Chemistry 111-02

Instructor:  Dr. Gamil A. Guirgis  Phone:   (843) 953-5943  
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Office Hours:  Tuesday and Wednesday, 08:00-10:00am  
Or by appointment

Text:  Julia Burdge and Jason Overby, "Atoms First". 2nd Edition

Class:  Schedule:  Tuesday and Thursday: 1:40am-2:55pm, SSMB room 127

Class Objectives:  This class is an introductory course in chemistry emphasizing theoretical aspects and is designed primarily for students who intend to take additional courses in chemistry and the sciences. The main foci of the course are to understand fundamental physical and chemical properties of matter, to predict the products of reactions or to give the starting materials needed to produce compounds, and to apply quantitative methods in solving chemical properties. The following points summarize these objectives,

1. Know the definition of chemistry and the scientific method  
2. Express common mathematical techniques in the solving of chemistry problems  
3. Understand the role of the atom in chemistry  
4. Distinguish, classify, and explain the properties of compounds  
5. Recognize and explain the fundamental nature of chemical reactivity  
6. Differentiate and describe the principles of the phases of matter

Learning Outcome
1. Explain the definition of chemistry and employ scientific method  
2. Express common mathematical techniques in the solving of chemistry problems  
3. Understand the role of the atom in chemistry  
4. Distinguish, classify, and explain the properties of compounds  
5. Recognize and explain the fundamental nature of chemical reactivity  
6. Differentiate and describe the principles of the phases of matter

Lecture topics
1. Chemistry: The science of change  
2. Atoms and the periodic Table.  
3. Quantum theory and the electronic structure of atoms.  
4. Periodic trends of the elements.  
5. Ionic and covalent compounds.  
6. Representing Molecules.  
7. Molecular geometry and bonding theories.  
8. Chemical reactions.  
10. Energy changes in chemical reactions.  
12. Intermolecular forces and the physical properties of liquid and solids.

Class General Objectives:  While there are specific technical objectives for this class, there are also additional goals that need to be addressed. This course is part of a larger educational experience, and as such we will attempt to align the course with the overall vision for the college:
“The College of Charleston community is committed to becoming a nationally preeminent Public Liberal Arts and Sciences University for the twenty-first century.”

“The primary focus of the College in its fourth century will be the development of the student as a whole person through adherence to the principles of the liberal arts and sciences. The goals of strengthening student learning and assuring a well-prepared, diverse, and engaged student body will remain paramount.”

“In order to reinforce the linkage between habits of the mind and habits of the heart, students will be fully engaged in an active learning environment where they learn by thinking critically and by applying theories and skills to complex issues.”

Excerpts from the Fourth Century initiative, approved by the College of Charleston Board of Trustees, 8 April 2003

Everyone in this class will leave Chemistry 111 with a firm grasp of the material that is the core of this course, the skills and knowledge to attack chemistry at higher levels, and a desire to learn more chemistry by taking the next levels of chemistry. Chemistry builds on itself as the course progresses and it is very important to keep up with the material. Each step is important and relatively easy to learn. When you learn the pieces, as the course progresses you can master chemistry in small, connected parts that help you see the beauty of the behavior of matter.

In order to succeed active participation in learning is the key, so prepare for class every day. The table of Homework Assignments is designed to let you know what topics will be discussed each day and where that material is in the text book. Read ahead to be ready for the class and discussions. You will be asked to participate in the discussions each class. You are always encouraged to ask questions and contribute ideas to class.

Honor Code: This course is conducted under the Honor Code of the College of Charleston. The Honor Code specifically forbids lying, cheating, attempted cheating, stealing, attempted stealing and plagiarism. 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 departments Policy on Scientific Integrity.

Attendance Policy: Attendance is expected at all classes. Students are responsible for all information presented in class whether they are present or not. It is imperative that you attend class and also to arrive promptly. If you arrive late for a quiz, test, or the final exam, instructions will not be repeated nor will you receive additional time to complete the assignment. Any work missed will be given a zero and averaged into the final grade. To be eligible for any deviation from the grading policy a student must have missed no more than two classes.

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, quiz, or test. You should obtain notes from a classmate, read the associated material in the text, and then come ask me questions.

Responsibilities: It is expected that for every hour spent in lecture that you will spend a minimum of 3 hours of study. The instructor is here to explain the material and help you to the best of his time and ability. However, the burden of learning is upon you, the student.

Examination in General Chemistry, ACS Press” is kept on permanent library reserve.

