TEXAS A&M UNIVERSITY - CORPUS CHRISTI
Department of Physical and Life Sciences

A. COURSE INFORMATION
Course number/section: CHEM. 1412/892, 893, 886, 887
Class meeting time: TR 9:30-10:45 am
Class location: BH 103
Prerequisites: CHEM 1411
Course Website: Announcements, forms, handouts, learning materials etc. are either posted, or will be posted on blackboard. You will be able to login using your student ID and Password.

B. INSTRUCTOR INFORMATION
Instructor: Feri Billiot
Office location: CS103D
Office hours: TR 9-9:30 am, 1:45-4 pm or by appointment
Telephone: 361-8256067
e-mail: fereshteh.billiot@tamucc.edu
Appointments: by request

C. COURSE DESCRIPTION
General Chemistry is the foundation course in chemistry for all science majors. This course will provide a basic understanding of chemical concepts such as periodic properties, structure, bonding, thermodynamics, and chemical kinetics, and equilibrium.

D. PREREQUISITIES FOR THE COURSE
CHEM 1411

E. REQUIRED TEXTBOOK(S) AND SUPPLIES
Textbook: Principal of General Chemistry by Silberberg and connect access code

You can buy the book online by using the following URL
or you can follow the link on blackboard.

Online Homework: If you buy the book without connect access code, you can buy the access code for one semester online. All students required to start connect the first week of school. Regular assignments will be posted and students required completing the assignments on-time. If you already have connect account from Chemistry I, you can use it.
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to improve learning. The process begins by describing student learning outcomes (they focus on what you are expected to learn) like the ones described below for this course. By measuring how well you are accomplishing these student learning outcomes the instructor can take appropriate actions to enhance your learning.

Exams and online work will be used to assess students learning and by the end of the semester students will master the following material:

- Intermolecular Forces
- Colligative Properties
- Factors that affect reaction rates
- The Rate Law: The Effect of Concentration on Rate
- The Change of Concentration with Time
- The concept of Equilibrium
- Interpreting and Working with equilibrium Constants
- Heterogeneous equilibria
- Calculating Equilibrium Constants
- Le Chatelier's Principle
- Bronsted-Lowry Acids and bases
- The Autoionization of Water
- The pH Scale
- Strong Acids and Bases
- Weak Acids and Bases
- Relationship between Ka and Kb
- Lewis acids and Bases
- The Common-Ion Effect
- Solubility Equilibria
- Factors that Affect Solubility
• Chemical Thermodynamics
• Spontaneous Process
• Entropy and the Second Law of Thermodynamics
• Entropy Changes in Chemical Reactions
• Gibbs Free Energy
• Oxidation States and Oxidation-Reduction Reactions
• Balancing Oxidation-Reduction Reactions
• Free Energy and Redox Reactions
• Cell EMF Under Nonstandard Conditions

G. MAJOR COURSE REQUIREMENTS AND GRADING

Lecture Evaluation:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>100</td>
</tr>
<tr>
<td>Exam II</td>
<td>100</td>
</tr>
<tr>
<td>Exam III</td>
<td>100</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
</tr>
<tr>
<td>Connect Homework</td>
<td>100</td>
</tr>
<tr>
<td>Learning Community Project</td>
<td>50</td>
</tr>
<tr>
<td>Bonus points</td>
<td>up to 24 points</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>550</strong></td>
</tr>
</tbody>
</table>

Bonus points-Learn Smart that is a part of the CONNECT online homework will be counted as extra point. You can earn up to three points per chapter. These points could be added to the total class points.

Course Evaluation=75% Class Grade+25% Lab Grade

Final letter grading for the course will be as follows: A; 90%, B; 80%, C; 70%, D; 60%, F < 60%.

H. COURSE CONTENT/SCHEDULE
The schedule below is a preliminary outline of the semester. It is your responsibility to keep up with changes to this schedule. The reading and problems assignments that will be assigned in class should be completed before the next class meeting. Failure to stay
current on reading and problem assignments will greatly affect your ability to keep up during lecture and, therefore, will have an indirect affect on your grade in this course.

<table>
<thead>
<tr>
<th>Week of</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 19</td>
<td>Gen ChemI Review</td>
</tr>
<tr>
<td>January 26</td>
<td>Chapter 12</td>
</tr>
<tr>
<td>February 2</td>
<td>Chapter 13</td>
</tr>
<tr>
<td>February 9</td>
<td>Chapter 16</td>
</tr>
<tr>
<td><strong>February 16</strong></td>
<td><strong>Review and Exam I</strong></td>
</tr>
<tr>
<td>February 23</td>
<td>Chapter 17</td>
</tr>
<tr>
<td>March 2</td>
<td>Chapter 18</td>
</tr>
<tr>
<td>March 9</td>
<td>Chapter 19</td>
</tr>
<tr>
<td><strong>March 16</strong></td>
<td><strong>Spring Break</strong></td>
</tr>
<tr>
<td>March 23</td>
<td>Chapter 19 Continue</td>
</tr>
<tr>
<td><strong>March 30</strong></td>
<td><strong>Review and Exam II</strong></td>
</tr>
<tr>
<td>April 6</td>
<td>Chapter 20</td>
</tr>
<tr>
<td>April 13</td>
<td>Chapter 21</td>
</tr>
<tr>
<td>April 20</td>
<td>Chapter 21 continue</td>
</tr>
<tr>
<td><strong>April 27</strong></td>
<td><strong>Review and Exam III</strong></td>
</tr>
<tr>
<td>May 4</td>
<td>Review for Final exam</td>
</tr>
</tbody>
</table>

