TEXAS A&M UNIVERSITY - CORPUS CHRISTI
Department of Physical and Environmental Sciences
Spring 2014
General Chemistry I
CHEM 1411 (4 credit hours)
Lecture Time: MWF 10:00-10:50 a.m.

Instructor information:
Instructor: Dr. Tim Causgrove
Office: 207 Center for Science
Telephone: 825-2399
E-mail: tim.causgrove@tamucc.edu
Office Hours: TBD

Course Description: This is the first semester of the foundation course in chemistry. Stoichiometry, chemical equilibria, atomic structure, chemical bonding, periodic properties, thermodynamics, chemical kinetics, and descriptive chemistry of the elements will be introduced. Laboratory involves development of basic skills. This course counts toward the natural science component of the University Core Curriculum. Either CHEM 1305 - Introductory Chemistry or CHEM 1411, but not both, may be applied towards the core requirement.

Objective: The overall objective is for the student to understand chemical formulas, structures. The secondary objectives of this course are to prepare the students for the second semester of General Chemistry and for Organic Chemistry, and involve the students in critical thinking exercises through course assignments.

Student Learning Outcomes: Following this course, the student should be able to:
- Describe the structure of atoms;
- Predict the general behavior of elements based on periodic rule;
- Determine Lewis structures of simple molecules;
- Differentiate between and describe ionic and covalent bonding;
- Perform basic stoichiometric calculations

Textbook (required): CHEM 1411, Texas A&M University-Corpus Christi ISBN: 9781259223969. CONNECT Student Section Code (comes with new textbook or can be purchased separately), required.

Supplies (required): Scientific calculator, lab coat, goggles

Course evaluation: Your grade in this course will be based on the items listed below.
- Regular Exams (3, 100 pts each) 300 pts
- Homework 100 pts
- Quizzes 100 pts
- Final Exam 100 pts
- Laboratory Assignments 200 pts
- Total 800 pts

Grades for the course will be assigned according to a ten-point scale: A for $\geq 720$ pts, B for 640-719 pts, C for 560-639 pts, D for 480-559 pts, and F for <480 pts. Rounding is at the discretion of the instructor.
Note:
For all information relating to the laboratory, including safety information, please see the laboratory syllabus. More laboratory information will be posted on Blackboard.

Missed Exam Policy:
**There will be no make-up exams.** If you miss an exam, the final exam will be counted twice to replace the missed exam. If you miss two exams, the second missed exam will be recorded as a zero. Students with a university approved absence (athletics, university field trips, etc.) MUST contact the instructor well in advance of the scheduled absence to arrange for an early exam. A written excuse from the university department involved is **required**.

Mid-term grades:
Mid-term grades will be calculated based on 75% weighting for exams taken at that point and 25% on quizzes. Lab grades will not be included.

Academic Integrity/Plagiarism:
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 score of zero for that assignment or test.

Tutoring and Test-taking Strategies:
To be successful in this course (and most others) you must have sufficient mathematical ability, develop good note-taking skills, organization skills, study habits, and test-taking strategies from the very beginning. Your instructor and TA’s are available for help. **Do not wait until just before an exam to ask questions.** Should you have test anxiety, stress problems, or need help with study skills, the University Counseling Center (825-2703) also provides a free service.

Disabilities Accommodations:
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 or visit Disability Services at (361) 825-5816 in Driftwood 101.

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.

Dropping a Class:
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. **Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form.** Just stopping attendance and participation **WILL NOT automatically result in your being dropped from the class.** April 11 is the last day to drop a class with an automatic grade of “W” this term.

Academic Advising:
The College of Science and Technology 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. The College’s Academic Advising Center is located in Faculty Center 178, and can be reached at 825-6094.

Grade Appeal Process:
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.

Class standards:
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 gender, ethnic/racial origin, religious background, age, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated. http://falcon.tamucc.edu/~students/JAffairs/ja_hndbk_academic_info.htm. Before you enter the lecture room, turn off your cell phone.

Use of Electronic Devices during Exam:
Any use of an electronic device (PDA, 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 score of zero 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.

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.

Lecture Schedule:
The schedule below is a preliminary outline of the semester. It is your responsibility to keep up with changes to this schedule. Failure to stay current on reading and homework assignments will greatly affect your ability to keep up during lecture and, therefore, will have an indirect effect as well as a direct effect on your grade in this course.

<table>
<thead>
<tr>
<th>Class Day</th>
<th>Chapter</th>
<th>Topic</th>
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<tbody>
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<td>1</td>
<td>Introduction to General Chemistry</td>
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<tr>
<td>1/24</td>
<td>2</td>
<td>Atomic theory</td>
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<tr>
<td>1/27</td>
<td>2</td>
<td>Ionic and covalent bonding</td>
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<tr>
<td>1/29</td>
<td>2</td>
<td>Binary ionic compounds</td>
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<tr>
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<td>Polyatomic ions and molar mass</td>
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<tr>
<td>2/3</td>
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<td>Bohr model of the hydrogen atom</td>
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<td>Quantum numbers</td>
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<td>Many-electron atoms and exclusion principle</td>
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<tr>
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<td>Construction of the periodic table</td>
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<td>Exam #1</td>
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<td>Trends in atomic properties</td>
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<td>Lewis symbols and the octet rule</td>
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<td>Ionic bonding</td>
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<td>Covalent bonding</td>
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<tr>
<td>3/3</td>
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<td>Electronegativity</td>
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<tr>
<td>3/5</td>
<td>3</td>
<td>Molar mass, molecular weight, formula weight</td>
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</table>
3/7  3  Balancing chemical equations
3/17  3  Stoichiometric calculations
3/19  3  Limiting reactants
3/21  -  Exam #2
3/24  3  Solutions and molarity
3/26  4  Precipitation reactions
3/28  4  Acid-base reactions
3/31  4  Oxidation numbers
4/2  4  Redox reactions
4/4  5  Physical states and pressure
4/7  5  Boyle’s Law, Charles’ Law, ideal gas law
4/9  5  Gas law problems
4/11  5  Kinetic-molecular theory
4/14  6  Heat, work and the first law
4/16  6  Enthalpy and reactions
4/18  -  Exam #3
4/21  6  Hess’s Law and standard enthalpies
4/23  10  Molecular Lewis structures
4/25  10  VSEPR theory
4/28  10  Molecular polarity
4/30  11  Valence bond theory
5/2  11  Molecular orbital theory
5/5  11  Schrödinger equation
5/12  -  Final Exam, 8:00 a.m. – 10:30 a.m.

Other Important Dates:
Wednesday, Jan. 29  Last Day to Late Register
Friday, Apr. 11  Last day to drop a class with a W grade and keep other classes
Mon.-Fri., Mar. 10-14  Spring Break
Monday, May 5  Last day to drop ALL classes with a W (withdraw from university)
Saturday, May 17  Spring Commencement