Chemistry 1010
Introduction to Chemistry
Spring 2004

Instructor: Dr. Don Davies
Office: SL 608
Phone #: 626-6224
Office hours: MWThF 1:00 - 2:00 p.m.
T 10:00 - 11:00 a.m.

Lecture time: M-W-F 10:00-10:50 p.m.
Lecture location: LL123
Web: http://faculty.weber.edu/ddavies1
email: DDAVIES1@weber.edu

Materials:

Conceptual Chemistry, 2nd Ed., John Suchocki, (Required)

Course objective:

1. Develop comprehension of basic principles of chemistry.

2. Gain appreciation for role of chemistry in modern society.

3. Sharpen ability to critically analyze data and solve problems.

4. Enhance citizenship through familiarity with key environmental issues.

"Most general education requirements are related to liberal education, which in turn originate...from the Latin term *artes liberales*. An education in the *artes liberales* meant an education for the liberated or free person. It was an education that prepared a person to live a good life and to meet the responsibilities of conscientious citizenship...students often see general education as something to get through and not as part of their core training, an unfortunate state of affairs."

Nivaldo J. Tro, *J. Chem. Educ.* **2004** p.54.

Course Description:

Chapters 1 through 12 of Conceptual Chemistry focus on basic fundamental principles of chemistry, while chapters 13 through 19 are topic oriented. The topic chapters are generally of greater interest to students and contain valuable information regarding health and environmental issues. However, to appreciate the topical chapters more fully, a knowledge of the underlying chemical principles must first be obtained. Therefore, I have chosen an integrated approach to this course, where topical chapters are mixed in with the concept based chapters. Chapters to be covered are listed in the homework section and a tentative lecture schedule is also provided in the back of this handout.

Minimum letter grade assignments are as follows:

A: 92 - 100%	B: 80 - 83.9%	C: 68 - 71.9%	D: 56 - 59.9%
A-: 88 - 91.9%	B-: 76 - 79.9%	C-: 64 - 67.9%	D-: 52 - 55.9%
B+: 84 - 87.9%	C+: 72 - 75.9%	D+: 60 - 63.9%	E: 0 - 51.9%

Note: I reserve the opportunity to adjust the grading scale or point contribution to your favor.

Lecture Composite:

	Totals
Homework	70 points
4 Quizzes (25 points each)	100 points
3 Course exams (100 points each)	300 points
Term paper	50 points
Final exam	200 points
Total	720 points

Homework:

Homework is an essential part of comprehending the principles taught in this course and will be due the day after we finish talking about the chapter. Below is a schedule of when each chapter is due. Each homework series will be worth 5 points each. Solutions to odd-numbered exercises and problems can be found in appendix C in the back of the book. Further assessment of your comprehension of lecture material can be obtained through taking practice quizzes on the book's website http://www.aw-bc.com/chemplace . The Chemistry Place website also contains interactive tutorials, flash cards, and 3-D visualization tools. The quality of this website was a major factor in the chemistry faculty choosing this text.

Chapter(s)	**Due**	**Chapter(s)**	**Due**
Ch. 1 Chem. is a Science	Fri. 1/16	Ch. 10 Acids / Bases	Fri. 3/5
Ch. 2 Elements of Chem.	Mon. 1/26	Ch. 11 Oxidation / Reduction	Fri. 3/12
Ch. 3, 5 Atomic Models	Fri. 1/30	Ch. 4 Atomic Nucleus	Fri. 3/26
Ch. 6 Bonding / Shape	Fri. 2/6	Ch. 19 Energy	Mon. 4/5
Ch. 7 Molecular Mixing	Wed. 2/11	Ch. 17 Fresh Air	Mon. 4/12
Ch. 8 Water Molecules	Mon. 2/23	Ch. 12 Organic Chem.	Mon. 4/19
Ch. 9 Chemical Reactions	Mon. 3/1	Ch. 14 Chem. of Drugs	Wed. 4/28

Quizzes:

To provide frequent assessment of course comprehension and performance, quizzes will be administered approximately half way between scheduled exams. The quizzes will be based on homework problems and lecture content and will be administered in class.

Examinations and Final:

Course exams will consist primarily of material covered since the previous exam; however, chemistry by nature is cumulative and comprehensive. These exams will be administered during the lecture period on the designated date and will carry a value of 100 points each The final exam will be worth 200 points. Approximately half of the final exam will focus primarily on the last three chapters covered, while the rest of the exam will be comprehensive. Below are exam dates along with the tentative chapters to be covered on each exam.

Exam 1 - Friday January 30, Ch. 1, 2, 3, 5
Exam 2 - Monday February 23, Ch. 6, 7, 8
Exam 3 - Friday April 2, Ch. 9, 10, 11, 4, 19
Comprehensive Final - 9:30 - 11:30 a.m., Thursday May 6

If an emergency should arise and you must miss an exam, notify me as soon as possible. If the reason for the missed exam is acceptable and backed with evidence, I reserve the right to either allow you to take the exam at another time or apply the average of the remaining 2 exams adjusted according to the class averages of each individual exam. **Note**: any questions about the grading of a particular exam or quiz must be addressed within one week of the return date.

Term Paper

From the list of topics covered in Conceptual Chemistry, pick a subject that you would like to know more about. If you wish to write about a chemistry related subject not addressed in the textbook, you will need my approval. The term paper must be turned in no later than **April 23**.

Specifications: For full credit, the term paper should be between 3 to 5 pages double spaced with size 12 font and 1" margins. Within the boundaries of these specifications, you may use whatever format you wish. Some ideas may include compare / contrast, advantages / disadvantages, or chronological order of development. Avoid subjects that are too broad. All reports must have reference to at least one chemical other than water, and show depth of thought and content greater than is presented in class lecture.

References: All reports must contain a minimum of 3 different references. Information may be gathered from the class text, conceptual chemistry, but it will not count as one of the three references. Possible references may include a newspaper article, scientific periodicals, encyclopedias and textbooks written about the subject. At least one of your sources must be from a scientific journal. The journal, Chemical and Engineering News, found in the library or on my website, is an excellent reference source. List your references separately on a final page (does not count as one of the 3 to 5 pages) using the following formats:

Journal: Author. Title of Article *Journal*, **Year**, Volume, pagination.

Hill, M.; Fott, P. Kinetics of gasification of Czech brown coals. *Fuel* **1993**, 72, 525-529.

Newspaper: Author. Title of Article. Title of newspaper, Complete date, pagination.

Suplee, Curt. Infinitesimal Carbon Structures May Hold Gigantic Potential. *The Washington Post*, Dec 2, 1996, p A3.

Book: Author. Chapter Title. Book Title, Edition Number; Series Information (if any); Publisher: Place of Publication, Year; Volume Number, Pagination.

Dresselhaus, M.S.; Eklund, P.C. *Science of Fullerenes and Carbon Nanotubes*; Academic: New York, 1996; pp 126-141.

General Information:

Students having a disability, which inhibits their performance or participation, may receive special accommodations through Services for Students with Disabilities (SSD) located in the Student Service Center.

Violations of academic honesty and integrity will be subject to disciplinary actions, which may include University sanctions. For definitions regarding academic honesty and these sanctions refer to the Student Code in the office of the Vice President for Student Services.