaving the lab the day lab work is completed and the lab is over (i.e., at 10:20 am, 2:20 pm or 5:40 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 are worth fifteen (15) 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.

Graded lab reports will be returned by your TA one week after they are submitted. It is recommended that all lab partners review the graded report worksheets because exams are likely to include lab-related questions. If you have questions about a lab report, speak with your TA or the Lab Supervisor within one week of the report being returned to you. Your report must be completed in ink to be eligible for a regrade.

Laboratory Notebook

You and your lab partners will be responsible for keeping complete written records, in duplicate, of all your lab measurements and observations in your lab notebooks. If you have a lab notebook that has either yellow or blue carbon pages, note that you must write hard in order to produce legible copies.

At the end of each lab period, you are to give your TA a copy (i.e., the carbon copy, NOT the original) of each page of your lab notebook on which you recorded data, calculations, observations, etc., during that lab period. It is inappropriate to change any data or observations in your laboratory notebook after you leave the lab.

Guidelines for the Laboratory Notebook

- The required lab notebook for Chemistry 11600 is the Fountainhead Press, Inc. Laboratory Notebook for the Sciences.
- Record the title of the experiment, the date on which the experiment was done, data obtained in the experiment, and any observations made while doing the experiment in the notebook.
- All entries are to be written in ink.
- All entries in the lab notebook must be legible.
- You should not allow anyone else to make entries in your lab notebook nor should you make any entries in another person's notebook.
- When/if you make a mistake while entering data or observations into your lab notebook, cross out the mistake with a single line so that the erroneous entry remains legible.
- Date and sign each page of the lab notebook upon completing the work.

TEACHING LABORATORY SAFETY POLICIES

Safety Goggles

Approved safety goggles must be worn at all times in the laboratory (including the day of check-out). You will be dismissed from lab and lose all credit for an experiment or lose your opportunity to check out if you do not wear your goggles as required.

Appropriate Clothing

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. Hose or tights are not an acceptable substitute for proper length pants or a (long) skirt. Un acceptable clothing includes, but is not limited to: sleeveless or bare midriff tops, low-cut (i.e., below the clavicle) tops, clothes that
are ripped or have holes in the fabric that expose your skin, shorts, short skirts, open-toed and/or open-heeled shoes and sandals (with or without socks), ballet-type or house slippers. You are expected to arrive at lab properly dressed for lab work. You will be dismissed from lab and lose all credit for an experiment or lose your opportunity to check out if you do not wear acceptable clothing.

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 in the lab at all times. 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.

Electronic Equipment / Food & Beverages

The only electronic equipment allowed in the lab will be calculators and equipment supplied by the Department for instruction and learning. You may not eat, drink, or bring food into the laboratory.

HOW TO STUDY FOR CHEMISTRY 11600

It will take you at least two hours out of class for every hour we spend in class in order to study and learn the material. This means about 8-12 hours of distraction-free studying and working with chemistry each week. You may spend this time 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 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 study and do well.

Before Class

• Complete the assigned reading and review your lecture 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 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.
- Watch 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 text 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, then 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 text. 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, headphones, 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?

- Read the assigned pages in the textbook before you attempt any of your homework problems.
- Do some work in chemistry every day. Work at least two chemistry problems each day. If you are drawing a blank about the problem after 5-10 minutes, then go on to another problem. Seek help from a TA the next day during office hours. After a day or so, work related problems in the textbook.

Practice, Practice, Practice!

- Read the sample problems and work the follow-up problems found within each chapter in the textbook.
- 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 areas in front of POTR and NUCL. **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 and BRWN.
- 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 / WTHR 104. 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.
EMERGENCY PREPAREDNESS SYLLABUS ATTACHMENT

EMERGENCY NOTIFICATION PROCEDURES are based on a simple concept – if you hear a fire alarm inside, proceed outside. If you hear a siren outside, proceed inside.

• Indoor Fire Alarms mean to stop class or research and immediately evacuate the building.
  o Proceed to your Emergency Assembly Area away from building doors. Remain outside until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.

• All Hazards Outdoor Emergency Warning Sirens mean to immediately seek shelter (Shelter in Place) in a safe location within the closest building.
  o “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, an active threat including a shooting or release of hazardous materials in the outside air. Once safely inside, 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.

*In both cases, you should seek additional clarifying information by all means possible...Purdue Emergency Status page, text message, Twitter, Desktop Alert, Albertus Beacon, digital signs, email alert, TV, radio, etc....review the Purdue Emergency Warning Notification System multi-communication layers at http://www.purdue.edu/ehps/emergency_preparedness/warning-system.html

EMERGENCY RESPONSE PROCEDURES:

• Review the Emergency Procedures Guidelines
  https://www.purdue.edu/ehps/emergency_preparedness/flyerchart/index.html

• Review the Building Emergency Plan (available on the Emergency Preparedness website or from the building deputy) for:
  o evacuation routes, exit points, and emergency assembly area
  o when and how to evacuate the building.
  o shelter in place procedures and locations
  o additional building specific procedures and requirements.

EMERGENCY PREPAREDNESS AWARENESSVIDEOS

• "Run. Hide. Fight." is a 6-minute active shooter awareness video that illustrates what to look for and how to prepare and react to this type of incident. See: https://www.youtube.com/watch?v=5mzl_5ldV8s (Link is also located on the EP website)

MORE INFORMATION
Reference the Emergency Preparedness website for additional information:
https://www.purdue.edu/ehps/emergency_preparedness/