NATS 1211
Science of Contemporary Issues
Autumn 2002

Instructor: Dr. Lawrence J. Berliner
Olin, Room 202
Phone 303-871-2436

T.A.'S: Eydiejo Wandschneider, Nicole Bous, Richard Kristinsson
Mailboxes: Chemistry Department Office: 0lin202, x2435

Assignments:
Periodically, homework problems related to the lecture or lab material will be assigned. These problems may require some additional reading (Library) on your part. You are responsible for completing the assignments and turning in on time. No late assignments will be accepted and will be given a zero grade. Your comprehension will be tested via the exams.

Exams:
a) There will be two one-hour exams and a final exam. There will not be any make-up exams under any circumstances and your final grade for the course will be determined by your performance in all the three exams. If your score in the final exam is higher than any of the scores in the one-hour exams, the final exam score will replace the lowest score.
b) If anyone, for any reason, had to take the exam out side of the scheduled time, arrangements need to be made with the instructor at least one week advance. The instructor reserves the right to deny or accept the request and also to alter the exam. Often these non-scheduled exams will be much harder than the regularly scheduled exams.
c) All exams will be comprehensive, encompassing lecture materials, assignments, and laboratory material.

Grading:	The break down of the course grades is as follows:
Homework	100pts
MQ Exam 1	200 pts
MQ Exam 2	200 pts
Final Exam	300 pts
Lab.	200 pts
TOTAL	1000 pts

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Lab Location/Times:

Section 1	Mon. Afternoon	2:00-5:00 PM BE15
Section 2	Tues. Afternoon	2:00-5:00 PM BE15
Section 3	Wed. Afternoon	2:00-5:00 PM BE15
Section 4	Tues. Evening	7:00-10:00 PM BE 15
Section 5	Wed. Evening	7:00-10:00 PM BE 15

You are required to do EVERY lab. You must attend the lab section in which you are registered.

There are NO MAKE-UP LABS. If you miss your lab for any reason, you must make it up in the same week the lab is offered.

- If you cannot make your scheduled lab time you MUST get permission from both your and the alternate Teaching Assistant before changing.
- All lab assignments must be finished and handed in to the Teaching Assistant at the end of each laboratory period.
- Your comprehension of the material covered in the labs will be tested via the exams.

NATS 1211 - *Science of Contemporary Issues*

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M,W,F 11-11:50AM Olin Hall 205

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TENTATIVE SYLLABUS (9/8/2002 4:17 PM)

WEEK OF	TOPICS TO BE DISCUSSED	READING (Chap:pgs)	LABORATORY
Sept 9 11 13	Introduction - Measurements/Statistics/Etc. *How you make sure you're getting what you paid for* Atoms, Molecules and Ions	1:10-22, 2:28 Handouts 2:24-29	Introduction (*Boot Camp)*
Sept 16 18 20	Atoms, Molecules and Ions *Mendeleev and the Periodic Table* Mendeleev and the Periodic Table	2:24-29 Handouts	Measuring weight, mass, volume Pennies, raisins
Sept 23 25 27	Chemical Bonds (not the bond market) *The essence of chemistry and biochemistry* Shapes and sizes of molecules	2:29-31 Handouts	Statistics – averages, standard deviation (last week's data)
Sept 30 Oct 2 4	Neurobiochemistry *Moody, Sullen Girls, Angry Hostile Boys* Shapes and sizes of molecules *How to clean up a spill- what dissolves in what?*	*Contemp. Issues*-lecture 2:32-38 Handouts	Chemical bonds; molecular models
Oct 7 9 11	**MONDAY - Midquarter Exam #1** Intermolecular forces of attraction pH (acids and bases)	2:32-38	Materials Safety Data Sheet - MSDS
Oct 14 16 18	Organic Chemistry - *How to read the bottle* (IUPAC) nomenclature; Reactions Polymers	3:39-41 3:41-42	Aspirin tablets- dissolving
Oct 21 23 25	Drugs, pharmaceutical, herbicides; *what are they?* *Biochemistry and Life* – the Cell Amino acids (proteins	 1:5-6, 4:58-64 3:47-53	Aspirin tablets - purity
Oct 28 30 Nov 1	Chemical/biological warfare defense) The structure of wool and hair (*permanent wave*) Protein structure	*Contemp. Issues*-video Handouts	Soil moist – the principle of disposable diapers
Nov 4 6 8	More protein structure Enzymes – *the catalysts of life* **FRIDAY - Midquarter Exam #2**	Handouts	Sugar analyses
Nov 11 13 15	Nucleic acids (DNA)- The Genetic Code Sugars (Carbohydrates) Fats (Lipids/membranes)	3:53-58 3:43-45 3:45-47	
Nov. 20	**WEDNESDAY - Final Exam 10:30 – 12:15**		

QD42.S556 1980
Smith, R. Nelson (Robert Nelson), 1916-
Title Solving general chemistry problems / R. Nelson Smith, Conway Pierce.
Publ info San Francisco : W. H. Freeman, c1980.
Edition 5th ed.

QD42.D723
Author Drago, Russell S.
Title General chemistry problem solving I / Russell S. Drago.
Publ info Voorhees, N.J. : Spring Dale Pub. Co., c1979.

QD31.2.B7 1982
Brady, James E., 1938-
Title General chemistry, principles and structure / James E. Brady, Gerard E. Humiston.
Publ info New York : Wiley, c1982.
Edition 3rd ed.

QD31.2.P48 1982
Petrucci, Ralph H.
Title General chemistry : principles and modern applications / Ralph H. Petrucci.
Publ info New York : Macmillan ; London : Collier Macmillan, c1982.
Edition 3rd ed.

QD31.2.D39
Day, R. A. (Reuben Alexander), 1915-
Title General chemistry [by] R. A. Day, Jr. [and] Ronald C. Johnson.
Publ info Englewood Cliffs, N.J., Prentice-Hall [1974]

QD257.M67
Moriarty, Robert M.
Title Organic chemistry : a problems approach / Robert M. Moriarty, Charles W. Jefford.
Publ info Menlo Park, Calif. : W. A. Benjamin, [1975]

QD251.B742
Brewster, Ray Q. (Ray Quincy), 1892-
Title Organic chemistry, a brief course, by Ray Q. Brewster and William E. McEwen.
Publ info Englewood Cliffs, N.J., Prentice-Hall, 1959.
Edition 2d ed.

QD253.N38 1992
Nentwig, J. (Joachim)
Title Organic chemistry made easy / Joachim Nentwig, Manfred Kreuder, Karl Morgenstern.
Publ info New York : VCH, 1992.

QD253.R73
Roberts, John D., 1918-
Title Organic chemistry : methane to macromolecules / John D. Roberts, Ross Stewart, Marjorie C. Caserio.
Publ info Menlo Park, Calif. : W. A. Benjamin, 1971.