S Y L L A B U S

General Chemistry I  CHEM-1411 (51501)

Instructor: Xingzhong Yan, PhD

Fall 2019 (August 25 – December 13)

M, W: 6:00 p.m. – 8:30 p.m. A743 LEC
M, W: 6:00 p.m. – 8:30 p.m. A721 LAB
Email: xyan@dcccd.edu
Office: A721 (Lab Area)
Office Hours: T & R nights by appointment

Required Textbook, Laboratory Manual, and Others

A scientific calculator with log and anti-log functions will be necessary to do problems throughout the semester. You may buy it at the college bookstore. Also, you can use the calculation function of your computer or smart phone (There are different views of the calculator; you will frequently use the scientific one for this course). You must have approved safety goggles (at the bookstore) for laboratories.

Course Objective
This course is designed for science and science-related majors. The course offers a good knowledge frame and understanding in General Chemistry I. This course will advance students' knowledge in basic chemistry concepts/tools, atomic/molecular structures, phase properties, and reactivity of matters. This will enable students to ask and answer important questions concerning atomic and molecular structure of matter, states of matter, chemical reactions and equilibria, stoichiometry, electronic structure, quantum numbers, electron configurations in atoms, periodic trends in the properties of atoms, ionic and covalent bonding, and properties of gases and solutions.

The lectures, assignments, and examinations will emphasize both concepts and the context, while the labs provide experimental components for extensive review of the concepts and chemistry tools in problem solving.

Course Prerequisite
CHEM-1411, MATH 1314 or equivalent and Developmental Reading 0093 or English as a Second Language (ESOL) 0044 or have met the Texas Success Initiative (TSI) Reading standard.

The Instructor’s Teaching Philosophy:
Acquisition of scientific knowledge requires the development of higher cognitive skills such as analysis, synthesis, comprehension, application, and evaluation. It is my hope to succeed in teaching these critical-thinking and problem-solving skills, which once acquired and practiced in the courses I teach, will serve students in situations they encounter throughout their lifetimes.
Grading Policy

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Lab Average</td>
<td>20%</td>
</tr>
<tr>
<td>Quizzes/Homework</td>
<td>15%</td>
</tr>
<tr>
<td>Exams (3 one-hour exams)</td>
<td>45%</td>
</tr>
<tr>
<td>Final Exam (comprehensive)</td>
<td>20%</td>
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Three one-hour Exams and a total of 10 Quizzes/Homework will be given. These will cover the reading, lecture material, and assigned problems. The Final Exam will be comprehensive.

Grades will be assigned according to the following scale:

- 90 - 100 % : A
- 80 - 89 % : B
- 70 - 79 % : C
- 60 - 69 % : D
- Below 60% : F

Test policy

Quizzes are will be scheduled during the lectures. Students are expected to attend all the lectures. If unique situations arise, please contact the instructor for a makeup. No makeup labs will be allowed. Exams may be a combination of multiple choice, true or false, short answer, and matching formats. All exams must be taken as scheduled. A makeup will be allowed only for extreme situations such as absences due to a doctor-verified illness. This must be documented with a note from a doctor verifying that the student was too ill to take the scheduled exam. Any missed exams will result in a grade of zero.

Examination Needs

Students must bring the following to each examination:

Scientific Calculator (Students may not use a graphing calculator or a calculator capable of storing alpha-numeric/textual material), No. 2 pencils with eraser, ScanTron 882-E (available at the ECC Bookstore). Students are not allowed to have access to cell phones or digital pagers during any exam and quiz. For open-book tests (exams or quizzes), students can use textbook and lecture power-points & notes, but no internet resources.

Cell Phones

Please silence all cell phones prior to class. Texting during class is inappropriate and will not be tolerated.

