I. Course: Principles of Chemistry I

A. Catalog Description: An introductory course in chemistry emphasizing theoretical aspects and designed primarily for students intending to take one or more additional courses in chemistry. The major topics covered are elementary classical thermodynamics (entropy and free energy), homogeneous and heterogeneous equilibria, properties of gases, liquids, and solids, theories of solutions and solubility, electrochemistry, acid-base theory and applications, and chemical kinetics.

B. Co-requisites and Prerequisites:
   - CHEM 111/111L and Math 111 or equivalent are prerequisites
     Students enrolling in CHEM 112 are urged to take MATH 120. Students who earned a grade of “D” in CHEM 111 are encouraged to retake the course before taking CHEM 112
   - CHEM 112L is a co-requisite
     If you drop the lab you must drop the lecture. If you have passed the lab, you do NOT need to take the lab in order to retake the lecture; stop by the Chemistry Department office before or during the Drop/Add period to correct your schedule if this applies to you. The two courses (CHEM 112 and 112L) are graded independently of each other

II. Course Resources

A. Text
   - Chemistry: Atoms First, Any edition Authors Burdge and Overby
     We will cover Chapters 12 - 19

III. Important Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>01/08/19</td>
<td>First day of classes</td>
</tr>
<tr>
<td>01/29/19</td>
<td>Exam 1</td>
</tr>
<tr>
<td>02/19/19</td>
<td>Exam 2</td>
</tr>
<tr>
<td>02/23/19</td>
<td>Storm Makeup Day</td>
</tr>
<tr>
<td>03/08/19</td>
<td>Midterm Grades Available</td>
</tr>
<tr>
<td>03/12/19</td>
<td>Exam 3</td>
</tr>
<tr>
<td>03/18/19-03/22/19</td>
<td>Spring Break  No Class</td>
</tr>
<tr>
<td>03/25/19</td>
<td>Last day to withdraw with a grade of “W”</td>
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<tr>
<td>04/09/19</td>
<td>Test 4</td>
</tr>
<tr>
<td>04/23/19</td>
<td>Test 5</td>
</tr>
<tr>
<td>04/24/19</td>
<td>Storm Makeup Day/Reading Day</td>
</tr>
<tr>
<td>04/25/19</td>
<td>Final Exam 8 am</td>
</tr>
</tbody>
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IV. Course Assignments and Evaluation

A. Grades

Five Exams 50 %
ALEKS Prep 5 %
Quizzes 10 %
Problem Sets 15 %
Final Exam 20 %

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Letter Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>94-100 %</td>
<td>C+</td>
<td>78-79 %</td>
<td>D−</td>
<td>60-63%</td>
</tr>
<tr>
<td>A−</td>
<td>90-93 %</td>
<td>C</td>
<td>74-77%</td>
<td>F</td>
<td>&lt; 60%</td>
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<tr>
<td>B+</td>
<td>88-89 %</td>
<td>C−</td>
<td>70-73 %</td>
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<tr>
<td>B</td>
<td>84-87 %</td>
<td>D+</td>
<td>68-69 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B−</td>
<td>80-83 %</td>
<td>D</td>
<td>64-67 %</td>
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B. Exams

Five tests are scheduled during the semester with the dates listed above. We will make every attempt to honor that schedule but due to circumstances beyond our control (ice storm, rogue hurricane) it may be necessary to move the test date forward in time. (Exam dates will not occur any sooner than listed above). Any changes to the testing schedule will be discussed in class. **No make up exams will be given.** If you are a student-athlete or are away from class due to college related business an accommodation will be made as long as you make arrangements BEFORE your absence.

C. ALEKS Preparatory Assignment

This assignment must be completed no later than Tuesday January 15th at 11 pm. Details about how to access the assignment have been sent to your college email address by Dr. Riggs-Gelasco. The assignment is intended to review material from Chem 111 that is essential for understanding the material in the current course.

