Chemistry 110: General Chemistry I

SPRING, 2018

COURSE INFORMATION

Instructor: Lihung Angel Pu
Class Days: T. Th
Class Times: 8:00AM-9:40AM
Class Location: SBS F-225

Office Hours: T,Th 10:00AM-12:00 or by appointment
Office Hours Location: NSM B308
E-mail: LPU@CSUDH.EDU

COURSE DESCRIPTION

Chemistry 110 is a 5 units general chemistry for science and engineering majors, with emphasis on quantitative methods and calculations. Topics include atomic structure, chemical bonding, stoichiometry, gases, liquids, solids, solution chemistry, and thermochemistry. Quantitative analysis using analytical balances, gravimetric and volumetric procedures, spectrophotometry, and calorimetry. This section will be taught in Team-Based Learning style which emphasizes on students' critical reason skill and team work training.

STUDENT LEARNING OUTCOMES

In addition to critical reason skill and team work, upon completion of Chemistry 110, students will be able to:

1. The student will be able to make accurate and precise measurements using different instruments, and perform unit conversions using dimensional analysis.

2. The student will be able to perform stoichiometry and understand the weight relation in chemical reactions. Be able to perform empirical and molecular formula calculations.

3. Be able to name compounds and write balanced chemical equations for simple reactions such as combination, decomposition, combustion, double displacement, & single displacement reactions.

4. Understand the concept of bonding, molecular geometry, molecular polarity, and nature of gases, solids, and liquids.

5. Understand the general concepts of thermodynamics and calorimetry, and their relations to chemical reactions.

COURSE REQUIREMENT

CHEM 108 or high school chemistry and satisfactory performance on the General Chemistry placement exam.

COURSE MATERIALS

2. Scantrons Form 882-E
3. Scientific calculator, capable of doing exponential (exp or EE key) and logarithmic calculations (no programmable graphing calculators or any other electronic device, such as cell phone, are allowed for quizzes or exams). If you forget your calculator during an exam or quiz, you are not allowed to borrow another student calculator. It is your responsibility to bring the correct calculator, No cell phones, smart
phone, Tablet, Ipad, etc... allowed, no exception!

4. Your student ID is REQUIRED to take Exams and Quizzes

5. Computer/Information Literacy Expectations: Students in this class are expected to be able to:
   • Use the university email system (Toromail)
   • Use CSUDH Blackboard
   • Use the publisher’s online homework system
   • Run Flash applications
   • Access additional on-line homework for additional practice problems.
   • For additional information about computing on campus, including tutorials, please go to: IT

COURSE STRUCTURE AND CONDUCT

Style of the Course: Team-Based Learning

• In this class we will be doing active learning in teams. The amount of traditional lecture will be reduced. Instead, we will have classroom activities that will be done in teams. Your grade will be based primarily on individual performance on quizzes and exams. This may be a new experience for many students, and at times it may feel uncomfortable. However, team-based active learning has been shown to improve student grades and improve long-term learning. We are using the team-based learning model to help you learn and be successful in your academic and their long-term career goals. For further information regarding Team-Based Learning, one can refer to the following web-site: Team-Base Learning definition.

COURSE ASSESSMENT AND GRADING

<table>
<thead>
<tr>
<th>Approximate Grading</th>
<th>Scale</th>
<th>Point Distribution</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
<td>Three exams</td>
<td>30%</td>
</tr>
<tr>
<td>B+</td>
<td>85-87%</td>
<td>Quizzes (individual and team)</td>
<td>15%</td>
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<tr>
<td>B-</td>
<td>78-79%</td>
<td>Group activities</td>
<td>10%</td>
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<tr>
<td>C</td>
<td>70-74%</td>
<td>Online homework</td>
<td>5%</td>
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<tr>
<td>D+</td>
<td>65-67%</td>
<td>Laboratory</td>
<td>20%</td>
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<tr>
<td>F</td>
<td>0-59%</td>
<td>Final</td>
<td>20%</td>
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• Absolutely no make-up examinations or quizzes will be given unless the absence is due to illness or a college-sanctioned activity. A note from a doctor regarding the emergency is required for you to make up an assignment.
• Contact me at least one week before if a college-sanctioned activity conflicts with an exam or quiz date.
• Both exams and quizzes may include material from the textbook that is not explicitly discussed in lecture.
• The final examination time and date cannot be changed by the instructor. Students wishing to apply for change of final examination time must do so by the end of the tenth week of classes. Forms are available in the Registrar's Office. Students must provide evidence of extenuating circumstances requiring the change of exam time.
• No re-grades unless there is a clear error in the adding of points. Each student should keep track of his/her points earned in class to that on blackboard for consistency when points have been assigned by the instructor.
EXAMS AND ASSIGNMENTS

