General Chemistry II (CHEM 1412)
Department of Department of Physical and Life Sciences

Spring 2016

A. COURSE INFORMATION

Course number/section: CHEM. 1412/891, 892, 893, 895
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: CS207
Office hours: TR 8-9:30 am, and 1:45-2:15, W 7:30-8:30 am
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. PREREQUISITES AND COREQUISITES

CHEM 1411

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES


Online Homework: You must have the code that accompanies the text to enroll in the online homework Connect and LearnSmart, and the code for the ALEKS online assessment and tutoring service (provided on Blackboard and in class). You can also buy the e-version of the text and the code online. All students are required to start Connect and ALEKS the first week of school. Regular assignments will be posted and students are required to complete the assignments on-time.

Supplies: Calculator and Periodic Table.
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate 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. INSTRUCTIONAL METHODS AND ACTIVITIES

This course will be performed as face to face and online homework and assignments will be assigned regularly

H. MAJOR COURSE REQUIREMENTS AND GRADING

Lecture Evaluation:

Exam I 100
Exam II 100
Exam III 100
Final Exam 100
Connect Homework 50
ALEKS 150
LearnSmart 50
Attendance                     50  
Laboratory                    250  
Learning Community             50  
Total                              1000  

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

I. 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 18</td>
<td>Gen ChemI Review</td>
</tr>
<tr>
<td>January 25</td>
<td>Chapter 12</td>
</tr>
<tr>
<td>February 1</td>
<td>Chapter 13</td>
</tr>
<tr>
<td>February 8</td>
<td>Chapter 16</td>
</tr>
<tr>
<td>February 15</td>
<td>Review and Exam I</td>
</tr>
<tr>
<td>February 22</td>
<td>Chapter 17</td>
</tr>
<tr>
<td>February 29</td>
<td>Chapter 18</td>
</tr>
<tr>
<td>March 7</td>
<td>Chapter 19</td>
</tr>
<tr>
<td>March 14</td>
<td>Spring Break</td>
</tr>
<tr>
<td>March 21</td>
<td>Chapter 19 Continue</td>
</tr>
<tr>
<td>March 28</td>
<td>Review and Exam II</td>
</tr>
<tr>
<td>April 4</td>
<td>Chapter 20</td>
</tr>
<tr>
<td>April 11</td>
<td>Chapter 21</td>
</tr>
<tr>
<td>April 18</td>
<td>Chapter 21 continue</td>
</tr>
<tr>
<td>April 25</td>
<td>Review and Exam III</td>
</tr>
<tr>
<td>May 2</td>
<td>Review for Final exam</td>
</tr>
</tbody>
</table>

Exam Schedule
Exam I February 18
Exam II April 1
Exam III April 28
Final Exam: Thursday May 8, 8 am
Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

Attendance/Tardiness
The student is expected to be on time and attend every class. 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 or take exam with appropriate supplies.

Late Work and Make-Up Exams
There will be no make-up exams for this class. If you miss one lecture exam, your final exam grade will be counted twice to replace the missed exam. If you miss more than one exam, you will receive a zero for the second missed exam. Certain university-related circumstances may warrant a makeup exam with prior notification, documentation, and arrangements. Do not show up late to an exam; no student will be admitted to the exam after the first exam-taker has left.

Extra Credit
There is no extra credit in this course. The grade is determined per paragraph H above.

Cell Phone Use
Before you enter the lecture hall turn OFF your cell phone. Cell phones are not permitted in class, not even as a calculator. Electronic interruptions will NOT be tolerated!

Laptop Use
Laptops are to be used only for lecture material. Use of laptops for non class items will not be permitted.

Electronic Devices During Exams
Any use of an electronic device (Cell Phone, MP3 player, CD player, computer, etc.) 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 0 on the exam although more severe actions may 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. Programs or operators that aid in mathematical operations such as a quadratic equation calculator may be used.
Food in Class
Generally, food in class is not permitted during class. It is permissible to bring appropriate snacks during the 2 1/2 hour final exam. Coffee, sodas, energy drinks are permissible.

Missed Exam
See Late Work and Make-Up Exams above.

Participation
Students are expected to attend all classes and be prepared to ask and/or answer questions. Pop quizzes may be given to assess mastery of material and as an indication of attending class.

Student Responsibility: It is the student’s responsibility to read and be aware of the contents of this syllabus and the course website on Blackboard. Announcements and changes are communicated in the classroom, Blackboard, and/or emails.

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, seminar leaders and TA’s are always available for help, but don’t wait until it’s too late! It is important that you are aware that the Center for Academic Student Achievement provides free tutoring, test-taking strategies, 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 (Driftwood Building: 825-2703) provides a free service.

K. COLLEGE AND UNIVERSITY POLICIES

• Academic Integrity (University)
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

• Classroom/Professional Behavior
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.
**Statement of Civility**

Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

**Deadline for Dropping a Course with a Grade of W (University)**

The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

**Grade Appeals (College of Science and Engineering)**

As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, 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 upon 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, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at 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, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

**Disability Services**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.
If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

http://disabilitieservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

L. **OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.