Chemistry 11100 in Fall 2021
(CRN 14038, 14039, 14040)
(Brightspace page: https://purdue.brightspace.com/d2l/home/333816)

Lecture: 10:30 AM, 2:30 PM, and 3:30 PM in WTHR 200 on T and Th
Lab and recitation (PSO): See your schedule!
Modality: Face-to-Face

Instructor: Dr. Towns
Email: mtowns@purdue.edu
Telephone: 496-1574
Office Hours: Tuesday and Thursday, 11:30 AM-12:30 pm on Zoom (link on Brightspace)

Instructor: Dr. Harwood
Email: charwood@purdue.edu
Telephone: 494-7012
Office Hours: Tuesday and Thursday, 1:30-2:30 pm on Zoom (link on Brightspace)

Chemistry 11100 is a three-credit hour foundational general chemistry course for agriculture, health and human science, and other majors. The stated minimum prerequisite for CHM 11100 is two years of high school algebra. The course is oriented around helping you learn the fundamental chemistry concepts, calculations, and laboratory skills you need in your major. We have a diversity of majors in the course and believe that it is important to relate the chemistry you are learning to the topics you will see in other courses.

The course begins by reviewing measurements, mathematics, and energy changes. We next move to discussing atoms and isotopes then ions and compounds. We will study a bit about periodic properties and how atoms bond to form molecules. Once you know the names of ions and compounds, we study their shape, since it is the shape of molecules and ions that influences their reactivity. We discuss the chemist's basic measuring unit, the mole, and use that unit to investigate chemical reactions. Across all topics, there is a simultaneous emphasis on development of problem-solving skills and conceptual understanding. Laboratories and recitations (PSO) are scheduled weekly and offer an opportunity to reinforce and extend what is discussed in lecture, explore new topics, and to develop your hands-on laboratory skills. We strongly encourage you to attend recitation (PSO).

CHM 11100 is taught by Professors Towns and Harwood. There are 3 graduate student supervisors for lecture and lab, approximately 15-16 graduate teaching assistants who teach lab and recitation sections, and approximately 12 undergraduate student graders. The total course enrollment is approximately 1,100 students.

The Chemistry 11100 team—the professors, lecture and laboratory coordinators, teaching assistants, undergraduate graders, administrative assistants, and general chemistry preparations lab staff—are committed to, and focused on, helping you learn chemistry. We know that this is a foundational course for your major, and in order to achieve your goals and dreams, you need to do well in the course! Please read on to learn about the required materials, lecture and lab schedule, recommended ways to study, lab policies, grading, and other course policies and procedures.

Detailed learning objectives are provided for each module of the course. Broad course learning objectives are

Foundational Core: This course meets the Science requirement of the university's foundational core.
1. Explain the behavior of and interactions between, atoms, molecules, and ions at the molecular and macroscopic levels.
2. Use standardized names and symbols to represent atoms, molecules, ionic compounds, and ions as well as chemical reactions.
3. Predict atomic structure, chemical bonding, and molecular geometry based upon scientific models.
4. Demonstrate competence in quantitative problem solving, conceptual understanding, and the ability to formulate an argument based upon evidence.
5. Demonstrate competence in collecting, analyzing, and interpreting laboratory data.
6. Use computers in data acquisition and processing and available software as a tool in data analysis.

BRWN 1144, The General Chemistry Office, 49-45250: The General Chemistry office handles all the administrative details associated with the course. All non-chemistry questions about the course should be directed to this office. For example, go to BRWN 1144 to get grade checks, to discuss exam conflicts, to get clarification on course policies, to resolve grade issues, to change your schedule (weeks 2 and 3), and to get signatures on university forms such as add/drop forms. Instructional specialist Mrs. Marybeth Miller and assistants Mrs. Marlene Miller and Mrs. Melissa Roadruck are able to help you with a variety of requests so you can maximize your success in general chemistry.

Lecture and Lab Coordinators: We have three course coordinators this fall who will cover lecture and lab: Casey Wright is primarily a lab coordinator, wrigh401@purdue.edu; and Jennifer Garcia, garci523@purdue.edu and Hanna Bovill, jbovill@purdue.edu will coordinate lecture. The General Chemistry Office is in Brown 1144 and the staff in that office can also answer questions for you at genchem@purdue.edu (preferred method) or by telephone at 494-5250, or direct them to Dr. Harwood or Dr. Towns.

Teaching assistants: There will be approximately 15-16 teaching assistants to teach recitation (PSO) and lab in the course. You will be assigned a laboratory section and a recitation (also called PSO) that is taught by the same person. You will also have a Brightspace PSO section for this course where your TA may post information for you.