Number, Description, Points Each, Total Points

3 EXAMS @ 30% OF THE TOTAL GRADE
You are required to present your student ID before Quizzes and Exams. No ID, no Exam = 0 credit. Exams may include all the materials from lecture, textbook and handouts. Questions will not be identical to questions from lecture, the book, handouts, proton.csudh.edu, but test the same concepts.

5 INDIVIDUAL AND 5 TEAM QUIZZES @ 15% OF TOTAL GRADE
Based on textbook, course packet, and online course materials (including my comments on discussion topic postings). No makeup quizzes will be given for any reason.

GROUP ACTIVITY AND ON-LINE HOMEWORK @15% OF OVERALL GRADE
No make-up group assignments. Attendance will be recorded according to in-class activity participation. This part of grade includes in class group activity, worksheet and on-line homework. Your Group activity participation will be evaluated by your teammates. Some of these will be non-graded, but there will be several graded assignments. One grade per group will be assigned. Groups will be compiled by the instructor. For some of these group activities advanced reading will be assigned along with the learning objectives. The readings will be essential to the success of your group exercises. The assessment of your readings will be included in the on-line homework questions. These assignments will be conducted within the framework of Team-Based Learning, which promotes student engagement and long-term retention of content.

LABORATORY @ 20% OF OVERALL GRADE
You must be enrolled in a laboratory concurrently with the corresponding lecture. Bring safety glasses/goggles and closed toed shoes to every lab section. Please use your cell phones outside of the lab if it is an emergency. The lab consists of 20% of overall grade which will be on a separate lab syllabus provided by the instructor.

ONE FINAL @ 20% OVERALL GRADE
The final exam is a cumulative, two-hour exam. Final Exam will not be return to you. There will be absolutely no curving or scaling of any exams.

EXTRA CREDIT
There are extra credit for surveys. There is plenty of non-extra credit work to complete.

ACADEMIC INTEGRITY

The University adheres to a strict policy regarding cheating and plagiarism. These activities will not be tolerated in this class. Become familiar with the policy and what constitutes plagiarism (http://www4.csudh.edu/copyright/plagiarism/index). Any cheating or plagiarism will result in failing this class and a disciplinary review by the University. These actions may lead to probation, suspension, or expulsion.

TECHNICAL SUPPORT FOR BLACKBOARD
Student support for Blackboard or other IT help is provided by the Information Technology (IT) office, located on the 3rd floor of Welch Hall. They can be reached at (310)243-2500 or http://www4.csudh.edu/it/faq-help/student/index

**TENTATIVE COURSE SCHEDULE**

*This syllabus and schedule are subject to change. Students will be given ample notice if changes occur.*

