

SYLLABUS
Indiana University

Spring 2019: 01/07/2019 - 04/29/2019

Online Course

Instructor:

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CHEM-T 510, Inorganic Chemistry

Course Description

This course introduces fundamental concepts of inorganic chemistry including descriptive chemistry, bonding in coordination chemistry, organometallic chemistry, special topics in inorganic chemistry and biological inorganic chemistry.

Learning Outcomes

Upon completion of this course, students will be able to:

- Demonstrate effective oral and written scientific communication skills
- Communicate scientific principles in a concise and effective manner
- Analyze articles from inorganic research literature)
- Build application of inorganic chemistry in everyday life
- Develop molecules models utilizing ChemDraw program (available through IUware)
- Implement organic elements further understanding to inorganic materials)
- Adapt expertise in Inorganic Chemistry
- Investigate exceptions and expansions of inorganic chemistry knowledge
- Describe theories of inorganic chemistry and apply these theories to explain the behavior of metal ions in biological or material systems).

Learning Materials (Two required, 2 recommended for review) Provided by STEM Teach III

Bertini, Gray, Steifel, Valentine, *Biological Inorganic Chemistry Structure & Reactivity*, University Science Books 2007

Shriver and Atkins, *Inorganic Chemistry, Fifth Edition*, W.H. Freeman and Co., New York, 2010

Miessler, G. L., Fischer, P.J. and Tarr, D.A. *Inorganic Chemistry, Fifth Edition*, Pearson Education, Inc. 2014

Rodgers, G. E., *Descriptive Inorganic, Coordination, and Solid- State Chemistry, Third Edition*, Brooks/Cole, Cengage Learning 2012

Hosmane, N. S., *Advanced Inorganic Chemistry, First Edition*, Academic Press 2017

Assessment

Quick checks for each concepts: 10 pts (10%)

Weekly discussion (questions, literature paper or materials video): 15 pts for each (15%)

Assignment for each lecture: 15 pts (15%)

(3) Exams after main part: 100 pts for each (40%)

Research literature presentation: 200 pts (20%)

Total: 540 pts (100%)