Academic Ethics

All students are expected to pursue their scholastic careers with honesty and integrity, and the Department of Arts and Sciences will not tolerate any form of violation of the
Student Code of Conduct as printed in the El Centro College Catalog and available at http://www.dcccd.edu/cat9899/cunduct.htm. All violations will be penalized accordingly, and will be forwarded to the proper College authorities for review. The College may, at its discretion, impose additional penalties on the student including academic probation, suspension, or expulsion. Scholastic dishonesty includes but is not limited to plagiarism, collusion, fabrication, cheating, submission for credit of any work or materials that are attributable in whole or in part to another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. During tests or quizzes, students are not allowed to have access to cell phones or internet resources. Further examples of academic dishonesty include: exchanging answers or information, looking at another student’s paper, bringing unauthorized notes of any form into the test or quiz, including written notes (crib sheets), digitally stored information (formulas, constants, any alpha-numerical data, etc.), notes stored in any other medium, or looking at a book or other unauthorized source of information during the quiz or test. Since dishonesty harms the individual, all students, and the integrity of the College, policies on scholastic dishonesty will be strictly enforced. Any form of disruptive behavior will not be tolerated.

**Attendance/Participation**

*El Centro policy requires regular attendance.* Therefore, students are required to attend not only the lecture classes but also the laboratory sessions. Accumulating three unexcused absences will lower your final score by one letter grade. If a student miss more than three sessions (lecture and/or lab), the student final grade for the class will be an “F”. Participation in laboratory sessions is an important part of this course, since you will actually observe the physical and chemical properties of matter as well as the chemical laws applied through experiments. In the laboratory, students will be required to wear safety goggles, obey all safety regulations, clean up their equipment, and work area before getting their lab report validated. Everyone are expected to participate in class discussions, problem solving exercises, and to complete and turn in all assignments and lab reports on time. Check the college e-mail regularly for new announcements, changes, and other important information. Being unaware of the available information will not be accepted as an excuse for failing to comply with it. If any students are representing the college at an official function or being called into service by the government, see the instructor ahead of time so arrangement can be made.

**Withdrawing policy**

If a student is unable to complete a course in which she/he is enrolled, it is the student’s responsibility to withdraw from the course by the appropriate date (Last day to withdraw is Nov. 15). If the student does not withdraw, she/he will receive a performance grade of “F”. If the student is unable to appear in person, she/he may withdraw by writing to the Registrar prior to the deadline date.

**Americans with Disabilities Act**
El Centro College is committed to the spirit and letter of the federal equal opportunity legislation. The Americans with Disabilities Act (ADA) provides those with disabilities with the same opportunities as all citizens. If you require an accommodation based on disability, I would be happy to meet with you in the privacy of my office, during the first week of the semester, to make sure you are appropriately accommodated. You should also contact the Disability Services Office, Room A110, phone number (214)-860-2411.

Financial Aid Statement
Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawal may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate after the ‘drop date’, are also subject to this same policy.

Religious Holiday Statement
A student who is absent from classes for the observance of a religious holiday, shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence, if - not later than fifteen days after the first day of the semester - the student notified the instructor of each class scheduled on the date the student will be absent for a religious holiday. A “religious holiday” means a holiday observed by a religion whose places of worship are exempt from property taxation under Section 11.20 of the Tax Code. The notice shall be in writing and shall be delivered by the student personally to the instructor with receipt acknowledged and dated by the instructor, or, by certified mail, return receipt requested, addressed to the instructor. A student who is excused under this section may not be penalized for the absence, but the instructor may appropriately respond if the student fails to satisfactorily complete the missed assignment or examination.

Children on Campus
El Centro College strives to protect an environment most conducive to teaching and learning for all the enrolled students. Minor children may not be brought to classrooms, labs, testing areas, or study areas of the college. This practice would be disruptive to the learning process. Children who are taking part in organized scheduled activities, or who are enrolled in specific classes, are welcomed. For reasons of security and child welfare, the college will not permit unattended children to be left anywhere on the premises. Students/parents who have problems with childcare should contact the Advisement/Counseling Center or the Adult Resource Center to receive referrals to childcare services in the area.

