Tentative Syllabus

Course Information

Course Number/Section	CHEM 3341
Course Title	Inorganic Chemistry
Term	Fall 2021

Professor Contact Information

Professor	Julia Chan
Email Address	Julia.Chan@utdallas.edu
Office Location	BSB 11.530
Online Office Hours	TBD

Grading Policy

Assignments	15%
Exam 1 (Oral Exams to occur on 9/27-9/29)	25%
Exam 2 (Video submission – Molecular Compounds in Literature)	25%
Exam 3 (Video submission – Solid State Compounds in Literature)	25%
Final Exam (Essay)	10%

Course Policies

Class Participation via Teams or In-Person is encouraged.
Teams link: Click here to join the meeting

Class Materials

The Instructor will provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation.

Course Description/ Pre-requisites, Co-requisites, and/or Other Restrictions

This course provides an overview of fundamental topics in inorganic chemistry. The first part of this course will consist of an introduction to the electronic structure of atoms and simple molecules, molecular geometry, molecular orbitals, and elementary symmetry concepts. We will discuss complexation, bonding, and electronic spectra of the transition metals and introduce main group and solid state chemistry. It is expected that students have an understanding of periodic trends, VSEPR, Lewis dot, atomic orbitals, and some familiarity with valence bond theory and molecular orbital theory. The course will provide a foundation for further education in chemistry.

Student Learning Objectives/Outcomes

After completing the course the student will be able to:

1. Explain the atomic structure based on quantum mechanics and explain periodic properties of the atoms
2. Explain the periodic properties of the different groups of compounds focusing on production methods and application of selected elements and compounds
3. Explain the structure and bonding in molecules / ions and predict the structure of molecules / ions
4. Define and identify structures and bonding of coordination compounds
5. Apply principles in molecular theory and bonding models to the study of inorganic compounds
6. Explain selected crystal structures and parameters that affect the crystal structure of a compound.

7. Explain the band structure of solids and determine the electrical properties
8. Apply concepts to current literature

Learning Methods and Activities

Lectures, written assignments, presentation of literature

Please see the links below for learning objectives in each section
https://chem.libretexts.org/Bookshelves/Inorganic_Chemistry/Modules_and_Websites_(Inorganic_Chemistry)
MFT = *Inorganic Chemistry* - Miessler, Fischer, and Tarr (MFT);

Required Materials
We will predominantly use the following resources:
1. *Introduction to Inorganic Chemistry* (Highly recommend you download the full pdf text)
2. *Inorganic Chemistry* - Miessler, Fischer, and Tarr (MFT)
3. *Inorganic Chemistry* - Housecroft

Special Seminar (Teams link to be provided):
September 24 (Friday at 3 pm) and November 17 (Wed) – ACS Division of Inorganic Chemistry seminar.

Additional Resources:
https://en.wikibooks.org/wiki/Introduction_to_Inorganic_Chemistry
Modules and Websites

Communication
This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Comet Creed
This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same: *"As a Comet, I pledge honesty, integrity, and service in all that I do."*

Academic Support Resources
The information contained in the following link lists the University's academic support resources for all students. Please go to Academic Support Resources webpage for these policies.

UT Dallas Syllabus Policies and Procedures
The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to UT Dallas Syllabus Policies webpage for these policies.

The description and timelines contained in this syllabus are subject to change at the discretion of the Professor.