General Course Information
Instructor: Marvin Parasram
Brown 451A, parasram@nyu.edu

Lectures Schedule:
9:30-10:45 am Tu/Th in GCASL RM 388

Textbooks (Optional):
Organometallic Chemistry: From Bonding to Catalysis by John F. Hartwig
The Organometallic Chemistry of the Transition Metals, 7th Edition by Robert H. Crabtree

Grading: Participation/Assignments (30%), Exam 1 (20%), Exam 2 (20%), Final exam (30%)
Exam 1: Thursday, October 13th
Exam 2: Tuesday, November 22nd
Final exam: Thursday, December 15th

Office hours: 2:00-3:00 pm Tuesdays in Brown 452 Conference Room

Chem-GA 1113 Mission Statement:
This course focuses on fundamental principles in transition metal chemistry and the applications of transition metal catalysts in organic synthesis. Special emphasis will be placed on the mechanism of related catalytic transformations.

Class Site: The class site is on NYU Brightspace.

Schedule
09/01/22 – Introduction
09/06/22 – Electron counting, 18 e- rule – Part 1
09/06/22 – Electron counting, 18 e- rule – Part 2
09/13/22 – MO theory and d-orbital splitting diagrams – Part 1
09/15/22 – MO theory and d-orbital splitting diagrams – Part 2
09/20/22 – MO theory and d-orbital splitting diagrams – Part 3
09/22/22 – MO theory and d-orbital splitting diagrams – Part 4
09/27/22 – Ligand types – Dative/Polar Ligands
09/29/22 – Ligand Substitution Reactions
10/04/22 – No Class
10/06/22 – No Class
10/11/22 – Exam 1 Review
10/13/22 – Exam 1
10/18/22 – Oxidative Addition
10/20/22 – Transmetalation and Reductive Elimination
10/25/22 – Migratory Insertion and Elimination Reactions
10/27/22 – Reactions of Coordinated Ligands
11/01/22 – Classical Cross-Coupling Reactions –Part 1
11/03/22 – Classical Cross-Coupling Reactions –Part 2
11/08/22 – Modern Cross-Coupling Reactions – Part 1
11/10/22 – Modern Cross-Coupling Reactions – Part 2
11/17/22 – Review Exam 2
11/22/22 – Exam 2
11/24/22 – Thanksgiving - No Class
11/29/22 – Allylation and Olefin Metathesis
12/01/22 – C–H Activation
12/06/22 – Hydrogenation and Hydroformylation Reactions
12/08/22 – Polymerization and Photoredox catalysis
12/13/22 – Final Exam Review
12/15/22 – Final Exam

Student Accessibility: If you require accommodations for this course, please contact the Moses Center: https://www.nyu.edu/students/communities-and-groups/student-accessibility.html

COVID-19 Precautions
This class will be an in-person lecture. Please be advised that you must wear your face mask during the lecture. Please visit the NYU COVID-19 webpage for further information (https://www.nyu.edu/life/safety-health-wellness/coronavirus-information.html).