



Intermediate Inorganic Chemistry

DOUGLAS W. STEPHAN | CHEMISTRY 338

Course Description

- ▶ *The chemistry of the Transition Metals:* The chemistry of the d-block elements is discussed in detail, covering such topics as coordination chemistry, bonding, electronic spectra, magnetic properties, reactivity trends, reaction mechanisms and an introduction to organometallic compounds, catalysis and some industrial processes.
- ▶ Location: LM 155
- ▶ Lectures: Mon, Wed at 3:00 pm
- ▶ Labs: Thurs, Fri
- ▶ Prerequisites: Chem 238
- ▶ Text: Inorganic Chemistry (3rd Ed.) Housecroft and Sharpe

Schedule

Lectures	Subject	Reading
Sept 11	Introduction to Transition metals	Chapter 20
Sept 13	Coordination Numbers and Isomerism	Chapter 21
Sept 18	Ligands in Coordination chemistry	Chapter 21
Sept 20	Crystal Field Theory	Chapter 21
Sept 25	Molecular Orbital Theory	Chapter 21
Sept 27	Absorption Spectra	Chapter 21
Oct 2	Magnetic Properties	Chapter 20/21
Oct 4	Survey of the First Row Metals	Chapter 22
Oct 9	NO CLASS Thanksgiving	
Oct 11	Survey of the First Row Metals	Chapter 22
Oct 16	Survey of the Second and Third Row Metals	Chapter 23
Oct 18	Multinuclear NMR Spectroscopy	

Schedule

Lectures	Subject	Reading
Oct 23	Bioinorganic chemistry	Chapter 29
Oct 25	Bioinorganic chemistry	Chapter 29
Oct 30	Bioinorganic presentations	
Nov 1	Mid-Term (in Class time)	
Nov 6/8	Study week	Chapter 24
Nov 13	Metal-Carbon	Chapter 24
Nov 15	pi-Complexes	Chapter 24
Nov 17	Metal Hydrides	
Nov 22	Reaction Mechanisms	Chapter 25
Nov 24	Reactivity	Chapter 25
Nov 29	Catalysis	Chapter 24/27
Dec 4	Asymmetric Hydrogenation Catalysis	Chapter 27
Dec 6	Other Catalysis	Chapter 27

Assessment Criteria

- ▶ In Class Pop-quizzes (5 mins) (10%)
- ▶ Bioinorganic Assignment (10%)
- ▶ Mid-term (20%)
- ▶ Laboratory (30%)
- ▶ Final Exam (30%)

Contact Information



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E-mail must be sent from a utoronto.ca account. Please identify yourself as a 338 student and provide student i.d. I also welcome and encourage discussion in person.

For more Course information: See Portal