Supplemental Instruction: Supplemental Instruction (SI) is a program built around peer-led group study sessions. Our SI Leaders Amrita and Abby are undergraduate students at Purdue who are returning SI leaders in CHM 11100 and know what it takes to succeed. They facilitate or guide learning through fun, collaborative activities that provide more practice with challenging course material and concepts. SI attendance is correlated with higher grades in the paired course, but it shouldn’t be thought of as a quick fix or a place to go for last minute help before a quiz. To get the most benefit, you should attend SI early in the semester and continue in SI as often as you can. Keep in mind that 1 hour of productive group study is equal to 2 hours of solo studying – SI helps you maximize your study time while also getting to know your peers and having fun. Students attending SI regularly earn a letter grade higher than those who do not.

Times and locations for the study session can be found here: https://www.purdue.edu/asc/si/ and you can access the sessions from Brightspace. Amrita’s and Abby’s SI sessions, office hours, and email addresses are:

SI Leader: Amrita Kapat (kapat@purdue.edu)
SI Sessions: Monday, ASC (Wiley C215) at 5:30 pm; Wednesday, WALC 3127, at 5:30 pm
Office Hour: Monday, Wiley C215 at 12:00 pm (noon)

SI Leader: Abby Myers (myers365@purdue.edu)
SI Sessions: Tuesday, STEW 314 at 5:30 pm; Thursday, STEW 314 at 5:30 pm
Office Hour: Thursday, Wiley C215 at 2:00 pm

Course Information: Log on to Brightspace (https://purdue.brightspace.com) to find Chemistry 11100. Lecture outlines, reading assignments, announcements, and other course information are available on the course Brightspace page. We recommend that you sign up for alerts from the webpage and visit it often!
Required Materials

**Textbook:** The textbook we have chosen for you this semester is Chang, Chemistry, 13th edition (ISBN: 9781259911156). We have also chosen the McGraw-Hill Connect online homework program for our homework platform this year. When you purchase Connect it includes an electronic copy of the textbook, Chang, Chemistry, 13th edition (ISBN: 9781260694420). You can purchase Connect from the University bookstores or directly through McGraw-Hill (it’s cheaper directly from McGraw-Hill because the bookstore adds a small markup to the McGraw-Hill price). If you would like a physical textbook (loose-leaf version) as well, you must purchase Connect directly through McGraw-Hill online (ISBN: 9781260694857). If you are using an old book (any edition) you will still need to purchase access to the Connect program and that will automatically include an electronic copy of the text. A link on the course Brightspace page will direct you to the McGraw-Hill site where you can make your purchases.

**Lab Manual:** We will use a digital laboratory manual this semester from Top Hat and the online laboratory simulation program BeyondLabz. You can purchase access to the Top Hat/BeyondLabz directly from the link in your PSO Brightspace page.

**Calculator:** A simple battery operated scientific calculator with exponential, logarithm and square root functions is sufficient for this course (a TI-30 works well).

**Lab Materials:** Approved safety goggles are available at the bookstores or from the storeroom on the 1st floor in CHAS. You should bring a notebook of your choice to lab for note taking. If you choose, you may take digital notes on your electronic device. You may bring your laptop to lab each week to access your digital lab manual and digital lab report. There are iPads in each of the laboratories for you to use as well.

**Week #1 Assignments:**

- Purchase required materials (see above).
- Complete the Initial Course Survey in Module 1 and enter the code given to you in Quiz 0 by Friday August 27 at 11:59 PM.
- Register for your Connect account if you received a printed code.
- Complete the three (3) CHM 11100 Prep assignments (Structure of Matter, Foundational Skills, and Problem Solving) along with the “How to Navigate and Use Connect” assignment. (These are due September 3 @11:59 pm)
- Begin the first Connect weekly homework assignment. (Due September 3 @11:59 pm)
- Read all the information in this course packet.
- Read the Reading Assignments and Learning Objectives for Module 1 (on Brightspace).

**Weekly Keys to Success:**

*(Also refer to the “Some Ways to Study Chemistry” on the course Blackboard page.)*

- Attend lecture, recitation, and lab.
- Complete the reading assignment *before* lecture (see lab/lecture schedule at end of packet).
- Complete your weekly Quiz (due each Thursday at 11:59 pm).
- Complete your Connect homework assignment (due each Friday at 11:59 pm).
- Prepare for lab: read the relevant lab manual chapter and complete the pre-lab exercises.
- Complete any Activities and Explorations (due on Sunday at 11:59 pm).
Overview of CHM 11100 Activities and Policies
***For more detailed information, see the course Brightspace page. ***

Brightspace
This is the learning management system (LMS) that we use in the course. We will post all the course resources on our Brightspace page and you will need to access this page multiple times each week. The course content is broken up into 3 modules that are explained on the course lecture schedule at the end of this document.

Reading
See the lecture schedule in the course syllabus for the reading assignments. These are also posted on our Brightspace webpage in the appropriate learning module. Reading the assigned material prior to listening to the lecture and laboratory materials is recommended.

