Descriptive Inorganic Chemistry

Spring 2018
T,Th 12-1:30 pm, MonH 80

Instructor: Steven M. Berry Office: SSB152C
Email: smberry@d.umn.edu
Office Hours: Mon & Tues 8-10:00 am

Text: *Required* - Shriver & Atkins Inorganic Chemistry, 6th Ed., by Shriver, Weller, Overton, Rourke and Armstrong, W.H.Freeman and Company, New York, 2014.

Publisher's Online Resources: *http://www.macmillanlearning.com/Catalog/studentresources/shriver6e*

Website: *http://www.d.umn.edu/~smberry/Teaching/Chem3432*

CANVAS Site: *https://canvas.umn.edu/courses/27396*

Course: This is a one-semester sophomore/junior level course in Inorganic Chemistry and has as prerequisites of Organic Chemistry 2542 and Quantitative Analysis 2222. The major topics covered in the course are periodic table structure and trends, structures of solids, acid/base chemistry, electrochemistry, bioinorganic chemistry and the descriptive inorganic chemistry of groups in the periodic table, such as the alkali earth, alkaline earth, and boron groups.

Student Learning Outcomes (SLOs): Students will: 1) apply a modern view of the structure of the atom to explain the nature of effective nuclear charge and therefore derive periodic table trends in atomic radii, ionic radii, ionization energy, electron affinity, electronegativity, polarizability, and enthalpy of atomization, 2) identify different classes of solids and lattice types. Derive lattice enthalpy factors and predict properties of solids, 3) compare different acid/base classifications systems and predict their trends across the periodic table, 4) compare different diagrammatic presentations of reduction potential and apply them to predict thermodynamic trends of redox reactions, 5) explain the concept of descriptive chemistry and apply those principles to the chemistry of the group 1, 2, and 13 elements, and 6) define the roles of the inorganic elements in biological systems.

Textbook Usage: Assigned readings and assigned homework problems will appear on the course website on a weekly basis. It is required that all students read the assigned portions of the textbook before each lecture. Students are responsible for learning and understanding all assigned readings and lecture topics. Assigned homework problems from the textbook should be completed after review of each lecture topic.

Lecture format: Lecture will be comprised of group problem solving, chalkboard presentations, and powerpoint presentations. An outline of lecture topics and any powerpoint slides will be provided on the course Canvas site. Students are encouraged to print these notes and bring them to supplement lecture. The powerpoint slides are inadequate by themselves and never serve as a substitute for attending lecture. Attendance at all lectures is required, and student attendance will be graded.

Absences: Attendance at all lectures is required. In the event that a lecture must be missed, students are expected to make up the lecture by reading the corresponding section in the textbook and borrowing notes from a friend. If a graded lecture, quiz, exam, or group work session is missed, only a signed note from the proper authority, doctor, etc. explaining the absence will be considered as an excuse.

Grading: The course grade will be based on the percentage of points earned on exams, group works, home works, and quizzes (see below). No make-up exams or assignments will be allowed, except within 36 hours of the class exam and with a signed note from the proper authority. The instructor may assign additional quizzes, homeworks, papers, or special projects at any time.

Tentative Exam Schedule and Grading (Subject to change; attend lecture & see the course website for up-to-date information):

Exam 1: Thurs, 2/8/2018, *(SLO 1)*	100 pts
Exam 2: Thurs, 3/15/2018, *(SLO 2, 3)*	100 pts
Exam 3: Thurs, 4/12/2018, *(SLO 4, 5)*	100 pts
Final Exam: Thursday, May 3, 2018, 12:00 – 1:55 pm, *(SLO 1-6)*	200 pts
Quizzes, Homeworks, Group works, *(SLO 1-6)*	100 pts
TOTAL:	600 pts

Access for Students with Disabilities: It is the policy and practice of UMD to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements, please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources to discuss and arrange reasonable accommodations. Please call 218-726-6130 or visit the DR website at *http://www.d.umn.edu/disability-resources* for more information.

Weblink to related UMD policies: For further information on UMD policies on absences, academic integrity, final exams, student conduct codes, appropriate use of course notes and materials, and student and instructor responsibilities. *http://d.umn.edu/academic-affairs/academic-policies/classroom-policies/recommended-syllabi-policy-statements*