

CHEM - 1412-001
General Chemistry**Faculty:** Dr. Tasneem Hossain-Kumar

4 Credit Hrs. (2.5 hrs. lecture and 4 hrs. lab)

Office Location: STC 302**Office Phone:** 903-886-5399**Office Hours:** TR 11.00- 12.00 PM and by appointment**Email:** tasneemhossain@gmail.com**Lecture:** TR 9.30AM – 10.45 AM STC 127**Lab:** R 2.00 PM – 5.50 PM STC 310**Lab:** T 2:00 PM - 5:50 PM STC 311**Lab:** T 2:00 PM – 5:50 PM STC 310

Text/ Manual and other required material:

- **Text:** General Chemistry, 9 th Edition, Houghton Mifflin Company, by Ebbing.
- **Lab Manual:** Experiments in General Chemistry, 9 th Edition, Houghton Mifflin Company, by Ebbing
- **Supplies:** Non-programmable Calculator (bring to class and lab), **Safety Goggles** with side shields and a **Padlock** are a Must for the lab work (**No Exception**); Appropriate lab attire. Lab coats (optional) on lab day.

Course Description: This course is part of the university studies core courses and will meet criteria for laboratory science credits. This is the second part of a two-course sequence of general chemistry. The course is designed primarily for the students majoring in sciences or in pre-professional programs. By the end of the course you will be familiar with a range of fundamental chemistry topics including chemical reaction rates, chemical equilibrium, acid base chemistry, solubility, thermodynamics, electrochemistry, nuclear chemistry, organic chemistry, inorganic chemistry and biochemistry. Chemists deal with these subject areas everyday, but these concepts are also crucially important to other branches of science and technology.

Course Outcome: Use LeChatelier's principle to predict the effects of concentration, pressure and temperature changes on equilibrium mixtures. Balance Oxidation-Reduction reaction. Write simple structures of the organic compound and name the compound.

Prerequisite: The student must have completed Math 141 or be concurrently enrolled in Math 142 or other higher-level courses in mathematics. Student who had adequate high school preparation in mathematics or were exempted from Math 141 will be allowed to enroll with the instructor's consent. Concurrent enrollment of Math 141 with CHEM 1412 generally is not encouraged. Students who are currently enrolled in math remediation courses such as PJCM 300, PJCM 306, or Math 131 will not be eligible for enrollment in CHEM 1412.

Class Procedure: The course is mainly a lecture oriented and will focus on important chemistry concepts but will not serve as a substitute for reading the textbook. The textbook is a more detailed presentation with a more extensive set of example problems. You are expected to read your textbook ahead of time. That will give you a jump-start on the classroom material. Homework will be assigned after completion of each chapter. Students are encouraged to read the chapter to be discussed and to work with me on doing the problems. Chemistry is a physical science it is imperative to master calculations to pass the course.

Communication: If the instructor needs to contact an individual student, it will be via the student's e-mail account. Students should check e-mail frequently, especially after absence. E-mail is the best, easiest and fastest way to communicate with me since I check my email daily.

Course Requirements:

1. **Exams:** Four unit exams and one mandatory, comprehensive final exam. If you missed an exam, the points for the missed exam will be replaced by final exam grade making the final exam count for a greater percentage of your grade. **No make-up exams.** All students must take the exams at the scheduled time. Exams cover lecture, quiz and homework material.
2. **Quizzes:** There will be quizzes, which will be 5 % of the overall class grade. Each week we might have announced or unannounced quizzes, which will be given at the class. Lowest two quiz scores will be dropped. There will be no makeup quizzes. Quizzes cover lecture and homework material.
3. **Homework:** Homework will be assigned but will not be collected for grading. You need to do the problems in order to succeed in the course. The more you will practice the better you will get. To succeed in the class, you need to be persistent in reading the book, attending class and following the lecture, doing the homework.
4. **Lab:** The laboratory experiments are an integral part of this course. They are designed to illustrate some of the principles and reactions that are presented in lecture with the hope that the chemistry will thus become more concrete and less abstract. Students are expected to attend all labs and hand in lab reports by the beginning of the next lab session. There will be no make-up labs no matter what the excuse is for the absence. Total Thirteen labs + check in; All labs to be done in STC 310 and STC 311 under instructors' supervision. **Safety Glasses and appropriate attire must be worn at all times in the laboratory.** You must bring your own safety goggles and padlock in the laboratory. No open toe shoes, flip-flops or shorts are allowed in the lab. Students must come prepared and on time for lab.
5 % of the lab grade is dependent on student's behaviors in the lab to clean up their lab area and glassware after completion of their lab work and to replace all items used to their proper location. Any students who is pregnant or has other special needs should consult with his/her physician before taking a chemistry class involving laboratory work.
5. **Attendance and Class Participation:** Class attendance is beneficial for learning, so you should attend each class. It is to student's benefit to attend lecture as additional material not contained in the text is given to help the student understand chemical principles. The Department of Chemistry adheres to the attendance policy set by the University as stated in the most current Undergraduate Catalog. The attendance record is taken from the daily sign-in sheet will be counted as a missing lecture. Excessive absence is defined as missing more than 10% of the lectures or more than 10% of the laboratory sessions without excusable reasons. Excessive absence will be reported to the Dean of the College and Dean of students. In addition, according to the TAMU-Commerce Procedure A13.02, if a student has excessive absences, the instructor may drop the student from the course. The instructor will only excuse an absence if the student provides, with appropriate document an excusable reason allowed by the TAMU-Commerce Procedure A13.02. Good class attendance will be necessary in order to pass this course.

Methods of Student Evaluation and Grading Scale: 4-hour exams, final exam, quizzes, and weekly labs will evaluate Students. Four Exams will be 60%, Final Exam 10 %, quizzes 5 %, and the labs will be 25% of the final grade. The grade is based on a weighted average.

