Syllabus - Fall 2014

Department: Chemistry and Biochemistry
Course Number/Section: CHEM 1311-01
Course Title: General Chemistry I
Professor: Dr. Kenneth Dorris
Office 121H Chm
880-8267
kenneth.dorris@lamar.edu
Office hours: MWF 9-10, Thur 9:30-11
{Other times by appointment}

Course Description

Mathematics-based review of chemical laws and theory for science, engineering and preprofessional majors.

Prerequisites

{High school chemistry or CHEM 1375 with a grade of “C” or better} and
{MATH 1314 or above with a grade of “C” or better} or an MRS of >= 700.

Required/Optional Texts and/or Course Materials

Chemistry, “The Central Science” by Brown, et. al. (Prentice Hall)

Course Outcomes

Learning Outcomes:

Upon successful completion of this course, students will:
1. Define the fundamental properties of matter.
2. Classify matter, compounds, and chemical reactions.
3. Determine the basic nuclear and electronic structure of atoms.
4. Identify trends in chemical and physical properties of the elements using the Periodic Table.
5. Describe the bonding in and the shape of simple molecules and ions.
7. Write chemical formulas.
8. Write and balance equations.
9. Use the rules of nomenclature to name chemical compounds.
10. Define the types and characteristics of chemical reactions.
11. Determine the role of energy in physical changes and chemical reactions.
12. Convert units of measure and demonstrate dimensional analysis skills.

**Core Curriculum Objectives:**

- *Life and Physical Sciences (critical thinking, communication, empirical and quantitative skills, teamwork)*

1. **Scientific Observations, Laws, and Theories**

   Students will prepare an essay explaining the relationship of scientific observations, laws, and theories using a course content relevant example suggested and agreed to by the instructors of all sections of the course. Faculty will use a rubric to assess scientific understanding, written communication skills, and critical thinking skills.

2. **Chemical Calculations and Meanings**

   Students will document the solution of a course content relevant chemical calculation problem suggested and agreed to by the instructors of all sections of the course. Students will interpret the meaning of the results obtained. Faculty will use a rubric to assess scientific understanding, critical thinking skills and empirical and quantitative skills.

3. **Chemical Use - Benefits and Hazards**

   Students will prepare a group presentation explaining the relative benefits and hazards of a contemporary, course relevant issue suggested and agreed to by the instructors of all sections of the course. Faculty will use a rubric to assess scientific understanding, understanding of the interactions of natural phenomena, communication skills, and teamwork.

**Classroom Management Policies**

*Disability accommodation:* It is the policy of Lamar University to accommodate students with disabilities, pursuant to federal and state law, and the University’s commitment to equal educational opportunities. It is the student’s responsibility to register with Lamar’s Disability Support Services (880-8347), In Communication Bldg. 105, as quickly as possible. Any student who feels s/he may need an accommodation based on the impact of a disability should contact the professor directly during the first week of the course.

*Academic Honesty:* Engaging in academic dishonesty as defined and described under Academic Affairs in the student handbook will result in immediate suspension from class and a course grade of F.
Attendance: Regular class attendance is important to the attainment of the educational objectives of the University. Attendance will be checked daily (see federal policies).

Federal Policies
Title IV Policy
Each semester, every faculty member will be required to check attendance records, and then indicate any student who is no longer attending the class. The checked rolls will be signed by the faculty member and returned to the Registrar’s office.

FERPA
(Family Educational Rights Privacy Act of 1972): Due to the privacy laws regarding student grades in FERPA a student's grades cannot be discussed with anyone other than the student - no one else including parents and/or friends. This includes emails, voice mails, over the phone, answering services, etc. Therefore, the student must appear in person to insure identity and can only get their grade.

Grading and Evaluation

<table>
<thead>
<tr>
<th>Exams:</th>
<th>Number</th>
<th>Percentage</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20%</td>
<td>as assigned</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>20%</td>
<td>as assigned</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>20%</td>
<td>as assigned</td>
<td></td>
</tr>
<tr>
<td>4 Final</td>
<td>20%</td>
<td>See Official Final Exam Schedule</td>
<td></td>
</tr>
<tr>
<td>Class Activities</td>
<td>20%</td>
<td>as assigned</td>
<td></td>
</tr>
</tbody>
</table>

Only calculators are permitted during exams. All other electronic devices such as cell phones, I pods, computers, etc. are not allowed.

MAKE-UP EXAM = FINAL EXAM

The FINAL EXAM will be increased to compensate for the missed exam. (or If higher, the Final Exam will replace the lowest regular exam grade)

THERE ARE NO OTHER MAKE-UP EXAMS

Grade: Based on Exams & Class Assignments

- A ..........90 - 100%
- B ..........80 - 89%
- C ..........70 - 79%
- D ..........60 - 69%
- F ..........0 - 59%

Course Outline
Chap 1: Introduction and Appendix A: Mathematical Operations
Chap 2: Atoms, Molecules, and Ions
Chap 3: Stoichiometry
Chap 4: Aqueous Reactions and Solution Stoichiometry
Chap 5: Thermochemistry
Chap 6: Electronic Structure of Atoms
Chap 7: Periodic Properties of the Elements
Chap 8: Basic Concepts of Chemical Bonding
Chap 9: Molecular Geometry and Bonding Theories