CHEMISTRY 100 *Dr. Parker* *Fall 2005*

If I have seen farther, it is by

standing on the shoulders of giants.

-- Sir Isaac Newton

Oxford College and Liberal Arts. Oxford College is dedicated to a liberal arts education, and science, including chemistry, is an integral part of the liberal arts. In this course, you will have an opportunity to master these liberal arts skills:

- Reasoning:

1. Problem-Solving
2. Critical Thinking
3. Logic
4. Calculation/Computation
5. Investigation
6. Analysis of data

- Language

1. Listening and interpreting
2. Reading
3. Writing

- Aesthetics

1. Observing
2. Seeing relationships among form, pattern, harmony, and shape

- Imagination

1. Prediction
2. Developing scientific insight (hypotheses)

Learning Goals. The primary learning goals for this class are for you to:

- Utilize critical thought and reasoning to understand chemical behavior at the microscopic and macroscopic levels.
- From your knowledge of chemistry and chemical systems, be able to develop solutions to problems which you have not encountered before.

Content goals. You will be expected to master these areas of chemistry:

- The scientific method
- Conversion between different measuring systems
- Significant figures
- Basic concepts of matter and energy
- The structure of the atom
- The periodic table
- Electron configurations
- Nomenclature
- Shapes of molecules
- Polarity of molecules
- Molecular mass and moles
- Stoichiometry
- Reactions in aqueous solution
- Oxidation-reduction
- Gases
- Solutions
- Concentration, especially molarity
- Colligative properties
- Kinetics
- Equilibrium
- Acids and bases
- pH
- Titrations
- Buffers
- Nuclear chemistry

Materials. "Introduction to General, Organic, and Biochemistry," 7th ed., by Bettelheim, Brown, and March; optional (strongly recommended) study guide and solutions manual

Scientific calculator. You will find it impossible to work problems without a scientific calculator. Calculators which can download and/or store information, which can automatically solve equations, or which can be programmed, are not allowed.

Safety glasses and carbon-copy notebook for lab (available in book store).

Attendance. All students are expected to attend all lecture and laboratory sessions. However, it is recognized that emergencies may arise which may necessitate absences from class. You should notify me if an absence is due to illness or other emergency. You are responsible for all material covered in lecture if absent.

You are allowed 3 absences in lecture and NO ABSENCES in lab.

If you exceed the 3 absence limit in lecture for whatever reason, you will lose 1 point for the next absence (number 4), 2 points for the next absence (number 5), and 3 points for each additional absence (numbers 6 and up). These points will be deducted from the final course average. Note that there are no "excused" absences.

Make-up exams are not given, regardless of the reason an exam was missed. If you miss an exam and present me with an acceptable excuse, the grade on the final exam will count in place of the missed exam grade. You must notify me by the day and time of the exam that you will not be present and you must give me the reason for the absence. If the excuse is not considered acceptable, the exam grade will be a zero. It is up to me as the instructor to make the determination as to whether an excuse is acceptable. In general, illness or an emergency situation are the only acceptable excuses for missing an exam. Missing an exam also counts as an absence in the course.

Being late to class is rude and distracting. Therefore, 3 tardies will be considered equal to 1 absence. If you come in more than 15 minutes tardy, you will be counted absent. If you come in late, it is your responsibility to see me immediately after class to ensure that you are marked tardy and not absent. No adjustments will be made at a later time. If you are continuously tardy, you may be excluded from further classroom attendance. When you are in class, you must be attentive and not disturb others. Leaving a class early counts as an absence, as does sleeping through a class or being generally inattentive.

Cell phones and pagers are not allowed in class or lab. Should you bring one and it goes off, or should you use it to call someone, you will leave the class. Food and drink are not allowed in class or lab, but beverages in spill-proof containers may be brought into class.

Problems. For each chapter, there are problems which you should work to help you in understanding the material. These problems are the ones in the chapter and the odd-numbered ones at the end of the chapter. These problems are for your benefit only; they will not be taken up or graded. Since chemistry is a problem-oriented course, and the tests will include problems, it is essential that you become proficient in working problems. You should work problems as you encounter the material. You should also attempt each problem before seeking help from the book, your notes, or the answer. It is not sufficient to be able to follow how a problem is worked; on a test, you will have to work a problem all the way through, and the only way you will be able to do this is if you have worked numerous practice problems.

