

**Instructor** Dr. Nathan J. Malmberg

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**Textbook** *Chemistry in Context: Applying Chemistry to Society, Sixth Edition* by Eubanks, Middlecamp, Heltzel and Keller ISBN: 978-0-07-304876-5

**Also Required** *Electronic Playground* Elenco Electronics, Inc. and a nonprogrammable (nongraphing) scientific calculator.

**Course Meets** MTWThF at 10:15 AM–12:15 PM in Wood 102

**Lab Meets** MTWThF at 1:00 PM–3:00 PM in Wood 115

**Description** The purpose of this course will be to describe in chemical terms some of the current issues society faces. Understanding the issues from a scientific perspective will allow us to clear up many of the misunderstandings surrounding these issues, but will also allow us to address some of the unresolved questions still surrounding these issues. Topics include air pollution, the ozone layer, global warming, water supplies, and energy.

**Further Information** about disabilities, inclement weather, incomplete grades, etc. can be found in the university-wide syllabus attachment located at [http://www.okbu.edu/academics/forms/Syllabus\\_Attachment\\_Fall08.pdf](http://www.okbu.edu/academics/forms/Syllabus_Attachment_Fall08.pdf). The dates in this attachment will obviously not apply to this course, but the policies will be the same, for the most part.

**Academic Dishonesty** will not be tolerated. Offenses will result in a zero for the assignment, and may result in disciplinary action by the University. Academic dishonesty may include, but is not limited to:

- Copying from another student’s exam or quiz.
- Fabricating results or observations in lab.
- Insufficient rewording of material derived from another source.

**Integration of Faith and Learning** Our divinely appointed roles as stewards of the natural world and as ministers to others often requires us to make choices in situations where these roles are in conflict. We will discuss some of these conflicts and the ramifications of making certain decisions. As with all decisions, the more we know about these questions, the better equipped we are to answer them.

**Attendance** Attendance will be taken at the beginning of each class period. Showing up to class on time contributes positively toward your total for the course, while showing up late or not at all will contribute negatively toward your total for the course.

**Grades** The value of each assignment for the semester is listed below:

Midterm Exams	30 %
Final Exam	20 %
Quizzes	10 %
Lab	25 %
Attendance	15 %

**Grading Scale** Grades will be assigned according to the following scale: 90-100%–A, 80-89%–B, 70-79%–C, 60-69%–D, below 60%–F. These scales may be adjusted downward, but don't count on it.

**Exams** Midterm exams will be held during normal class periods on Fridays on *January 9, January 16 and January 23*. Each exam will be worth 10 % of your final grade, and will test the material covered in lecture from each section of the course. The final exam will be held on *Thursday, January 29*, will be worth 20 % of your final grade, and will cover material from the entire semester (comprehensive).

**Quizzes** There will be a quiz every Wednesday testing your comprehension of the material covered since the last exam. Each quiz will be worth 2.5 % of your final grade in the course.

**Late Policy** Exams and quizzes must be completed on the days on which they are given. Failure to take an exam or quiz in the allotted time will result in a zero for that exam or quiz. Exceptions will be made for exams or quizzes which are missed because of:

- University-sponsored activities. You must make alternative arrangements with me at least a week in advance.
- Documented medical absence.
- Death in the family.

#### Tentative Lecture Schedule J-Term 2009

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1/5–1/9	Intro, 1.1–1.5	1.6–1.14	Quiz, 2.1–2.7	2.8–2.12, 3.1–3.4	Exam I
1/12–1/16	3.5–3.12	4.1–4.8	Quiz, 4.9–4.12, 5.1–5.3	5.4–5.12	Exam II
1/19–1/23	5.13–5.15, 6.1–6.4	6.5–6.15	Quiz, 7.1–7.7	7.8–7.12, 8.1–8.3	Exam III
1/26–1/29	8.4–8.10	9.1–9.8	Review	Final Exam	

**Topics by Chapter** The following topics will be covered in this course:

- Chap. 1** Composition of Air, Risk Assessment, Classification of Matter, Atoms and Molecules, Compound Names and Formulas, Chemical Changes, Air Pollutants
- Chap. 2** Ozone, Atomic Structure and Periodicity, Molecule Models, Light and Matter, Ozone Depletion, CFCs
- Chap. 3** Evidence of Global Warming, Molecular Shape, Molecular Vibrations, Carbon Cycle, Mass, Molecules and Moles, Greenhouse Gases
- Chap. 4** Energy, Work, Heat, Measuring Energy Changes, Energy Changes and Molecules, Fuel Sources, Refining
- Chap. 5** Drinking Water Sources, Water as Solvent, Solution Concentrations, Properties of Water, Hydrogen Bonding, Ionic Compounds and Solutions, Covalent Compounds and Solutions, Water Legislation and Other Options
- Chap. 6** Acids and Bases, Neutralization, pH, Acid Rain, Sources of Acids, Acid Deposition, Politics of Acid Rain
- Chap. 7** Nuclear Fission, Nuclear Reactors and Electricity, Radioactivity, Nuclear Waste, Risks and Benefits of Nuclear Power
- Chap. 8** Battery Basics, Types of Batteries, Fuel Cells, Hydrogen Economy, Photovoltaics
- Chap. 9** Polymers and Monomers, Types of Plastics, Forming Plastics, Polyamides, Recycling