**Exam Schedule**
- Exam I February 19
- Exam II April 2
- Exam III April 30
- Final Exam: Thursday May 7, 8 am

**I. COURSE POLICIES**

**COMPUTER ACCESS:** Use of the computer is a major part of this course. This will include use of email, listserv, WWW, MS PowerPoint, and various other programs. Computers are available for student use in twelve computer labs around campus. Each student has a computer account set up by the university that is available from the first day of class. Call the computer help line at x2692 for more information.

**THERE ARE NO MAKE-UP Exams**

*Students with a university approved scheduled absence (athletics, military duty, etc.) MUST contact the lecture and lab instructor well in advance of a scheduled absence. Exams may be taken early in those specific cases. Students who do not arrange to take exams ahead of time will not be eligible for this special consideration. A written excuse from the university department involved or the Office of the Dean of Students is required.*
No student is admitted to the exam after the first exam-taker has left.

Use of Electronic Devices during Exam: Any use of an electronic device (PDA, Cell Phone, MP3 player, CD player, computer …) during an exam is strictly prohibited. Any use of such a device will be considered an attempt to cheat on the exam and will result in a grade of zero on the exam. In addition, more severe actions may also be considered. Calculators may be allowed on exams when needed, but only for mathematical operations. The use of programmable calculators to store or retrieve information during an exam will be considered an attempt to cheat on the exam. Also, if a calculator is discovered to have saved programs or information that could be used as an unfair advantage on the exam, this will be considered an attempt to cheat on the exam.

Tutoring and Test-Taking Strategies: To be successful in this course, and most others, you must develop good note-taking skills, organization skills, study habits, and test-taking strategies from the very beginning. Your instructor and TA’s are always available for help, but don’t wait until it’s too late! It is important that you are aware CASA provides free tutoring, and extra help. Take advantage of this service!. Should you have test anxiety, stress problems, or need help with study skills, the University Counseling Center also provides a free service.

Class Standards: The student is expected to be on time and attend every class. If absent, it is the responsibility of the student to obtain missed information from a classmate. Missed information includes not only lecture notes, but also any possible information regarding syllabus changes. The student is expected to arrive on time prepared to take notes.

Before you enter the lecture hall turn OFF your cellular phone! Beepers must also be turned off or put on silent mode. Electronic interruptions absolutely will NOT be tolerated!

Class Conduct: All students are expected to follow proper classroom behavior and treat the other students and the instructor with respect. If a student’s actions or behavior is deemed disruptive to the class by the instructor, the students will be asked to leave the class for that day.

No student is admitted to the exam after the first exam-taker has left.

J. COLLEGE AND UNIVERSITY POLICIES
Students with Disabilities: The Students With Disabilities Center is located in the Student Services Center (round building: 825-5816). Should you need special consideration for exams and/or class activities (special microphones, additional time for exams, enlarged exams, etc.), please contact this center. The university will provide assistance as needed, but you must contact the center to make arrangements. The instructor cannot make modifications without the center’s involvement. Should you have
mobility problems, please notify the instructor and TA so that they may seek assistance for you in the case of fire drills or emergencies.

**Academic Integrity and Honesty:** All students are expected to conform to college-level standards of ethics, academic integrity, and academic honesty. By enrolling in this course, you agree to be bound by the Regulations and Procedures published in the TAMU-CC STUDENT HANDBOOK. Group interactions, investigations, and studying are encouraged; however, duplicative work will be treated as cheating and will receive a grade of zero. Anything that is viewed as cheating on an exam will be given the most severe penalty possible, most likely an "F" for the course, but may include more severe punishments.

**GRADE APPEALS**
A student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is on the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details on the process, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, consult Texas A&M University-Corpus Christi University Procedure 13.02.99.C2.01 *Student Grade Appeal Procedures* (http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage (http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school or the College of Science and Engineering Dean’s Office.

**K. OTHER INFORMATION**
In choosing to take this course, you are agreeing to abide by the course rules, regulations, and standards. This includes agreeing to be respectful to your instructors and fellow students. Conduct that is disruptive or disrespectful will not be tolerated and is grounds for dismissal from the class. Should you have concerns or questions, you are to discuss them with the instructor as soon as possible. However, you are bound by these rules, regulations, and standards from the first day of the class throughout the duration of the course.