



**Course outline:** This is not a traditional laboratory course. I am not providing you with a set of pre-designed experiments. At the first class, we will define the problem and scope of our investigation. I have provide several references to frame that discussion. Please read these before our first meeting.

**Scientific conduct:** Your activity in this course is to generating new data and understanding

1. Abstract. A paragraph summary of your study and key results.
2. Introduction. Your introduction answers three key questions: What are you investigating and why, how does this work relate to prior work in this area, and what is your main hypothesis(es) in the investigation?
3. Results. This section answers what did you do, what happened, and how do you know that?
4. Discussion. In the literature, this is sometimes combined with results but not here. The discussion section will examine what you learned about the reaction, what features of the catalysts matter, and how your work related to the knowledge in the literature. This is the most complex section of your report.
5. Conclusions. A summary of what you learned and where your study can go next, which is critical for the mid-semester report!
6. Experimental detail. The exact procedures and data is presented here.
7. References.

**Reports are the product of individual work and writing**, but collaboration in the intellectual process is strongly encouraged.

Presentations: The entire CHEM 295 lab class is a single team working on our problem. In that way, it is essential that we share data and discuss results. To facilitate that engagement, each group will present their data and lead a discussion on the implications of their results. The

The following schedule has a basic flow: There is initial content we need to cover and planning that you (and we) need to do to be successful.

Course Schedule		
<b>Date</b>	<b>Event</b>	<b>Location</b>
8/31	First meeting: course logistics & semester plan, safety, selected topic overview, and talking about our feelings	W-408**
9/7	Second meeting: <u>Compound plans due</u> . Discussion of compounds and plans for catalysis. NMR tutorial in groups (3:00 5:00 pm)	W-408** NMR laboratory
9/14	Laboratory 1-1: Synthesis of ligands and compounds.	W-408
9/21	Laboratory 1-2:	W-408
9/28	Laboratory 1-3: Complete compound characterization.	W-408
10/5	Laboratory 1-4: Catalysis runs.	W-408
10/12	Laboratory 1-5:	W-408
10/19	<u>Report 1 due. Presentations of data and analysis</u> ; analysis of group results.	W-408**
10/26	<u>Compound plans due</u> . Laboratory 2-1: Synthesis of round 2 ligands and compounds.	W-408
11/2		