Lectures
Lectures are conducted at 10:30 am, 2:30 pm, and 3:30 pm in WTHR 200 on T and Th. The Powerpoint slides for the lecture are posted in Brightspace. The lectures will be recorded (Boilercast) and posted in Brightspace as they become available.

Recitation (PSO)
Recitation (PSO) takes place each Monday and Friday – the Monday August 23, recitation will meet! There will be a recitation guide each week (starting on Friday, August 27) that is integrated into the modules with the answers on the bottom of the page (most, if not all weeks).

Homework (Connect)
Each week your online homework assignment will consist of required questions and possibly optional assignments (these orient you to Connect and to the course). Required assignments will contribute to your homework point total, while optional assignments will not. However, optional assignments and tutorials can be used to help understand how to work problems or to practice and/review for exams. A few homework problems will likely appear as questions on quizzes.

Deadlines for completing the on-line assignments will be listed on the online Connect assignment page, in Brightspace, and in the title of the homework. Homework will usually be due on Fridays at 11:59 pm. You will have a maximum of three attempts to complete each homework assignment before the listed due date. Homework will be scored and recorded on-line and there is no hand grading or regrading of homework. Your best score is the one that is recorded (not the average).

Activities and Explorations
These are graded activities where you might explore a simulation and learn more about the behavior of atoms, or engage in writing about your understanding of polar molecules. Or, you might watch a demonstration video and answer questions about the demonstration. You will upload a pdf document with your answers to Brightspace – please only use the PDF format (do not use Pages, HEIC images, or a docx format). Using a PDF formatted document should ensure that we can see and grade your answers. There are 15 of these activities and you drop your lowest score for a point total of 140 points. These assignments, along with quizzes, take the place of midterm exams.

Capstones
There are 60 points of capstone activities broken up into 2-3 assignments during the semester. The capstones are more integrative and go across multiple lectures/chapters/modules in the course. There may be 1-2 capstones due during finals week! Capstone activities take the place of a final exam in this course.

Quizzes
There will be 13 online quizzes (quiz 1-13), administered through Brightspace, worth 30 points each. The best 12 out of 13 scores will count toward your final grade. The content will include problems and concepts from the prior or present week of class. Quizzes will open at 12:01 am
Surveys and In-Class Work
There are 20 points of surveys and other in-class work that will be carried out in the semester. The first survey is due Friday, August 27th at 11:59 PM.

Laboratory
Laboratory exercises are an integral part of CHM 11100 and are an opportunity for you to experience in a hands-on way the chemical concepts discussed in lecture. The labs in CHM 11100 this year will consist of a combination of alternating traditional in-person laboratories and high-tech online laboratory simulations. You have been assigned an A or a B section to determine which weeks you will have in-person lab. We will be using a Top Hat digital Lab Manual and BeyondLabz laboratory simulation program. Please see your Brightspace PSO page to get connected to Top Hat/BeyondLabz.

Laboratory Expectations

- You must complete the online safety certification in Brightspace with a score of 20/25 or better by 11:59 pm on Monday, September 6, 2021. You may not engage in in-person laboratory activities if you have not completed the safety certification.

- Most laboratories this semester will be organized into in-person/online pairs. You will attend in-person laboratory on alternate weeks beginning week 3. Students in the “A” lab group will attend lab in person in Weeks 3, 5, 10, 12, and 15. (During those weeks “B” students will perform an online lab.) Students in the “B” lab group will attend lab in person in Weeks, 4, 6, 11, 13, and 16. (During those weeks “A” students will perform an online lab.) (See table on page 7 for detailed information on groups, in-lab and online labs, and pre-lab and lab report due dates.)

- Follow all lab safety regulations (see below). These regulations may seem inconvenient but they are necessary for your safety and the safety of others in the lab.

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

- Complete the pre-lab exercises in Top Hat before coming to lab. Pre-labs are due at 11:59 pm on Monday of the week of your in-person lab period. (See table on page 7 for detailed information on groups, in-lab and online labs, and pre-lab and lab report due dates.)

- Arrive on time, properly dressed, and prepared for lab work. If you arrive at lab more than 10 minutes late or improperly dressed, will be asked to leave the lab and will receive a score of zero.

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

- Your lab report will be completed online. You should make sure to always:
  - Label graphs and tables.
  - Use the data you 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.

- Lab reports for in-person and online lab are due on Mondays at 11:59 pm. (See table on page 7 for detailed information on groups, in-lab and online labs, and pre-lab and lab report due dates.)

- You will be able to review your graded lab reports online within 1-2 weeks after they are submitted. If you have questions about your grade, speak with your lab instructor or the lab coordinator.
Laboratory Policies

You will be sharing laboratory equipment with the students in laboratory. Students in CHM 11100 have a history of functioning as a responsible community. Your lab partners will depend upon your commitment to keeping the equipment clean and in good working condition.

