Spring 2012 – CHEM-652
Final Project

For the final project, students will review a topic of importance to the field of organometallic chemistry. Potential topics are listed at the end of this document. This final project will be completed in three stages.

Stage 1: Each student will provide an outline for their review by ***no later*** than April 19th. The outline for each report should seek to:

1. Define the importance of the selected topic with the chemical/organometallic community
2. Provide a historical overview of the selected topic
3. Detail the examples for the literature that will be used to illustrate the chosen topic
4. Consider how this field might develop in the future.

Stage 2: Each student will write a five-page review, including figures but NOT references covering the most important details from their chosen topic. This review should be single spaced in arial font (11 pt) with 1" magins on all sides. These reviews are due in class on May 3rd. Please submit both a hard copy and an electronic pdf version to Joel (joelr@udel.edu) by email. The reviews will be compiled and distributed to the entire class before the end of the semester. Your review should take into account each of the points below.

General Guidelines for the written review:

1. Define the importance of the work within the chemical/organometallic community, using appropriate references
2. Summarize the most important developments in the chosen research area
3. Describe how the reviewed topic relates to material addressed in this course
4. Conclude by suggesting how the chosen field may develop in the future
5. Reproduce data and figures where appropriate – when possible, recreate figures and schemes rather than just copying and pasting from the literature.

Do not plagiarize or simply recapitulate sections of text from references that you consult in preparing your review. This review should reflect your own interpretation and understanding of the topic discussed. References should be used liberally in your discussion.

Grading Rubric

1. Introduction of topic (15 pts)
2. Review of chosen topic (35 pts)
3. Relation of topic to organometallics as a field (15 pts)
4. Potential for Future developments (10 pts)
5. Quality of writing (15 pts)
6. References are thorough and appropriate (10 pts)

Stage 3: Oral presentations will be given as part of an Organometallics Symposium on Saturday May 12th from 9 AM – 12 PM. Each presentation must be made using PowerPoint and should aim to teach the review topic to the class. Each presentation should be 10 – 15 minutes in duration. Students should submit their PowerPoint file via email by noon on Friday May 11th. I will assign the order of the presentations.

Potential Review Topics:

1. Hydrosilanation Catalysis
2. Organometallic LED Materials
3. Bioorganometallic Chemistry
4. Electronic Structure of M–NHC Bonding
5. Surface Organometallic Chemistry
6. Organometallics and CVD
7. M–CO_2 Catalysis for Organic Synthesis
8. M–CO_2 Bonding
9. Organometallic Chemistry of Zinc
10. Metallocene Chemistry
11. Asymmetric Olefin Hydrogenation Catalysis
12. Asymmetric Epoxidation Catalysis
13. Radical Clocks in Organometallic Chemistry
14. Stable Metallacycles
15. Olefin Metathesis
16. Sigma-bond Metathesis
17. C–H Bond Activation
18. Homoleptic Isonitrile Complexes
19. Hydroamination Catalysis
20. Parahydrogen as a Mechanistic Tool