General Chemistry I, CHEM 111-01  
Spring 2018  
Mondays, Wednesdays and Fridays; 12:00pm – 12:50pm; AYRS 120

Instructor  
Dr. Carolynn Arpin, carpin@csuchico.edu, carolynnarpin.com

Office Hours (you do NOT need an appointment to attend office hours!)  
Mondays and Wednesdays 2-3pm; Tuesdays and Thursdays 11am-12pm, and by appointment outside of these times; PHSC 316 (across from the stockroom)

Lecture Course Materials  
**Primary Text:** Chemistry by John E. McMurry, Robert C. Fay and Jill K. Robinson, 7th Edition, 2014 (older editions of this same textbook will suffice), ISBN 978-0-321-94317-0; Pearson Education Inc.  
**Suggested Text:** Preparing for Your ACS Examination in General Chemistry: The Official Guide; ACS Division of Chemical Examinations Institute; ISBN: 0-9708042-0-2  
**i>Clicker2:** Participation points will be assessed via use of the i>Clicker2; this will aid in class engagement for students and immediate feedback for the instructor  
**Sapling Learning:** Subscription to the online homework system will be required; instructions for purchase and set-up can be found [here](#) or on Blackboard  
**Calculator:** Any graphing or scientific calculator will suffice

Laboratory Course Materials (all available through SAACS in PHSC 309)  
**Laboratory Text:** CHEM 111 General Chemistry I Laboratory Manual – can only be purchased through SAACS  
**For Your Drawer:** Combination or padlock  
**For Your Safety:** Lab glasses or goggles

Supplemental Instruction (SI)  
- Supplemental Instruction (SI) is offered for this course and attendance is encouraged  
- SI sessions are weekly, ongoing study sessions wherein student leaders facilitate sessions for comparing notes, discussing content, developing review material, and predicting test items  
- For information about SI sessions (days, times, locations), refer to the [SLC website](#)

Course Content  
- CHEM 111 is the first course of a 2-semester sequence of general chemistry (CHEM 112 is the second course)  
- High school algebra II, high school chemistry and the completed ELM requirement are all prerequisites for this course  
- Students can expect to work toward achieving these (very) general learning objectives:  
  - Understand how the chemical and physical behavior of atoms and compounds are related to their internal structure and geometric shape.  
  - To gain understanding in the interactions between atoms and molecules.  
  - Understand how chemical reactions occur.  
  - To gain understanding about the relationship of energy to chemical reactions.  
  - To gain understanding and implement the scientific process through hands on laboratory experience.
Efforts will be made to stick to the following *tentative* schedule; the provided experiment numbers correlate to those listed in the laboratory text:

<table>
<thead>
<tr>
<th>Wk</th>
<th>Begins</th>
<th>Lecture Topic(s)</th>
<th>Laboratory Experiment</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 22</td>
<td>Ch.1: Experimenting with</td>
<td>Check-In &amp; <em>Exp #1</em>: Basic Laboratory Techniques</td>
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<td></td>
<td></td>
<td>Measurement</td>
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<tr>
<td>2</td>
<td>Jan 29</td>
<td>Ch.2: Extreme Close-Up of</td>
<td><em>Exp #2</em>: Substance ID by its Physical Properties</td>
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<td></td>
<td></td>
<td>Atoms, Molecules and Ions</td>
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<tr>
<td>3</td>
<td>Feb 5</td>
<td>Ch.3: Mass Relationships and</td>
<td><em>Exp #3</em>: Separating the Components of a Mixture</td>
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<tr>
<td></td>
<td></td>
<td>Chemical Reactions</td>
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<tr>
<td>4</td>
<td>Feb 12</td>
<td><em>Test #1 Wed</em> &amp; Ch.4: Aqueous</td>
<td><em>Exp #4</em>: Chemical Formulas</td>
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<td></td>
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<td>Awesomeness</td>
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<tr>
<td>5</td>
<td>Feb 19</td>
<td>Ch.4 &amp; Ch.5: The Amazing Atom</td>
<td><em>Exp #5</em>: Chemical Reactions</td>
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<td>6</td>
<td>Feb 26</td>
<td>Ch.5: The Amazing Atom</td>
<td><em>Exp #6</em>: Metathesis Reactions and Equations</td>
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<tr>
<td>7</td>
<td>Mar 5</td>
<td>Ch.6: Ionic Compounds &amp;</td>
<td><em>Exp #7</em>: Acid-Base Titration</td>
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<td><em>Test #2 Fri</em></td>
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<td>8</td>
<td>Mar 12</td>
<td>Ch.6 &amp; Ch.7: Covalent Bonding</td>
<td><em>Exp #9</em>: Gravimetric Analysis of Calcium as CaC$_2$O$_4$•H$_2$O</td>
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<td></td>
<td></td>
<td>and Lewis Structures</td>
<td></td>
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<tr>
<td>9</td>
<td>Mar 26</td>
<td>Ch.7 &amp; Ch.8: Bonding and</td>
<td><em>Exp #8</em>: Reactions and Percent Recovery of Copper</td>
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<tr>
<td></td>
<td></td>
<td>Structure</td>
<td></td>
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<tr>
<td>10</td>
<td>Apr 2</td>
<td>Ch.8: Bonding and Structure</td>
<td><em>Exp #11</em>: Lewis Structures, Molecular Geometry, and VSEPR Theory</td>
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<tr>
<td>11</td>
<td>Apr 9</td>
<td><em>Test #3 Wed</em> &amp; Ch.9: Thrilling</td>
<td><em>Exp #12</em>: Calorimetry</td>
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<td></td>
<td></td>
<td>Thermochem</td>
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<tr>
<td>12</td>
<td>Apr 16</td>
<td>Ch.9 &amp; 10: Gases Galore</td>
<td><em>Exp #13</em>: Molar Mass of a Volatile Liquid</td>
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<tr>
<td>13</td>
<td>Apr 23</td>
<td>Ch.10 &amp; Ch.11: It’s Just a Phase</td>
<td><em>Exp #14</em>: Analysis of Alka-Seltzer</td>
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<td>14</td>
<td>Apr 30</td>
<td>Ch.11 &amp; Ch.12: Sassy Solutions</td>
<td><em>Exp #15</em>: Colligative Properties</td>
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<td>&amp; <em>Test #4 Fri</em></td>
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<tr>
<td>15</td>
<td>May 7</td>
<td>Ch.12: Sassy Solutions</td>
<td>Check-Out</td>
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**Learning Assessment**

**Point Breakdown**

- **Participation:** 100 total points (~9%)
  - Clickers: 40 points
  - Reading Quizzes: 52 points
  - Wrappers: 8 points
- **Homeworks (14):** 7 points each = 98 total points (~9%)
- **Tests (4):** 110 points each = 440 total points (~41%)
- **Final Exam:** 225 points (~21%)
- **Laboratory:** 15 points each = 210 total points (~20%)
- **Total Possible:** 1073 points
Participation
- Participation points will be based on:
  - Clicker points will be assessed via responses made using the i>Clicker2 during lecture (all answers will receive full credit)
  - Reading quizzes for the syllabus and every chapter will be posted on Blackboard and will be due before we conclude the chapter’s discussion (answers must be correct for full credit)
  - “Wrappers” for tests will be posted on Blackboard after these assessments are returned; they will have appropriate due dates (all answers will receive full credit)

Homework
- Homework problems for each week will be assigned online through Sapling Learning
- Homework is due by 11:55pm every Friday beginning Week 2
- Students have unlimited attempts for each homework problem, and submitted answers can be checked; however, students cannot “give up” on any problem and view the solution
- If a student completes the Math Review before Friday, January 26th, he/she will earn up to 7 extra credit points

Tests and the Final Exam
- Four 50-minute tests will be given in class throughout the semester:
  - Wednesday, February 14th
  - Friday, March 9th
  - Wednesday, April 11th
  - Friday, May 4th
- The Final Exam will be a 110-minute final exam covering all of the course content; it will be the standardized multiple choice first-semester general chemistry exam provided by the American Chemical Society (ACS)
- Notes and textbooks are not permitted during tests or the final exam