- It is important that you do your part to maintain the equipment throughout the semester by cleaning all the pieces of equipment after use by washing with hot water, soap, and a brush, rinse with tap water, then rinse with deionized water (it's a 3-step process to get the glassware clean and you will have better experimental results with clean glassware).

- If you are responsible for a piece of equipment becoming un-useable i.e. the piece becomes chipped, cracked, stained, broken, etc., 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 in the lab and the lost and found box. If the piece is still missing, 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 times pieces of equipment are broken accidentally; for instance, a thermometer rolls off the bench 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.

- You will not have the opportunity to store personal items such as your goggles in the laboratory. Please remember to bring them to class.

Lab Safety

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

- Dress appropriately (see below).

- Wear gloves when specified. Nitrile (non-latex) gloves will be provided in the laboratory.

- Food and beverages are not allowed in the labs. (This includes water bottles.)

- If your hair is longer than shoulder length you must tie it behind your head.

- Contact lens wearers are encouraged to wear glasses in the laboratory.

- Follow your instructor’s guidance on appropriate handling of hazardous materials and disposal of chemical waste.

- Promptly clean up spills and tidy the laboratory before leaving.

- Proper dress (clothing, socks and shoes) is required. Chemistry department regulations state that you must wear clothing in the laboratory that protects your skin. Your clothing must cover you from your neck (collarbone) to your ankles (thus, you need socks, not footies, SOCKS) when sitting, standing, or reaching. Your feet must be completely covered by your shoes.

If you attend lab in unacceptable attire, you will be sent home and will receive a zero for the lab (failure to complete).
Unacceptable clothing includes, but is not limited to:

- tops that are sleeveless, low-cut or V-neck (below the collar bone), bare midriff or tank-style
- see-through, transparent or sheer clothing
- pants that are ripped or have holes in the fabric of any size
- tights or thin (translucent or transparent) leggings
- capri or cropped pants
- shorts
- skirts (unless they extend to the floor)
- 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, with or without socks

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

► Your best option for chemistry lab attire is a crew neck t-shirt, jeans without holes, and sneakers (tennis shoes) with socks.
Below are dates for labs, pre-labs, and lab reports:

<table>
<thead>
<tr>
<th>Week</th>
<th>Lab #</th>
<th>Available</th>
<th>Group/In-Lab/Online</th>
<th>Pre-Lab Due (In-Lab Only)</th>
<th>Report Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Aug 27</td>
<td>A &amp; B Online</td>
<td>---</td>
<td>Sep 6</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Aug 27</td>
<td>A: Lab 2 – In-Lab B: Lab 3 – Online</td>
<td>Sep 6</td>
<td>Sep 20</td>
</tr>
<tr>
<td>3</td>
<td>2 &amp; 3</td>
<td>Sep 3</td>
<td>B: Lab 2 – In-Lab A: Lab 3 – Online</td>
<td>Sep 13</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4 &amp; 5</td>
<td>Sep 17</td>
<td>A: Lab 4 – In-Lab B: Lab 5 – Online</td>
<td>Sep 20</td>
<td>Oct 4</td>
</tr>
<tr>
<td>5</td>
<td>4 &amp; 5</td>
<td>Sep 17</td>
<td>B: Lab 4 – In-Lab A: Lab 5 – Online</td>
<td>Sep 27</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Oct 1</td>
<td>A &amp; B: Online</td>
<td>---</td>
<td>Oct 18</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>Oct 1</td>
<td>A &amp; B: Online</td>
<td>---</td>
<td>Oct 18</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>Oct 15</td>
<td>A &amp; B: Online</td>
<td>---</td>
<td>Oct 25</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>Oct 15</td>
<td>A: Lab 8 – In-Lab B: Lab 9 – Online</td>
<td>Oct 25</td>
<td>Nov 8</td>
</tr>
<tr>
<td>10</td>
<td>8 &amp; 9</td>
<td>Oct 20</td>
<td>B: Lab 8 – In-Lab A: Lab 9 – Online</td>
<td>Nov 1</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>10 &amp; 11</td>
<td>Nov 5</td>
<td>A: Lab 10 – In-Lab B: Lab 11 – Online</td>
<td>Nov 8</td>
<td>Nov 22</td>
</tr>
<tr>
<td>12</td>
<td>10 &amp; 11</td>
<td>Nov 5</td>
<td>B: Lab 10 – In-Lab A: Lab 11 – Online</td>
<td>Nov 15</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>12 &amp; 13</td>
<td>Nov 26</td>
<td>A: Lab 12 – In-Lab B: Lab 13 – Online</td>
<td>Nov 29</td>
<td>Dec 12</td>
</tr>
<tr>
<td>14</td>
<td>12 &amp; 13</td>
<td>Nov 26</td>
<td>B: Lab 12 – In-Lab A: Lab 13 – Online</td>
<td>Dec 6</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>12 &amp; 13</td>
<td>Nov 26</td>
<td>A: Lab 12 – In-Lab B: Lab 13 – Online</td>
<td>Nov 29</td>
<td>Dec 12</td>
</tr>
<tr>
<td>16</td>
<td>12 &amp; 13</td>
<td>Nov 26</td>
<td>B: Lab 12 – In-Lab A: Lab 13 – Online</td>
<td>Dec 6</td>
<td></td>
</tr>
</tbody>
</table>