Hazardous Materials
Lab exercises are usually connected with relevant lecture chapters. CHEM 1411 will utilize the traditional and small-scale chemistry approach to chemistry instruction, if
possible, which is considerably less hazardous than a standard traditional chemistry laboratory. We will still use chemicals, but much less of them. During our experiments, we may also use substances deemed to be “hazardous” by the state of Texas or by some Federal Authorities. Before using any hazardous substances, students will be given appropriate information and warning by the instructor regarding the proper handling of such substances. Safety precautions will be given and proper behavior in case of an accident will be carefully explained. Protective attire and goggles will be strictly required during all laboratory operations. It is the students’ responsibility to use the appropriate protective gear and to handle substances as instructed. Performing unauthorized experiments or a failure to follow all Safety Rules will result in dismissal from the laboratory session or the chemistry class, or both.

**NO Freelance Experiments are allowed!**
Material Safety Data Sheets (MSDS) are available in the Chemistry Laboratory. They describe in detail many of the chemical properties of each hazardous material and suggest what actions to take to avoid unhealthy exposures. The MSDS are located in Lab A721.
Please feel free to discuss with your instructor any questions you may have related to any substances used in this course.

**Bomb Threats**
In the event of a bomb threat to a specific facility, College Police will evaluate the threat. If required, exams may be moved to an alternate location, but exams will not be postponed.

**Tentative Lecture & Exam Schedule:** The following represents a tentative schedule of lecture and examination material for this semester. *The exact dates of the three major exams will be announced in class.* There is another option for the lab-setting from the college. In state real labs, the college purchased a Virtual ChemLab software. Students may use the software to do the labs (*Virtual ChemLab: General Chemistry, Student Lab Manual / Workbook, v2.5, 3/e Woodfield & Asplund ©2006*). Since this lab manual and its CD out of selling, students can find the manual at eCampus that was download from Brigham Young University website. The publisher allows us to use our site licensed CD to install into students’ computers.

For this software or CD students can have two options:

(i) Bring their laptops or flash drives to school at appointed time to copy and install the software.
(ii) Find the URL link please click “Download”, and Click “set up” to install by students.

*The college and instructor of this course reserves the right to make any and all changes deemed necessary with prior notification of the class.*
**Tentative Schedule:**

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<th>Week of</th>
<th>Lecture Material</th>
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| 08/25   | Chapter 0, Introduction and Review of Chemistry  
Lab 0: Safety & Equipment  
Lab 1: Measurements |
| 09/01   | Ch. 1, Matter & Measurements  
Lab 2: Mixtures and Separation Techniques |
| 09/08   | 09/03, Labor Day Holiday  
Ch. 2, Atoms, Molecules & Ions |
| 09/15   | Ch. 3, Mass Relations in Chemistry; Stoichiometry  
Lab 3: Stoichiometry and Empirical Formal |
| 09/22   | Review for Exam 1  
Exam 1 over Chs. 1 – 3 |
| 09/29   | Ch. 4, Reactions in Aqueous Solutions  
Lab 4: Neutralization, Precipitation, and Redox Reactions |
| 10/06   | Ch. 5, Gases  
Lab 5: Gases Preparation & Gas Laws |
| 10/13   | Ch. 6, Electronic Structure & the Periodic Table  
Lab 6: Spectroscopy & UV-Vis Spectra of Ions and Dyes |
| 10/20   | Break |
| 10/27   | Review for Exam 2  
Exam 2 over Chs. 4 – 6 |
| 11/03   | Ch. 7, Covalent Bonding  
Lab 7: What Does a Molecule Like?  
Bonds, Molecular Models, and Molecular Shapes. |
| 11/10   | Ch. 9, Liquids & Solids  
Lab 8: Crystallization and Melting Point.  
(11/09, Last Day to Withdraw) |
| 11/17   | Ch. 10, Solutions  
Lab 9: Solutions  
Thanksgiving Holiday |
| 11/24   | Review for Exam 3  
Exam 3 over Chs. 7, 9 & 10 |
| 12/01   | Review for the Comprehensive Final Exam |
| 12/08   | **Comprehensive Final Exam** *(The exact date will be announced)* |