D. Quizzes

Unannounced quizzes will be given throughout the semester. Scores for the top 70% of these will be used in the calculation of your final grade. **No makeup quizzes will be given.**

E. Problem Sets

Problem sets will be assigned and will generally be due one week after assigned and will be collected at the beginning of the lecture of the day assigned. **No late problem sets will be accepted.**

F. Final Exam

A 110 minute comprehensive and standardized ACS final exam will be administered on Thursday, April 27th beginning at 8 am. The multiple choice final exam is cumulative over the material covered during the semester. Requests for an alternative final exam time must be processed through the Office of Undergraduate Studies no later than 5 pm on the last day of class.
V. Student Learning Outcomes

- Describe colligative properties and give specific examples
- Explain the concept of equilibrium and apply it to chemical reactions including acid/base chemistry, precipitation reactions, and oxidation-reduction reactions
- Define entropy and Gibbs energy. Apply these with respect to chemical reactions and evaluate how these affect the spontaneity of a chemical or physical process
- Apply a kinetic analysis to chemical and physical processes (including rates, mechanisms, and activation energy)
- Apply the principle of thermodynamics and equilibrium to electrochemistry

General Education Learning Outcomes  The sequence CHEM 111/112 and associated labs satisfy the 8 hour natural science requirement of the College.

1. Students apply physical/natural principles to analyze and solve problems
2. Students explain how science impacts society

*The General Education learning outcomes will be assessed in the second course of the natural science sequence Chem 112/112L

VI. Course Policy

A. Attendance
   Class attendance is to your benefit. With extremely small exception, performance in the course is directly proportional to attendance. Students are responsible for all information presented in class whether they are present or not. Students should obtain notes from a classmate, read the associated material in the text, and then come ask me questions.
   Please note that an Absence Memorandum from the Office of Undergraduate Studies only verifies your documentation for missing a class. It does not entitle you to make up or be excused from any work, assignment or test.

B. Responsibilities
   You are accountable for all material covered or assigned in class. You should expect to spend a minimum of 3 hours of study for every hour spent in lecture. The instructor is here to present and explain the material but the burden of learning is upon you, the student.

C. Academic Integrity
   One of the core values of the College is academic integrity. This course is conducted under the Honor Code (http://www.cofc.edu/StudentAffairs/general_info/honor_system/index.html) of the College of Charleston. Students at the College are bound by honor and by their acceptance of admission to the College to abide by the Code and to report violations. Faculty members are required to report violations of the Honor Code or Code of Conduct to the Office of Student Affairs. Conviction of an Honor Code violation in this class will result in the grade of "F" for the course. Please consult the department's Policy on Scientific Integrity (http://www.cofc.edu/~chem/advising/integrity.html).
D. Email

Email is considered an official method for communication at the College of Charleston. College of Charleston email accounts are automatically assigned to all students upon acceptance at the College. If a student wishes to have email redirected from their official College issued account to another email address (e.g. @aol.com, @hotmail.com, @yahoo.com, or any other server other than the official @edisto.cofc.edu), they may do so, but at their own risk. Having email redirected does not absolve the student from the responsibilities associated with official communication sent to his or her College account. The College is not responsible for the handling of email by outside vendors or unofficial servers. A link to instructions on how to forward Edisto email can be found by clicking on Web Mail from the CofC home page. Students are expected to check their College of Charleston official email on a frequent and consistent basis in order to remain informed of College related communications. Checking email on a daily basis is recommended. Students have the responsibility to recognize that certain communications may be time-critical. “I didn’t check my email”, error in forwarding email, or email returned to the College with “Mailbox Full” or “User Unknown” are not acceptable excuses for missing official College communications via email.

E. SNAP (Students Needing Access Parity)

If you have a letter from the SNAP office and need academic adjustments or accommodations because of a disability, please contact me in a timely manner. If you need accommodations and do not have a SNAP letter, please contact the SNAP office (http://disabilityservices.cofc.edu/).