**Exams**
There are no exams and no final exam in the course (we put this in just to be clear).

**Weekly Due Dates for Graded Course Components**
- Mondays @11:59 pm – Pre-labs and/or Lab Reports
- Thursdays @ 11:59 pm – Quizzes
- Fridays @ 11:59 pm – Connect Homework
- Sundays @ 11:59 pm – Activities & Explorations

**Attendance**
Attendance of lecture, lab, and recitation is key for success in the course. If you find yourself in isolation or quarantine this semester, please email the course instructors. We will make arrangements based on your particular situation. Please note that, according to Details for Students on Normal Operations for Fall 2021 announced on the Protect Purdue website, “individuals who test positive for COVID-19 are not guaranteed remote access to all course activities, materials, and assignments.”
Determining your Course Grade, Fall 2021
The points for each of the assigned course activities for CHM 11100 are listed below. Before course grades are finalized at the end of the semester the following scores will be dropped:

- your lowest (1) homework score
- your lowest (1) lab score
- your lowest (1) quiz score
- your lowest (1) Activity and Exploration score

The total number of points for CHM 11100 will be distributed as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>130 pts (15 pts of prep assignments + best 13 of 14 at 8.85 pts each)</td>
</tr>
<tr>
<td>Quizzes</td>
<td>360 pts (best 12 out of 13 at 30 pts each)</td>
</tr>
<tr>
<td>Labs</td>
<td>290 pts (Excel lab at 15 pts + best 11 of Labs 2-13 at 25 pts each)</td>
</tr>
<tr>
<td>Activities and Explorations</td>
<td>140 pts (best 14 out of 15 at 10 pts each)</td>
</tr>
<tr>
<td>Surveys &amp; in-class work</td>
<td>20 pts</td>
</tr>
<tr>
<td>Capstones</td>
<td>60 pts (comprehensive)</td>
</tr>
</tbody>
</table>

**Total** 1,000 pts

After the Final Exam your course grade will be based on the following scale:

- A: 900 pts and above
- B: 800 – 899 pts
- C: 700 – 799 pts
- D: 600 – 699 pts
- F: 0 – 599 pts

Save all returned graded assignments until after you have received your course letter grade for CHM 11100. To resolve any discrepancies, your assignments will need to be reviewed. At the discretion of the professors there may be extra credit assignments in the course.

Course Activities, Policies and Procedures

**Studying Chemistry**
Expect to spend at least 8-12 hours per week on chemistry. This time includes reading course materials, listening to lectures, watching demonstrations, completing homework, activities and explorations, quizzes, and lab assignments.

**Sources of Help**
There are several free sources of help for CHM 11100 students: (1) professor office hours, (2) TA office hours, and (3) SI sessions with Amrita and Abby.

**Changing Sections/Dropping**

<table>
<thead>
<tr>
<th>UNIVERSITY DEADLINES - Fall 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fri. Sept 3: Last day to cancel (drop) a course without it appearing on your record.</td>
</tr>
<tr>
<td>Mon. Sept 20: Last day to cancel (drop) a course without a grade.</td>
</tr>
<tr>
<td>Tue. Oct 26: Last day to cancel (drop) a course (with a passing or failing grade).</td>
</tr>
</tbody>
</table>

**Adding the Course/Late Registration:** Students are usually not permitted to add CHM 11100 after week 2 of the semester (Friday, September 3). Notify the course coordinator no later than Friday, September 3, if you register late to see about making up missed assignments.
### Emergencies

In the event of a major campus emergency, course requirements, deadlines, and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to CHM 11100 will be posted on the course Brightspace site or can be obtained by contacting the instructors or TAs via email or the General Chemistry office via phone at 765-494-5250. You are expected to read your @purdue.edu email on a frequent basis.

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

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

- In the case of a major campus emergency involving a shelter-in-place, all laboratory experiments will be halted while students shelter in lab. Students’ lab grades will **not** be penalized in this situation.

