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Faculty of Science Course Syllabus
Department of *Chemistry*
Organotransition Metal Chemistry - 5102
Fall 2018

Instructor(s): *Mark Stradiotto* *mark.stradiotto@dal.ca* *Chemistry 217*

Lectures: *MWF 11:35am - 12:25pm* *Chemistry 540*

Office Hours: *MWF 11:00-11:25 am in Chemistry 217*

Tutorials: *NA*

Course Description

Various themes of modern transition metal chemistry are examined, including but not restricted to: fundamental structure and bonding; spectroscopic characterization methods; as well as reactivity and reaction mechanisms.

Course Prerequisites
CHEM 3103.03 (grade of C- or better, or equivalent)

Course Anti-requisites
CHEM 4102.03

Course Objectives/Learning Outcomes
Students, upon completion of the course, should demonstrate working knowledge pertaining to:
-basic organometallic structure and bonding
-fundamental reaction classes involving organometallic complexes
-mechanistic organometallic chemistry and catalysis as per the material covered in the course

Course Materials
- Provided by the instructor

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Course Assessment

Tests *20% each: Three term tests (in class) on 28 Sept 2018, 19 Oct 2018, 07 Nov 2018*

Final exam *40% (05 December 2018 – location TBA)*

Assignments *Self-study problem sets can be found in the course material that will be provided throughout the term. It is strongly recommended that students work through these problems, and related material in the suggested texts, in order to assess their progress in learning the course material. However, none of these problem sets will be graded.*

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale (where a grade of at least B- must be obtained):

A+	(90-100)	B+	(77-79) F (< 70)
A	(85-89)	B	(73-76)
A-	(80-84)	B-	(70-72)

Course Content

The impact of organometallic transition metal chemistry on the evolution of modern synthetic chemistry practices has been profound in recent years, as evidenced by the awarding of the Nobel Prize for Chemistry in 2001, 2005, and 2010 on this topic. This advanced class seeks to develop a fundamental understanding of such chemistry, as well as to highlight fundamental and applied aspects of organometallic reactivity. As such, this advanced class in organometallic chemistry will address a range of topics including structure and bonding models, reactivity and mechanism, and applications in synthetic chemistry. Students are responsible for all material covered in the lectures, including any handouts, as well as the assigned readings. While there is no formal textbook for the course, students are encouraged to consult advanced texts covering the topics of inquiry, as well as to address the self-study problems that will be provided. Students are encouraged to review in detail the material covered in the past inorganic chemistry courses. ***Assumed Background for this course includes ALL material covered in Chemistry 2101 and 3103, for example: polyhedral geometries and isomerism; basic molecular orbital theory; symmetry; and the basics of d-block coordination chemistry. Students should also have the main group and transition elements of the periodic table memorized (you will need it for exams, etc.).***

Suggested Texts (especially for background reading):

"The Organometallic Chemistry of the Transition Metals" by R. H. Crabtree.
"Inorganic Chemistry (Third Edition)" by G. L. Miessler and D. A. Tarr.

ACCOMMODATION POLICY FOR STUDENTS

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. **Student Accommodation Policy:** http://www.dal.ca/campus_life/student_services/academic-support/accessibility.html

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Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the **Advising and Access Services Centre (AASC)** prior to or at the outset of the regular academic year. More information and the ***Request for Accommodation*** form are available at www.dal.ca/access.

ACADEMIC INTEGRITY

Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.

Policy on Intellectual Honesty and ***Faculty Discipline Process***:
https://www.dal.ca/dept/university_secretariat/academic-integrity.html

STUDENT CODE OF CONDUCT

Dalhousie University has a student code of conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course.
http://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

COPYRIGHT

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SERVICES AVAILABLE TO STUDENTS

The following campus services are available to all Dalhousie students. Unless noted otherwise, the services are free.

Service	Support Provided	Location	Contact
General Academic Advising	Help with - understanding degree requirements and academic regulations - choosing your major - achieving your educational or career goals - dealing with academic or other difficulties	**Killam Library Ground floor** Rm G28 ***Bissett Centre for Academic Success***	In person: Killam Library Rm G28 By appointment: - e-mail: advising@dal.ca - Phone: (902) 494-3077 - Book online through MyDal
Dalhousie Libraries	Help to find books and articles for assignments Help with citing sources in the text of your paper and preparation of bibliography	**Killam Library Ground floor** Librarian offices	In person: Service Point (Ground floor) By appointment: Identify your subject librarian (URL below) and contact by email or phone to arrange a time: http://dal.beta.libguides.com/sb.php?subject_id=34328
Studying for Success (SFS)	Help to develop essential study skills through small group workshops or one-on-	**Killam Library 3rd floor**	To make an appointment: - Visit main office (Killam Library main floor, Rm G28) - Call (902) 494-3077

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	one coaching sessions Match to a tutor for help in course-specific content (for a reasonable fee)	Coordinator Rm 3104 Study Coaches Rm 3103	- e-mail Coordinator at: sfs@dal.ca or - Drop in to see us during posted office hours **All information can be found on our website: www.dal.ca/sfs**
Writing Centre	Meet with a tutor to discuss writing assignments (lab report, research paper, thesis, poster) - Learn to integrate source material into your own work appropriately - Learn about disciplinary writing from a peer or staff member in your field	**Killam Library Ground floor** Learning Commons & Rm G25	To make an appointment: - Visit the Writing Centre in the Killam Learning Commons (Rm G40) and book an appointment - Call (902) 494-1963 - e-mail writingcentre@dal.ca - Book online through MyDal We are open six days a week **See our website: writingcentre.dal.ca**