

**UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY
COURSE SYLLABUS
WINTER 2017**

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

LEC	DAYS	TIME	ROOM	INSTRUCTOR	OFFICE	EMAIL	OFFICE HOURS
L01	MWF	10:00-10:50	SB105	Gregory Welch	EEEL546	gregory.welch@ucalgary.ca	Monday 15:00-17:00
T01	M	14:00-13:00	SB148	Gregory Welch	EEEL546	gregory.welch@ucalgary.ca	Monday 15:00-17:00

Desire 2 Learn (D2L) course name: CHEM 531 L01 - (Winter 2017) - Advanced Inorganic Chemistry

Departmental Office: Room SA 229, Tel: 403-220-5341, e-mail: uginfo@chem.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: Approved by Department Head

Date: December 20, 2016