### Attendance

Attendance of lecture, lab, and recitation is key for success in the course. If you find yourself in isolation or quarantine this semester, please email the course instructors. We will make arrangements based on your particular situation. Please note that, according to [Details for Students on Normal Operations for Fall 2021](https://www.purdue.edu/protectpurdue/) announced on the Protect Purdue website, “individuals who test positive for COVID-19 are not guaranteed remote access to all course activities, materials, and assignments.

### Classroom Guidance Regarding Protect Purdue

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/studentrights/). See also [Purdue University Bill of Student Rights](https://www.purdue.edu/studentrights/) and the Violent Behavior Policy under University Resources in Brightspace.

### Accessibility and Accommodations:

Purdue University is committed to making learning experiences as accessible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.
Disability Accommodations
If you require accommodations to access course activities or materials, the accommodations must be described and approved by Disability Resource Center, Young Hall Room 830, 302 Wood Street, 494-1247, drc@purdue.edu, www.purdue.edu/drc. These accommodations are then sent to the professors and can be accessed by the professors online.
- If you have extended time, Brightspace now allows for a time multiplier (for example, if you have 150% time the multiplier is 1.5) to be applied to all timed tasks.
- If you have a modified attendance accommodation we will reach out to you to discuss.
- All lectures are recorded on Boilercast.
- If you have any other questions about your accommodations please contact us.

Academic Integrity Statement and Consequences.
Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing 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.” Please read http://www.purdue.edu/odos/osrr/academic-integrity/index.html.

In CHM 11100, academic integrity means “doing your own work” at all times. Discussion of chemical concepts and problem-solving methods 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 and is considered academic dishonesty.

Online quizzes in CHM 11100 are open book and open note, however all collaboration with others (such as Group Me, Zoom, discussion boards, text, in-person, etc.) during a quiz or exam is prohibited. Using online resources such as Chegg to gain answers to any graded assignment (including homework, labs, quizzes, activities and explorations, and exams) is not allowed. Posting any course materials to websites is a violation of copyright laws and is not allowed. Instructors can obtain user information from Chegg and other sites when inappropriate course material is posted and investigate it.

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. 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.

Purdue Honors Pledge
We support and affirm the academic integrity of Purdue in accordance with the Purdue Honors Pledge: “As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together – we are Purdue.”
https://www.purdue.edu/provost/teachinglearning/honor-pledge.html

Diversity Welcome
We believe 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, citizenships, disabilities, education, ethnicities, family statuses, genders, geographical locations, languages, military experience, political views, races, religions, sexual orientations, socioeconomic statuses, and work experiences.
See: http://www.purdue.edu/diversity-inclusion/
Nondiscrimination Statement
Purdue university is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange ideas, and enriches campus life. Purdue’s nondiscrimination policy: https://www.purdue.edu/purdue/ea_eou_statement.php.

Grief Absence Policy for Students (GAPS)
If you experience the death of a family member or close friend, notify the Office of the Dean of Students at 765-494-1747. Scores for any missed assignments under a verified GAPS absence will be pro-rated (assigned a score based on your average and the class average). See the Lecture or Lab Course Coordinator for more information.

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

Absences Due to University Sponsored Activities
A student should bring his or her letter stating the reason for the absence to the instructor as far in advance as possible. The student and instructor will meet to discuss the absence and how, if possible, the learning outcomes associated with any missed class activities may be addressed.

Mental Health and Wellness Statement
If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try WellTrack. Sign in and find information and tools at your fingertips, available to you at any time.

If you need support and information about options and resources, please contact or see the Office of the Dean of Students. Call 765-494-1747. Hours of operation are M-F, 8 am- 5 pm.

If you find yourself struggling to find a healthy balance between academics, social life, stress, etc. sign up for free one-on-one virtual or in-person sessions with a Purdue Wellness Coach at RecWell. 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.

If you’re struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at 765-494-6995 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.
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 Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 am-5 pm Monday through Friday. Considering the significant disruptions caused by the current global crisis as it related to COVID-19, students may submit requests for emergency assistance from the Critical Needs Fund.
The campus also has a food pantry open to the entire Purdue community: The ACE Campus Food Pantry

Protect Purdue
The Protect Purdue Plan, which includes the Protect Purdue Pledge, is campus policy and as such all members of the Purdue community must comply with the required health and safety guidelines. Required behaviors in this class include: staying home and contacting the Protect Purdue Health Center (496-INFO) if you feel ill or know you have been exposed to the virus, wearing a mask in classrooms and campus building, at all times (e.g., no eating/drinking in the classroom), disinfecting desk/workspace prior to and after use, maintaining proper social distancing with peers and instructors (including when entering/exiting classrooms), refraining from moving furniture, avoiding shared use of personal items, maintaining robust hygiene (e.g., handwashing, disposal of tissues) prior to, during and after class, and following all safety directions from the instructor.

