Inorganic Chemistry

Fall 2018

M,W,F 12-12:50 pm, ABAH 225

Instructor: Steven M. Berry Office: SSB 152C
smberry@d.umn.edu
Office Hours: MT 8-10 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://global.oup.com/uk/orc/chemistry/ichem6e/

CANVAS Site: https://canvas.umn.edu/courses/61157

Course: This is a one-semester, 3 credit, junior/senior level course in Inorganic Chemistry and has suggested prerequisites of Physical Chemistry and Descriptive Inorganic Chemistry Chem 3432. The major topics of the course include atomic theory (including many-electron atoms), classical coordination chemistry, symmetry, crystal field theory, ligand field theory, group theory and its applications to spectroscopy, and organometallic chemistry.

Student Learning Outcomes (SLOs): Students will: 1) explain the modern view of the structure of an atom, including the nature of the electron and its orbitals, 2) apply advanced Lewis structure and VSEPR models to predict bonding and structures of inorganic molecules, 3) derive molecular energy level diagrams for diatomic molecules, 4) identify symmetry elements and operations in any molecule, assign a point group, and determine IR and Raman active vibrational modes, 5) apply international rules for naming coordination compounds and their isomers, 6) apply crystal field theory and ligand field theory to derive the energy levels of the d-orbitals in transition metal coordination complexes. 7) derive Russel Saunders term symbols, their splitting, and application to electronic absorption spectra, and 8) identify and characterize organometallic coordination compounds.

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 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 all powerpoint slides will be provided on the course Moodle site. Students are encouraged to print these slides 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. Credit for group projects will not be granted to absent students. 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, homeworks, 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 quizzes, homeworks, papers, or special projects at any time during the course.

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

Exam 1: Fri, September 21 *(SLO 1,2*)		100 pts
Exam 2: Wed, October 17 *(SLO 3,4)*		100 pts
Exam 3: Mon, November 19, *(SLO 5,6)*		100 pts
Final Exam: Fri, December 14, 12:00 – 1:55 pm,	*(SLO 1-8)*	200 pts
Quizzes, Homeworks, Group works, *(SLO 1-8)*		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 www.d.umn.edu/access 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*