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Unit</th>
<th>Class Activities</th>
<th>Quiz / Assignment</th>
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<tbody>
<tr>
<td>1</td>
<td>1/23</td>
<td></td>
<td>Introduction- Team-Based Learning &amp; Course Survey</td>
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<tr>
<td></td>
<td>1/25</td>
<td>Unit 1</td>
<td><strong>Ch 1, 2.1-2.7 &amp; Ch 3.1</strong></td>
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<tr>
<td>2</td>
<td>1/30</td>
<td></td>
<td>Matter and Measurement</td>
<td>Quiz 1: Ch 1, 2.1-2.7, 3.1</td>
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<tr>
<td></td>
<td>2/1</td>
<td></td>
<td>Atoms, Ions, and compounds</td>
<td>Unit 1 Worksheet Due</td>
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<tr>
<td>3</td>
<td>2/6</td>
<td>Unit 2</td>
<td><strong>Ch 3.2-3.10 and Ch 4</strong></td>
<td>Quiz 2: Ch 3.2-4</td>
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<tr>
<td></td>
<td>2/8</td>
<td></td>
<td>Chemical Composition and Formulas</td>
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<td></td>
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<td></td>
<td>Chemical Reactions and Equations</td>
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<tr>
<td>4</td>
<td>2/13</td>
<td></td>
<td>Stoichiometry</td>
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<td></td>
<td>2/15</td>
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<td>Redox Reactions</td>
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<td><strong>Withdraw without &quot;W&quot; Deadline</strong></td>
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<tr>
<td>5</td>
<td>2/20</td>
<td></td>
<td>Molarity and Solution Stoichiometry</td>
<td>Unit 2 Worksheet Due</td>
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<td></td>
<td>2/22</td>
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<td>Team Contribution Assessment #1</td>
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<tr>
<td>6</td>
<td>2/27</td>
<td>Unit 3</td>
<td><strong>Ch 6</strong></td>
<td>Quiz 3: Ch 6</td>
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<tr>
<td></td>
<td>3/1</td>
<td></td>
<td>Energy and Chemical Reactions</td>
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<td>7</td>
<td>3/6</td>
<td></td>
<td>Thermochemistry</td>
<td>Unit 3 worksheet due</td>
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<td></td>
<td>3/8</td>
<td>Unit 4</td>
<td><strong>Ch 7, 8 &amp; 9.2-9.3</strong></td>
<td>Quiz 4: Ch 7, 8</td>
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<tr>
<td>8</td>
<td>3/13</td>
<td></td>
<td>Quantum Theory, Quantum Mechanics, Bohr Model</td>
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<td></td>
<td>3/15</td>
<td></td>
<td>Atomic Orbitals, Electron Configurations</td>
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<tr>
<td>9</td>
<td>3/20</td>
<td></td>
<td>Periodic Properties</td>
<td>Unit 4 Worksheet Due</td>
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<tr>
<td></td>
<td>3/22</td>
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<td><strong>Exam #2 (unit 3, 4)</strong></td>
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<tr>
<td>10</td>
<td>3/27</td>
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<td><strong>Spring Recess (includes Cesar Chavez Holiday)</strong></td>
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<td>3/29</td>
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<td><strong>No Class</strong></td>
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<tr>
<td>11</td>
<td>4/3</td>
<td>Unit 5</td>
<td><strong>Ch 9.1, 9.3-9.10 &amp; Ch 10</strong></td>
<td>Quiz 5: Ch 9, 10</td>
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<tr>
<td></td>
<td>4/5</td>
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<td>Ionic Bonds and Lattice Energy</td>
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<td>Covalent Bond, Lewis Structure, Resonance, Formal</td>
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<tr>
<td>12</td>
<td>4/10</td>
<td></td>
<td>Bond Polarity, Bond Energy</td>
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<tr>
<td></td>
<td>4/12</td>
<td></td>
<td>Molecular Geometry, VSEPR, Dipoles</td>
<td>Unit 5 Worksheet Due</td>
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<td></td>
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<td></td>
<td>Bonding Theories, Hybridization</td>
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<tr>
<td>13</td>
<td>4/17</td>
<td>Unit 6</td>
<td><strong>Ch 5 &amp; Ch 11</strong></td>
<td>Quiz 6: Ch 5 &amp; 11</td>
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<tr>
<td></td>
<td>4/19</td>
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<td>Gas Properties, Gas Laws, Density, Gas Stoichiometry</td>
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<td>Kinetic Molecular Theory &amp; Real Gases</td>
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### SURVEY

In order to facilitate continuous improvement and course redesign, there may be periodic surveys posted to the class by both the Office of the Chancellor and Dr. Pu. Extra credit points will be awarded for participation in class surveys.