The grade scale will be A= (86.0 - 100%), B = (73.0 – 85.9 %), C = (60-72.9%), D = (45-59.9%), F = <45%.

Class/Lab Etiquette: Students are required to turn off all cell phones, MP3 players, PDA's, Pagers, and any other electronic devices before entering the class or in the laboratory. Students are expected to comply with the student code of conduct as stated Student's Guidebook, Policies and Procedures, Conduct. If the student's failed to comply with the code of conduct and being disrespectful, disruptive to the instructor or the students of the class, the instructor reserves the right to dismiss the student from the class on the first offense. A second offense may constitute dismissal from the course with a failing grade.

Academic Integrity and Dishonesty Policy: All students are expected to pursue their scholastic careers with honesty and integrity. Academic dishonesty includes (but is not limited to) cheating, falsification of date, plagiarism, and contracting/collusion with others to take your tests or do your work. Cheating is the use or acquisition of information (data, constants, formulas, textual material, etc.) from either unauthorized sources or in an unauthorized manner.

Examples include but are not limited to: -

- Exchanging information during a test or quiz
- Looking at another student's paper during a test or quiz
- Bringing information in any forms into a test or quizzes other than personal knowledge. This includes written notes (crib sheets) and digitally stored information (formulas, constants, textual, etc.) on calculators, cell phones, pagers etc.
- Looking at a book or other unauthorized source during the test or quiz.
- Accessing information by any electronic means (cellular phone, pagers, personal stereos, etc.)
- Processing data or information in an unauthorized manner using a programmable calculator or computer. In other words, unless you have received authorization, you are not to use any computer program. This includes specialty computers or calculators in which the programming is built in to the computer; you are permitted to use simple calculators, which perform arithmetical, Logarithmic, and trigonometric functions.

Disciplinary action will be pursued in all instances in which it is determined that academic dishonesty has occurred. Disciplinary action may include but is not limited to:

- Assignment of a failing grade for a test, examination, or assignment;
- Assignment of a failing grade for a course;
- Student disciplinary sanction.

Student Withdrawal: It is the student's responsibility to withdraw from class if so desired. However, the instructor reserves the right to administratively withdraw any student who is not actively fulfilling the objectives of the course before the final.

Incomplete: An incomplete is given only when a student, for a valid reason, has been unable to complete course within the time allotted and has a current average ≥ 70 %. This is not allowed except in documented illness.

Tentative Exam, Laboratory and Lecture Schedule
CHEM-1412-001; Fall 2012

Week	Date	Tuesday- Thursday Lecture	Date	Lab Experiment
1	8/28-8/30	Class Syllabus and Policy Ch. 12: Solutions	8/28-8/30	Check in equipment, Safety Lecture & Quiz
2	9/4-9/6	Ch. 12: Solutions Ch. 13: Chemical Equilibrium	9/4-9/6	Experiment 12A: A Molar Mass From Freezing Point
3	9/11-9/13	Ch. 13: Chemical Equilibrium Ch. 14: Rates of Reaction	9/11-9/13	Experiment 12B: Softening Hard Water
4	9/18-9/20	Exam I (Chapter 12-14) Ch. 15: Acids and Bases	9/18-9/20	Experiment 13: The Rate of an Iodine Clock Reaction
5	9/25-9/27	Ch. 15: Acids and Bases Ch. 16: Acid-Base Equilibrium	9/25-9/27	Experiment 14A: Le Charlie's Principle
6	10/2-10/4	Ch. 16: Acid-Base Equilibrium Ch. 17: Solubility and Complex-Ion Equilibrium	10/2-10/4	Experiment 14B: Determination of an Equilibrium Constant
7	10/9-10/11	Exam II (Chapter 15-17) Ch. 17: Solubility and Complex-Ion Equilibrium	10/9-10/11	Experiment 15: The Relative Strength of Some Acids
8	10/16-10/18	Ch. 18: Thermodynamics and Equilibrium	10/16-10/18	Experiment 16A: Equilibria with Weak Acids and Weak Bases
9	10/23-10/25	Ch. 18: Thermodynamics and Equilibrium Ch. 19: Electrochemistry	10/23-10/25	Experiment 16B: An Acid-Base Titration Curve
10	10/30-11/1	Ch. 19: Electrochemistry	10/30-11/1	Experiment 17A: A Solubility Product Constant
11	11/6-11/8	Exam III (Chapter 18-19) Ch. 19: Electrochemistry	11/6-11/8	Experiment 17B: Qualitative Analysis of Ag^+ , Cu^{+2} , Zn^{+2} and Ca^{+2} ions
12	11/13-11/15	Ch. 23: Organic Chemistry	11/13-11/15	Spontaneity
13	11/20-11/22	Ch. 23: Organic Chemistry Ch. 20: Nuclear Chemistry	11/20-11/22	Experiment 19A: Oxidation-Reduction Reactions
14	11/27-11/29	Exam IV (Chapter 20-23) Ch. 20: Nuclear Chemistry Ch. 21-22 Main Group and Transition Elements	11/27-11/29	Thanks Giving / No Lab
15	12/4-12/6	Ch. 21-22 Main Group and Transition Elements	12/4-12/6	Experiment 23: Thermochemistry and Complex Ions, Check-Out
16	12/13	Final Exam (Chapter 12-23)		

Note: Instructor keeps the right to make any changes of the syllabus.

Important dates:

- Exam I– 20th September, 2012
- Exam II– 11th October, 2012
- Exam III – 8th November, 2012
- Exam IV – 29th November, 2012
- Final Exam – 13th December (Thursday at 8.00 am-10.00 am), 2012