Laboratory
- New instructional videos and virtual labs will be used to enhance students’ pre-laboratory preparation, all of which will be accessed through individual laboratory Blackboard pages
- After watching a provided video or performing a virtual lab, students will answer questions about this content on Blackboard (1 point per experiment)
- Only after answering the questions about the video or virtual lab will the weekly online submission of pre-lab questions be available (4 points per experiment)
- Student presentations of pre-lab content will also be utilized; more details will be provided by your lab instructor
- Laboratory grading will be up to the individual lab instructor, but will be based on the following criteria (10 points per experiment)
  - Data recorded properly and legibly
  - Graphs are prepared and interpreted correctly
  - Significant figures are correctly and consistently applied
  - Post-lab questions are completed and correct

Grading Scale
- The approximate grading scale below will be followed; the instructor reserves the right to modify this scale should the need arise, but ONLY in the student’s favor

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>85-100%</td>
<td>A</td>
</tr>
<tr>
<td>80-84%</td>
<td>A-</td>
</tr>
<tr>
<td>77-79%</td>
<td>B+</td>
</tr>
<tr>
<td>67-69%</td>
<td>C+</td>
</tr>
<tr>
<td>63-66%</td>
<td>C</td>
</tr>
<tr>
<td>0-59%</td>
<td>D</td>
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<tr>
<td>0-49%</td>
<td>F</td>
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</tbody>
</table>

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Late or Missed Work
- If a student misses an i>Clicker2 session, reading quiz, or wrapper, he/she will receive a zero (0) for these Participation points; these points cannot be made up
- Late homework cannot be submitted online since homework solutions become available immediately after the assignment’s deadline has passed
- If a student misses a test, he/she will receive a zero (0) for the test; extenuating circumstances will be considered
- Students may take tests early under rare circumstances, only if the instructor is contacted well in advance
- Any student who misses three laboratory experiments will automatically fail the laboratory and lecture portions of the course

Student Conduct
- Students are expected to follow CSU, Chico’s Code of Student Conduct
- Students are encouraged to work together for the completion of homework but what is submitted must be each student’s own work
- Cheating will result in a zero (0) on the entire assessment and likely further penalties
- Students are encouraged to speak up and participate during class meetings; because the class will represent a diversity of individual beliefs, backgrounds, and experiences, every member of this class must show respect for every other member of this class
- We will all work to promote an anti-discriminatory environment where everyone feels safe and welcome by being committed to providing equality of opportunity for all by eliminating any and all discrimination, harassment, bullying, or victimization; the success of this policy relies on the support and understanding of everyone in this class

Disabilities
- If a student has a disability/health consideration that may require accommodations, please feel free to approach the instructor and/or the Accessibility Resource Center (ARC) as they are the designated department responsible for approving and coordinating reasonable accommodations and services for students with disabilities
- ARC will help you understand your rights and responsibilities under the Americans with Disabilities Act and provide you further assistance with accommodations
- Students can contact the Accessibility Resource Center (ARC) by calling (530) 898-5959, by visiting Student Services Center 170, or by e-mailing arcdept@csuchico.edu

Other Course Policies
- Appealing the grading of homework, quizzes or tests requires a written, detailed complaint; please feel free to take advantage of this opportunity
- Students who are more than 15 minutes late to the laboratory portion of CHEM 111 will be dropped from the course; those students on the waitlist and present for that laboratory section will be added to the course
- The last day to drop this class is Friday, February 16th; after this date you will only be able to drop the class for "serious and compelling" reasons as described in the University Catalog
- No extra points will be given to any student after the course is over; the grade a student receives is the grade he/she earned in the course
- In order to pass the course, a student must earn the grade of a D or better in both the lecture and laboratory portions
- Any student who misses three laboratory experiments will automatically fail the laboratory and lecture portions of the course