### ETIQUETTE

It is important that all participants in a course be aware of proper behavior and respect one another. Remember that the University values diversity and encourages discourse. Be respectful of differences while engaging in discussions

- Students are expected to be in class at the start of class every day, will stay for the whole class, participate and do every class outside and in class assignment, and will attend every class and laboratory.
- Students should not bring visitors to the class without special permission. Students cannot bring visitors to laboratory because of safety concerns.
- Student will notify the instructor if they are going to miss class. This can be done in person, by e-mail, or by a phone call in an emergency situation.
- Students will be prepared when they come to class and lab. Students are expected to read the chapter before coming to lecture, and read the experiment and complete the pre-lab exercises before coming to lab.
- Students should do the assigned homework. It is best to do the homework the same day as the lecture. Students should plan to spend about 1.5 hours each day after class, and about 4 hours on the weekend studying for this class. Students who are unwilling to devote the time to studying will not pass the class. (This is a 5 unit class, so it must be assumed that homework will take at least 10 hours per week.)
- **Turn off all cell phones, pagers, and electronic devices when in class!** Students will not disrupt the class with cell phones, late arrivals, excessive noise, eating and drinking, etc. Late arrivals, side-discussions and other unprofessional behavior will be addressed at the instructor’s discretion. Please be respectful of others.
- Students will clean up their own messes.
- Students will not cheat or plagiarize otherwise an “F” grade will be given and disciplinary action will be taken. This includes copying someone else’s lab report or lab data. Dishonest students will be reported to the administration for further disciplinary action. No programmable calculators or devices with alphanumeric text storage capacity will be allowed in the exams (including language translators and cell phones). Communicating with another student during the exam will result in a zero.
Students will ask questions in class, of other students, and of the instructor. Questions are encouraged as long as they relate to the lecture subject. Sincere questions are never stupid and you will not be ridiculed or degraded for asking them.

Students will notify the instructor of a medical condition or disability which may prevent the student from compliance with the course syllabus.

**INTERACTING WITH ME**

I'll try to respond within 12-48 hours to emails sent me from you. For quick questions, the turnaround time may be much shorter. For questions that involve, say, the clarification of a chemical concept, you may want to visit me in my office at NSM B308. My message phone works most of the time, but email is to be preferred. My regular office hours are MW 10:00am to 12:00pm Pacific Time.

**STUDENTS WITH DISABILITIES**

CSUDH adheres to the Americans with Disabilities Act with respect to providing reasonable accommodations for students with temporary or permanent disabilities. If you have a disability, or believe you might have a disability, I encourage you to consult with Disabled Student Services. They are located in Welsh Hall D-180 and can be reached at (310) 243-3660 or [http://www3.csudh.edu/student-affairs/dss/default.html](http://www3.csudh.edu/student-affairs/dss/default.html). If there is anything I can do assist or accommodate you, please let me know.

To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability resource Center. Your cooperation is appreciated.

**STUDENT SERVICES:**

A complete list of all academic support services is available on the [Academic support](http://www3.csudh.edu/student-affairs/dss/default.html) and [student supports Services](http://www3.csudh.edu/student-affairs/dss/default.html) website.

[Counseling and Psychological Services](http://www3.csudh.edu/student-affairs/dss/default.html) offers confidential counseling services by licensed psychologists, counselors, and social workers. More info can be found at their website or by contacting (310) 243-3818.

**SUCCEEDING IN CHEMISTRY:**

This class is a heavy load, and constitutes a part-time job, so schedule your time appropriately. Many successful students report that they commit **10-15** hours outside of class for CHE 110 lecture alone. You may be overwhelmed if you have:

- 12 or more units & work 20 hours a week or
- 10 or more units & work 40 hours a week

To improve your chances of succeeding in chemistry, I highly recommend the following:

- Come to all classes and read all material before coming to class
- Do not fall behind
- Review the study guides and do all the problems on unit activity sheet
- Focus on understanding the concepts
- Form study groups: Get together with other class members and form a study group which meets regularly to do homework and study.
- Come to office hours! Office hours are a great time to get extra help. Please ask questions!
- Attend SI sessions. SI leaders will help you improve your study skill
- Try the recommended homework problems
ACKNOWLEDGEMENT OF SYLLABUS:

By signing and returning this sheet, I acknowledge that I have read the California State University Dominguez Hills General Chemistry I, CHE110, Syllabus for Spring 2018 and that I have understood all of its contents.

_______________________________
Printed full name

______________________________
Signature

______________________________
Date (mm/dd/year)