Group Assignments. Problem sets, which will be collected and graded, will be assigned on each chapter from the even-numbered problems at the end (sometimes along with

additional problems not in the book). You will work on these assignments in groups of four students. Each group will hand in one copy of their solutions that has been signed by all group members, indicating that it is the work of all four group members. The work must be legible and clear. You must write on one side of the paper and staple each problem set. These problem sets are due at 9:35 AM on the due date. Late problem sets will not be accepted. Solutions to these problem sets will be posted on our LearnLink conference after the problem sets have been handed in. It is your responsibility to ensure that you understand the posted solutions to all assigned problems. Since you are being graded on these problem sets, the Honor Code applies – you may not give or receive help from anyone not in your group; you may not use any material other than your textbook, your study guide, and your notes; and you may not use the Internet in any way.

Tests. There will be 4 exams, given in class. Each exam will last 55 minutes. For an exam, you may bring only a calculator and pencils; any other material will be given out with the exam. Make sure your calculator is one which is allowed (see Materials, above), that it is working, and that you know how to use it. Calculators will not be loaned or shared. You must take the exam during your regular class time. If you come in late, you will not be given extra time to finish the exam. The honor code applies to all exams.

Oxford College has adopted as part of its Mission Statement that its curriculum is designed to teach students to "embrace responsible citizenship." In addition, as part of its Purpose Statement, the College lists "to augment the student's ... intellectual awareness of the world". To encourage you to become aware of the world around you, most exams will have a bonus question on "current events."

Honor Code. It is assumed that all Oxford College students will adhere to the highest standards of academic honesty and will uphold the Oxford College Honor Code. Accordingly, I do not normally proctor exams.

On exams, you may not use any material not distributed with the exam itself except for a calculator and pencils/pens. Any other material you bring into the room must be left at the front of the room, including a cell phone. During an examination, you may not give or receive assistance. Since absences and tardies can affect your grade, giving false information regarding absences or tardies is a violation of the Honor Code. Note also that the Oxford College Honor Code expects students to report any violations of the Code they know of. See the Honor Code Pledge handout for more information.

Exam schedule.

Exam I Friday, Sept. 23
Exam II Friday, Oct. 14
Exam III Friday, Nov. 11
Exam IV Friday, Dec. 9

Exams may be moved forwards or backwards as necessary; this will be announced in class and on the class LearnLink conference. The sections covered for each exam will be announced in class.

Final Exam. There will be a final exam, covering the semester's material. This will be given during the regularly scheduled final exam period.

Schedule. We will cover chapters 1 – 9. If you take Chemistry 120 after this class, you will continue with the remaining chapters.

Preparation for class. Refer to the "Student Survivor's Guide" for information. You are also expected to regularly read the class and the lab LearnLink conferences.

Review sessions. A review session will be held before each exam; the date and time will be announced in class. If held outside of class, these sessions are optional and voluntary; no new material will be covered. If held in class, attendance will count as it would for a regular class session, since the review normally will not take the entire class period.

Laboratory. Your laboratory instructor will explain the lab procedures to you. Note under Grading, below, how your lab grade affects your course grade.

Office Hours. My office is Pierce 217. I am usually in my office and available from 9-5 every day. Exceptions are around lunch time (11:30-1:00) and during class and labs.

Grading. The problem sets will count the same as an additional grade, and the final will count as two exam grades, giving a total of 7 grades (4 exams + problem sets + final counting twice). The lowest of the 6 exam grades will be dropped (the problem set grade will NOT be dropped). This average will constitute the lecture portion of your course grade.

Your course grade equals 80% times your lecture grade and 20% times your lab grade.

Grading scale. Grades are normally assigned as follows, with no rounding:

93 - 100 A	77 - 79 C+
90 - 92 A-	73 - 76 C
87 - 89 B+	70 - 72 C-
83 - 86 B	67 - 69 D+
80 - 82 B-	60 - 66 D
	below 60 F

Your exam average AND your lab average must both be passing or you will receive an grade of F in the course regardless of your final numerical average. Grades are assigned based on your performance in the course (exams, lab, attendance) and are not open for discussion after being assigned.