Students who are not engaging in these behaviors (e.g., wearing a mask) will be offered the opportunity to comply. If non-compliance continues, possible results include instructors asking the student to leave class and instructors dismissing the whole class. Students who do not comply with the required health behaviors are violating the University Code of Conduct and will be reported to the Dean of Students Office with sanctions ranging from educational requirements to dismissal from the university.

Any student who has substantial reason to believe that another person in a campus room (e.g., classroom) is threatening the safety of others by not complying (e.g., not wearing a mask) may leave the room without consequence. The student is encouraged to report the behavior to and discuss next steps with their instructor. Students also have the option of reporting the behavior to the Office of the Student Rights and Responsibilities. See also Purdue University Bill of Student Rights.

For details about other Purdue University policies, including academic integrity, class attendance and absence reporting, emergency, nondiscrimination, and disability services, see the course Brightspace page.
## CHM 11100 Course Schedule

### Fall 2021

**Module 1:** Fundamentals, atoms, bonding, and naming (4 wks)
**Module 2:** Structure, concentration, reactivity (6 wks)
**Module 3:** How much can be made and how much energy is absorbed/released? (5 wks)

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture Topic</th>
<th>Reading (textbook)</th>
<th>Laboratory (Top Hat laboratory manual)</th>
<th>Quizzes</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>24-Aug</td>
<td>Course overview</td>
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<td><strong>NO LABS WEEK 1</strong></td>
<td>Quiz 0</td>
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<tr>
<td>2</td>
<td>26-Aug</td>
<td>Scientific Notation; Significant Figures; Unit Conversion Practice</td>
<td>1.8-1.9; pp 18-27</td>
<td>Purchase and set up TopHat lab manual and BeyondLabz</td>
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<td><em>(You are responsible for sections 1.1-1.7; 2.1-2.2.)</em></td>
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<td>2</td>
<td>31-Aug</td>
<td>Atomic Number &amp; Mass; The Periodic Table</td>
<td>2.3-2.4; pp 48-52</td>
<td>Lab 1 Introduction to Excel (all online)</td>
<td>Quiz 1 Thursday, Sept. 2 @11:59pm</td>
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<td></td>
<td>02-Sep</td>
<td>EM Radiation; Orbitals; Electron Configuration; Valence &amp; Core Electrons</td>
<td>7.1; pp 275-278</td>
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<td>7.8-7.9; pp 301-309</td>
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<td>3</td>
<td>07-Sep</td>
<td>Periodicity of Electron Configurations; Electron Configuration of Ions</td>
<td>8.2; pp 329-333</td>
<td>Lab 2 &amp; Lab 3 In lab (Group A): Intro to Lab Techniques, Part I</td>
<td>Quiz 2 Thursday, Sept. 9 @11:59 pm</td>
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<td></td>
<td>09-Sep</td>
<td>Atomic &amp; Ionic Size; Ionic &amp; Covalent Bonding</td>
<td>8.3; pp 333-337</td>
<td>Online (Group B): Flame Tests and Atomic Emission Spectra</td>
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<td>4</td>
<td>14-Sep</td>
<td><em>Naming Molecular/Ionic Compounds, Acids Practice</em></td>
<td>2.5-2.7; pp 52-66</td>
<td>Lab 2 &amp; Lab 3 In lab (Group B): Intro to Lab Techniques, Part I</td>
<td>Quiz 3 Thursday, Sept. 16 @11:59 pm</td>
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<td></td>
<td>16-Sep</td>
<td>Ionic &amp; Covalent Bonding; Electronegativity</td>
<td>9.1-9.2; pp 367-370</td>
<td>Online (Group A): Exploring Atoms through Flame Tests and Atomic Emission Spectra</td>
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<td>9.4-9.5; pp 375-380</td>
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<td>5</td>
<td>21-Sep</td>
<td>Lewis Structures</td>
<td>9.6; pp 381-384</td>
<td>Lab 4 &amp; Lab 5 In lab (Group A): Intro to Lab Techniques, Part II</td>
<td>Quiz 4 Thursday, Sept. 23 @11:59 pm</td>
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<td>23-Sep</td>
<td><em>Lewis Structure Practice</em></td>
<td>9.8; pp 387-389</td>
<td>Online (Group B): Ionic and Covalent Bonding &amp; Periodic Table</td>
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<td>Week</td>
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| 6    | 28-Sep   | Polarity; *Shapes of Molecules Practice*                  | 10.1; pp 411-420 10.2; pp 421-426 3.1-3.3; pp 79-86 | **Lab 4 & Lab 5**  
In lab (Group B): Intro to Lab Techniques, Part II  
Online(Group A): Ionic and Covalent Bonding & Periodic Table | Quiz 5  
