

**UNIVERSITY OF CALGARY  
FACULTY OF SCIENCE  
DEPARTMENT OF CHEMISTRY  
COURSE OUTLINE  
FALL 2019**

**1. Course:** CHEMISTRY 531, Advanced Inorganic Chemistry: Organometallic Chemistry

| LEC | DAYS | TIME        | ROOM  | INSTRUCTOR    | OFFICE  | EMAIL  | OFFICE HOURS  |
|-----|------|-------------|-------|---------------|---------|--|---------------|
| L01 | MWF  | 10:00-10:50 | SS113 | Gregory Welch | EEEL546 | <a href="mailto:Gregory.welch@ucalgary.ca">Gregory.welch@ucalgary.ca</a> | W 15:00-16:00 |
| T01 | M    | 14:00-14:50 | SS113 | Gregory Welch | EEEL546 | <a href="mailto:Gregory.welch@ucalgary.ca">Gregory.welch@ucalgary.ca</a> |               |

To avoid IT problems, it is recommended that the students use their U of C account for all course correspondence. Please use "CHEM 531 inquiry" as the Subject of your e-mail.

Desire 2 Learn (D2L) course name: CHEM 531 L01 - (Fall 2019) - Advanced Inorganic Chemistry

Departmental Office: Room SA 229, Tel: 403-220-5341, e-mail: [chem.undergrad@ucalgary.ca](mailto:chem.undergrad@ucalgary.ca)

**2. Course Description: Lectures:** Coordination and organometallic chemistry of the transition elements. Fundamental and applied aspects, including characterization techniques, reaction mechanisms, catalysis, bioinorganic chemistry, and polymerization.

**3. Recommended Textbook(s):**

*The Organometallic Chemistry of the Transition Metals, 6th Edition, by Robert H. Crabtree, Wiley 2014.*  
*Inorganic Chemistry, 5th Edition, Miessler, Fischer, and Tarr, Pearson 2014.*  
*Introduction to Polymers, 3rd Edition, by Young and Lovell, CRC Press 2011.*

**4. Topics Covered and Suggested Readings:**

**Course Content**

**Introduction to Organometallic Transition Metal Chemistry**

Fundamental aspects of structure and bonding  
 Coordination chemistry

**Organometallic Reactions**

Basic reactions and mechanisms

**Applications of Organometallic Reactions**

Metathesis, Oligomerization, Polymerization, Small Molecule Activation,  
 Organic Couplings, Synthesis of Conjugated Polymers, Direct Arylation

**Chapter in Textbook**

*(not all sections will be covered)*

Tarr – Chapters 9 -12  
 Crabtree – Chapters 1 - 5

Tarr – Chapters 13-14  
 Crabtree – Chapters 6-8

Tarr – Chapters 13-14  
 Crabtree – Chapters 9,12-14

Department Approval

Electronically Approved

Date

August 30, 2019