

UNIVERSITY OF KENTUCKY
DEPARTMENT OF CHEMISTRY

CHE 514, Descriptive Inorganic Chemistry
Spring, 2005

Meeting Times: MWF 8:00 – 8:50 a.m.

Classroom: CP-103

Instructor: John P. Selegue, CP-11, 257-3484, selegue@uky.edu

Office Hours: MWF 9:00–10:00 a.m. and by appointment

Course Description: A course dealing in detail with descriptive chemistry of the elements and their compounds, excluding the hydrocarbons and their derivatives. Particular topics may include the origin, cosmochemistry and geochemistry of the elements, industrial preparations and practical uses of the elements and their compounds, synthesis and reactivity, and introductions to organometallic and bioinorganic chemistry (as time permits). Main group and transition elements will be briefly surveyed; more specialized topics are developed in CHE 610 (transition metals), 612 (nonmetals) and 614 (organometallics). More detailed physical aspects of inorganic chemistry such as bonding theories and spectroscopy are introduced in CHE 510. Familiarity with the basic principles of spectroscopic methods is assumed.

Required Text: *Introduction to Modern Inorganic Chemistry, 6th Edition*, K. M. MacKay, R. A. MacKay, and W. Henderson, Nelson Thornes Ltd., London, 2002.

Optional Text: *Chemistry of the Elements, Second Edition*, N. N. Greenwood and A. Earnshaw; Butterworth-Heinemann, Oxford, 1997.

Course Coverage: The course will selectively follow the required text. Emphasis will be on main group chemistry, with lighter coverage of other topics. Particular topics will be selected from chapters 1, 2 (in part), 5, and 8-19 (in part) with supplemental readings from Greenwood and other sources on reserve in the Chemistry-Physics Library.

Grading:

Two examinations	35% each
Term paper	15%
Problem sets:	15%

Final letter grades cut-offs are determined by the actual distribution of final grades. In 2001-2004, typical cut-offs were A, 80; B, 72; C, 64; D (undergraduates only), 50.

Plus/minus grading is not used in this course.

Examinations: *Approximately* mid-semester and Wednesday, May 4, 2005, 8:00 a.m. The second exam will not be comprehensive.

Problem Sets: Assigned *approximately* every two to three weeks. To provide the required differentiation in course content for undergraduate vs. graduate students, some problem sets will include “beyond the textbook” questions, required for graduate students but optional for undergraduate students.

Attendance: Because some course material is from sources other than the textbook, chronic non-attendance will adversely affect grades. Students are responsible for all content and instructions given in class, and may obtain any missed information from classmates, electronic resources or (for excused absences according to S.R. 5.2.4.2) the instructor. Attendance is not explicitly graded. Students must inform the instructor of an absence preferably in advance, but no later than one week after it in order to arrange the opportunity to make up missed work and/or exams.

Submission of Assignments: Assignments are accepted in class or in the instructor’s mailbox by 4:00 p.m. on the due date. E-mailed homework is accepted by the same deadline under exceptional circumstances. Problem sets can be hand-written or typed. Separate instructions will be provided for the term paper. Late assignments will lose 10% per day.

Academic Integrity, Cheating, Plagiarism, and Student Collaboration: Although group work on problem sets is acceptable, each student should turn in his or her individual work, not a copy of another student’s work. Answers quoted verbatim from outside sources should cite the source. Examinations must be a student’s individual work. No plagiarism will be tolerated on term papers. Plagiarism in the optional first draft will result in a warning, but in the final version will result in a penalty. Further details will be provided separately for the term paper. The penalty for plagiarism in this course has included an E in the course; suspension and dismissal are possible.

Grading Writing Skills: Students must use English properly in all aspects of the course (S.R.5.2.4.3). As long as problem sets and examinations are understandable, writing style will not be a grading criterion. However, writing quality, clarity of expression and proper format will be grading criteria for the term paper. Feedback on the optional first draft will give students an opportunity to improve their writing quality.

Electronic resources:

Course website, <http://www.chem.uky.edu/courses/che514/welcome.html>, includes syllabus, term paper instructions, literature outline and problem set keys.

Students must provide the instructor with a working email address, preferably @uky.edu.

Important dates:

January 17 – Martin Luther King’s Birthday, academic holiday

January 19 – Last day to add a class

February 2 – Last day to drop a course without it appearing on student’s transcript

February 9 – Last day to withdraw or drop a course and receive any refund

February 14 – Term paper topic due

March 11 – Last day to withdraw from a course

March 14 to 19 – Spring vacation, time for graduate students to get some research done

March 21 – Optional rough draft of term paper due

April 20 – Term paper due

April 29 – Last day of class

May 4 – Second examination