# CHEM 3729 - Inorganic Chemistry

## Fall 2026 Syllabus, Section 01, CRN 40762,

Credit hours: 3

## Instructor

**Susan Citrak**

Email: scitrak@ysu.edu

## Public Instructor Information

Instructor Title: Asst. Professor of Chemistry
Instructor Professional Qualifications: Ph.D. Inorganic Materials Chemistry, University of California, Santa Cruz
Bachelor's of Science, Chemistry Focus, Mills College, Oakland, CA
Instructor Office Location: Ward Beecher 5023
Instructor Office Phone: 330-941-1997

## Course Description

3729. Inorganic Chemistry. Fundamental principles underlying the structure, bonding, and properties of the elements and molecular, solid state, and coordination compounds. Prereq.: "C" or better in CHEM 3719. 3 s.h.

## Course Readings

| Group | Title | Author | ISBN |
|---|---|---|---|
| Required | Inorganic Chemistry | Miessler, Fischer and Tarr | ISBN-13: 978-0-321-81105-9 |

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

## Schedule of Topics and Assignments

| Day | Date | Reading(s) | Proposed Topic | Due/To Prepare for Class |
|---|---|---|---|---|
| Mon | 8/24 | N/A | Welcome<br>What is Inorganic Chemistry? | |
| Wed | 8/26 | Chapter 2 | Historical Development of the Atom | |
| Fri | 8/28 | Chapter 2 | Schrodinger Equation | |
| Mon | 8/31 | Chapter 2 | Schrodinger Equation | |
| Wed | 9/2 | Chapter 2 | Periodic Properties of Atoms | |
| Fri | 9/4 | Chapter 3 | Lewis Structures | |
| Mon | 9/7 | LABOR DAY - No Classes | | |
| Wed | 9/9 | Chapter 3 | VSEPR Theory | |
| Fri | 9/11 | Chapter 3 | Valence Bond Theory | |
| Mon | 9/14 | Chapter 4 | Symmetry and Point Groups | |
| Wed | 9/16 | Chapter 4 | Character Tables | |
| Fri | 9/18 | Chapter 4 | Molecular Vibrations and Spectroscopy | |
| Mon | 9/21 | Chapter 5 | MO from AO Review | |
| Wed | 9/23 | Chapter 5 | MO for Homoronuclear Diatomic Molecules | |
| Fri | 9/25 | Chapter 5 | MO for Heteronuclear Diatomic Molecules | |
| Mon | 9/28 | Chapter 5 | MO for Larger Molecules | |
| Wed | 9/30 | Chapter 5 | MO for Larger Molecules | |
| Fri | 10/2 | Chapter 6 | Acid-Base Review | |

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| Mon | 10/5 | Chapter 6 | Hard and Soft Acids and Bases |
| Wed | 10/7 | EXAM 1 | Chapters 2-6 |
| Fri | 10/9 | Chapter 9 | Nomenclature |
| Mon | 10/12 | Chapter 9 | Isomerism |
| Wed | 10/14 | Chapter 9 | Coordination Numbers and Structures |
| Fri | 10/16 | Chapter 10 | Evidence for Electronic Spectra |
| Mon | 10/19 | Chapter 10 | Crystal Field Theory |
| Wed | 10/21 | Chapter 10 | Crystal Field Theory |
| Fri | 10/23 | Chapter 10 | MO Diagrams for Octahedral Complexes |
| Mon | 10/26 | Chapter 10 | MO Diagrams for Octahedral Complexes |
| Wed | 10/28 | Chapter 10 | Ligand Field Theory |
| Fri | 10/30 | Chapter 10 | Ligand Field Theory |
| Mon | 11/2 | Chapter 10 | Jahn-Teller Effect<br>4- and 6- Coordinate Preferences |
| Wed | 11/4 | EXAM 2 | Chapters 9 and 10 |
| Fri | 11/6 | Chapter 11 | Beer-Lambert Law<br>Quantum Numbers and Spin-Orbit Coupling |
| Mon | 11/9 | Chapter 11 | Selection Rules<br>Correlation Diagrams<br>Orgel Diagrams |
| Wed | 11/11 | VETERANS DAY - No Classes | |
| Fri | 11/13 | Chapter 11 | Tanabe-Sugano Diagrams<br>Jahn-Teller Distortions and Spectra |
| Mon | 11/16 | Chapter 11 | Applications of T-S Diagrams |
| Wed | 11/18 | Chapter 11 | Td and Charge Transfer Complexes |
| Fri | 11/20 | EXAM 3 | Chapter 11, but includes concepts from<br>Chapter 10 as well |
| Mon | 11/23 | Presentations | |
| Wed | 11/25 | THANKSGIVING BREAK - No Classes | |
| Fri | 11/27 | THANKSGIVING BREAK - No Classes | |
| Mon | 11/30 | Presentations | |
| Wed | 12/2 | Presentations | |
| Fri | 12/4 | Presentations | |
| Mon | 12/7 | Finals Week | |
| Wed | 12/9 | Finals Week | |
| Fri | 12/11 | FINAL EXAM: 8-10am in same lecture room | |

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