

CHEM 243 – Inorganic Chemistry – Fall 2016

T & R 8:10 – 9:30, TOM 207

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Instructor: Vivian Ezeh (Tomsich Hall 314, ezehv@kenyon.edu, 17404275355)

Office hours: Mon, Tues & Wed 11 am – noon, Thurs 4 – 5 pm (TOM 103) or by appointment

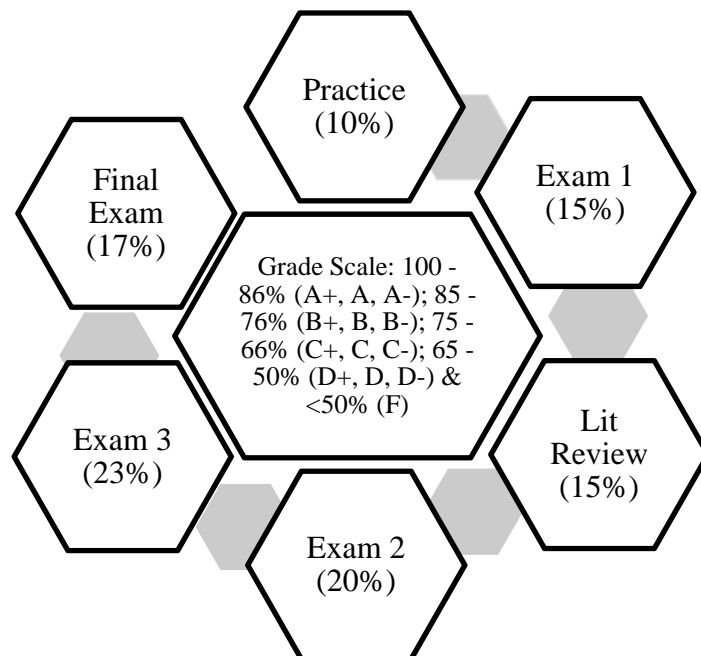
Inorganic Chemistry is considered the chemistry of the periodic table because it is a study of the chemical and physical properties of **all** the elements in the periodic table. Expect to learn about atomic structures, bonding, main group and transition metal compounds. The application of these topics will be explored in detail by reviewing current inorganic chemistry publications.

Course requirements:

Textbook: Geoff Rayner-Canham & Tina Overton “Descriptive Inorganic Chemistry” 6th ed.

Alternate Textbooks: Check the library for any of the following text: Rodgers, Descriptive Inorganic, Coordination and solid state chemistry (QD151.5 .R63 2011) & House, Descriptive Inorganic Chemistry (QD151.3 .H68 2001).

Assessment: Final grades for the class will be based upon your mastery of the materials and your demonstration of that ability on all assignments. Letter grades at the end of the semester will be assigned using the scale indicated in the following figure. The instructor reserves the right to assign whatever final grade is deemed appropriate.



This syllabus is subject to change. Any changes will be communicated either verbally in class or via email.

Practice: Practice makes perfect. Practice questions will be assigned after most class meeting and your answer should be written in your notebook or a separate solution notebook. Since this exercise is a formative assessment, I will check your solutions periodically and give you feedback. Grading will be based on your attempt to answer the questions.

Exams: There will be three in-class exams (**09/22, 10/25 & 12/01**). The content of each exam will be mainly topics covered prior to the exam. However, chemistry concepts are intertwined and some questions might contain questions from previous topics.

Literature Review: This exercise is designed to introduce you to the application of the concepts that we will learn in class. We will read and discuss three current inorganic chemistry publications: 1) Anion transport with chalcogen bonds (**9/20**), 2) Highly efficient and selective photocatalytic CO₂ reduction by iron and cobalt quaterpyridine complexes (**10/20**) and 3) Highly efficient process for the production of biofuel from ethanol catalyzed by ruthenium pincer complexes (**11/29**).

Final exam: A cumulative final exam will take place in **Dec 13th 2016** at 6:30 pm. The exam can only be rescheduled with the permission of the Associate Provost, plan accordingly.

Tentative Schedule

Week – Dates	Topic/event	Reading (DIC6)
1 – 8/25	Intro, atomic structure & electronic configuration	1.1–1.4
2 – 8/30 & 9/01	Periodic table & trends.	2.1 – 2.7, 3.11, 5.1
3 – 9/06 & 9/08	Bonding & shapes: covalent	3.1 – 3.5, 3.10 – 3.11
4 – 9/13 & 9/15	Bonding & shapes: MO (covalent), ionic and metallic	3.6-3.9, 3.14, 4.1-4.2, 4.5-4.6
5 – 9/20 & 9/22	LR/ER (T) and Exam 1 (R)	
6 – 9/27 & 9/29	Acid & Base	7.1–7.8
7 – 10/04	Acid & Base	7.1-7.8
B: 10/06	Fall Break	
8 – 10/11 & 10/13	Redox	8.1-8.13
9 – 10/18 & 10/20	Redox (T) and LR/ER (R)	
10 – 10/25 & 10/27	Exam 2 (T) and Transition metal complex (R)	19.1, 19.2, 19.5
11 – 11/01 & 11/03	Structures of CC and bonding theories	19.3-19.7
12 – 11/08 & 11/10	Crystal Field Theory	19.7-19.9
13 – 11/15 & 11/17	CFT and LFT	19.7-19.10
14 – 11/29 & 12/01	LR/ER (T) and Exam 3 (R)	
15 – 12/06 & 12/08	Bioinorganic Chemistry & Class summary/ review	
16 – 12/13	Cumulative exam @ 6:30 pm	

Important class policies:

Attendance: Attendance at all class meeting is expected. Excessive and unexplained absences will result in dismissal from the course. If you must miss class for excused absence such as family or medical emergency or a scheduled sporting event, inform the Dean of academic advising and me as soon as possible. To be considered for extension on academic work, a notice from the Dean will be required.

Safety: We will visit Tomsich 209 for demos. You would be required to wear safety goggles, long pants & shoes when in the lab.

This syllabus is subject to change. Any changes will be communicated either verbally in class or via email.

Academic accommodation: Students who anticipate they may need accommodation in this course because of the impact of a learning, physical or psychological disability are encouraged to contact Erin Salva (salvae@kenyon.edu, 740-427-5453), Director of Student Accessibility and Support Services. Early contact will help avoid unnecessary inconvenience and delays.

Academic Honesty: All work turned in for credit must adhere to the principles of academic integrity (see Academic Honesty and Questions of Plagiarism in the Course Catalog). Copying colleague's texts, not citing source materials are examples of incidences that could potentially violate academic integrity. Potential violations will be forwarded to the Academic Infractions Board for adjudication, as is required by University policy. If the ethical implication of any situation is not clear, do ask me for clarification.

Bias/Discrimination/Harassment: Kenyon College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/ misconduct /assault we encourage you to report this. If you report this to a faculty member, she or he must notify our college's Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at Kenyon, please go to: <http://www.kenyon.edu/directories/offices-services/title-ix/sexual-assault-and-harassment/>