Thursday, Sept. 30 @11:59 pm |
|      | 30-Sep   | Atomic & Molecular Mass; Avogadro's Number; Moles        |                    |                                        |         |
| 7    | 05-Oct   | Using Moles; Percent Composition                          | 3.5; pp 88-91      | **Lab 6**  
In lab & Online (Groups A & B): Molecular Geometry | Quiz 6  
Thursday, Oct. 7 @11:59 pm |
|      | 07-Oct   | *Grams/Moles/Molecules Practice*                          |                    |                                        |         |
| 8    | 12-Oct   | **October Break**                                         |                    |                                        | **No Labs October Break** |
|      | 14-Oct   | Solutions; Concentration and Dilution                     | 4.1; pp 122-124 4.5; pp 147-151 12.3; pp 517-518 |                                        | Quiz 7  
Thursday, Oct. 14 @11:59 pm |
| 9    | 19-Oct   | How Light Interacts w/Matter; Spectroscopy                | PDF on Brightspace | **Lab 7**  
In lab & Online (Groups A & B): Molecular Polarity | Quiz 8  
Thursday, Oct. 21, @11:59 pm |
|      | 21-Oct   | *Solutions Practice*                                      |                    |                                        |         |
| 10   | 26-Oct   | Chemical Reactions and Equations                          | 3.7; pp 93-98 4.2; pp 125-129 | **Lab 8 & Lab 9**  
In lab (Group A): Electrolytes and Non-electrolytes  
Online (Group B): Chemical Interactions | Quiz 9  
Thursday, Oct. 28 @11:59 pm |
|      | 28-Oct   | Precipitation Reactions; Net Ionic Equations              |                    |                                        |         |
| 11   | 02-Nov   | Acid-Base Reactions; Redox Reactions                      | 4.3-4.4; pp 130-146 | **Lab 8 & Lab 9**  
In lab (Group B): Electrolytes and Non-electrolytes  
Online (Group A): Chemical Interactions | Quiz 10  
Thursday, Nov. 4 @11:59 pm |
<p>|      | 04-Nov   | Quantities in Chemical Reactions                          | 3.8; pp 98-102     |                                        |         |</p>
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<tr>
<td>12</td>
<td>09-Nov</td>
<td>Solution Stoichiometry</td>
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<td></td>
<td>11-Nov</td>
<td>Solution Stoichiometry Practice</td>
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<td>4.7; pp 153-156</td>
<td><strong>Lab 10 &amp; Lab 11</strong>&lt;br&gt;In lab (Group A): Techniques to Determine Concentration, Part I&lt;br&gt;Online (Group B): Techniques to Determine Concentration, Part II</td>
<td><strong>Quiz 11</strong>&lt;br&gt;Thursday, Nov. 11 @11:59 pm</td>
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<td>16-Nov</td>
<td>Energy Changes in Reactions</td>
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<td>18-Nov</td>
<td>Stoichiometry and Energy Problem Solving</td>
<td>6.1; pp 231-234</td>
<td><strong>Lab 10 &amp; Lab 11</strong>&lt;br&gt;In lab (Group B): Techniques to Determine Concentration, Part I&lt;br&gt;Online (Group A): Techniques to Determine Concentration, Part II</td>
<td><strong>Quiz 12</strong>&lt;br&gt;Thursday, Nov. 18 @11:59 pm</td>
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<tr>
<td>13</td>
<td>23-Nov</td>
<td>Specific Heat and Calorimetry</td>
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<td>25-Nov</td>
<td>Thanksgiving Break</td>
<td>6.5; pp 246-247 pp 249-252</td>
<td><strong>No Labs</strong>&lt;br&gt;Thanksgiving Holiday</td>
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<td>14</td>
<td>30-Nov</td>
<td>Stoichiometry Practice</td>
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<td>02-Dec</td>
<td>Limiting Reactants</td>
<td>3.9; pp. 102-1-6</td>
<td><strong>Lab 12 &amp; Lab 13</strong>&lt;br&gt;In lab (Group A): Chemical Reactions and Heat Changes, Part I&lt;br&gt;Online (Group B): Chemical Reactions and Heat Changes, Part II</td>
<td><strong>Quiz 13</strong>&lt;br&gt;Thursday, Dec. 2 @11:59 pm</td>
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<td>15</td>
<td>07-Dec</td>
<td>Limiting Reactants; Percent Yield</td>
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<td></td>
<td>09-Dec</td>
<td>Limiting Reactant/Percent Yield Practice</td>
<td>3.10; pp. 106-109</td>
<td><strong>Lab 12 &amp; Lab 13</strong>&lt;br&gt;In-lab (Group B): Chemical Reactions and Heat Changes, Part I&lt;br&gt;Online (Group A): Chemical Reactions and Heat Changes, Part II</td>
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<tr>
<td>16</td>
<td>13-18 Dec</td>
<td>FINAL EXAMS</td>
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<td><strong>Capstones Due</strong></td>
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No Quiz