In addition to the text, a booklet entitled “Preparing for your ACS Examination in General Chemistry”, Lucy Eubanks, American Chemical Society.
Grading

All grading will be assigned on a points scale:

| Tests - 4 total tests, one test with lowest grade will be dropped | 20 pt for 3 tests | 60 |
| Final Exam - ACS standardized | 20 pt | 20 |
| Learning Smart, online and class quizzes. 5 pts. for Learn Smart Prep assignment | 15 pts. Divided equally 5 pts. | 15 5 |
| Total | | 100 |

Grading Scale:

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<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>A</td>
<td>91.0-100.0</td>
<td>C</td>
<td>73.0-74.9</td>
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<tr>
<td>A-</td>
<td>89.0-90.9</td>
<td>C-</td>
<td>71.0-72.9</td>
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<tr>
<td>B+</td>
<td>85.0-88.9</td>
<td>D+</td>
<td>69.0-70.9</td>
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<tr>
<td>B</td>
<td>81.0-84.9</td>
<td>D</td>
<td>67.0-68.9</td>
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<tr>
<td>B-</td>
<td>78.0-80.9</td>
<td>D-</td>
<td>65.0-66.9</td>
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<tr>
<td>C+</td>
<td>75.0-77.9</td>
<td>F</td>
<td>Below 65.0</td>
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Tests: There will be five tests over the material from the lectures and the text. Tests may be taken ahead of time if prior approval is obtained. Each test will be worth a potential 16.0 points towards the final grade. There are no makeup tests. Your lowest test grade will be dropped.

Final: The Final Exam is a cumulative 120 minute multiple choice American Chemical Society Standardized test. The exam was written by a board of chemistry professors who are members of the American Chemical Society. Absence from the final exam will result in the grade of "X" being assigned which converts to an "F" within 48 hours unless an excused absence has been granted by the dean in the Office of Undergraduate Studies. Requests for an alternate final exam time must be processed through the Office of Undergraduate Studies no later than 5 p.m. on the last day of class. If you arrive late to the final examination you will be required to have an admission slip from the Dean of Undergraduate Studies. The exam will be given during the departmental exam time and the room to be announced during the last week of classes.

SNAP Students: Any student eligible for and in need of academic adjustments or accommodations because of a disability is requested to speak with the professor during the first two weeks of classes.

E-mail: E-mail is considered an official method for communication at the College of Charleston. Official College of Charleston e-mail accounts are automatically assigned to all students upon acceptance at the
College. If a student wishes to have e-mail redirected from their official College issued account to another e-mail address, they may do so, but at their own risk. Having e-mail redirected does not absolve the student from the responsibilities associated with official communication sent to his or her College account. Students are expected to check their College of Charleston official e-mail on a frequent and consistent basis in order to remain informed of College related communications. Checking e-mail on a daily basis is recommended.

**Homework:**
The key to success in this class is doing chemistry problems again and again. If you are not working out problems every single day, you will not do well in this class. The tests will be very similar to problems from the homework.
You will be assigned certain sections as reading material and problems from the end of the chapters that are representative of the material you should know. This homework will not be graded but you will be responsible for these materials on quizzes and tests. You also will be assigned homework via learning smart and quizzes (on line and in class) to be graded. It is up to you to get help if you need it.

*It is your responsibility to learn how to work the problems!*

I am very willing to help you but (you must help yourself first), but for the most part, learning chemistry is a lonely, time-consuming and difficult lesson in self-discipline.

**Quizzes and Learning Smart:**
There will be frequent quizzes (on line and in class) based on material in the previous lectures. The quizzes will be similar to the sample problems we do in class and the other assigned material. There are no makeup quizzes. If you walk in late, expect to miss the quiz.

**Graded Homework:**
I may request that you turn in certain homework problems or I may give you an additional assignment to turn in. You will get advanced notice of homework expectations. Late homework will be penalized.

**Attendance:**
Do not miss class. If you choose to miss class, it is your responsibility to find a classmate who will share their notes with you. You will receive a zero for any missed quizzes, exams or homework. There are NO make-up quizzes or exams.

**Tests:**
There is no determined date for the tests but you will be informed about the test one week in advance once the material for the tests is covered in class.

- Test # 1, will cover chapters 1, 2, and 3.
- Test # 2, will cover chapters 4, 5, and 6.
- Test # 3, will cover chapters 7, 8, and 9.
- Test # 4, will cover chapters 10, 11, and 12.

**Final Exam, Tuesday, April 26 same place of the class at 4:00-7:00pm.**

*There are NO makeup exams.* If you have an excused absence documented by the Dean of Undergraduate Studies, the straight average score from the remaining exams will be substituted for the missed exam. You may not miss more than one exam. If you are going to miss an exam, notify me ahead of time by phone message (my office or the chemistry office) or by e-mail.

Your score on an exam will NOT be proportional to the number of hours you "cram" the night before. Your score will almost certainly be proportional to the number of hours you spend per day working problems and studying the material.