

Chemistry 453 (Advanced Organic)

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- 1. Student Outcomes:** The following outcomes are expected and will be assessed. Students will:
 - a) apply understanding of common organometallic mechanisms to solve problems
 - b) recognize key functional group transformations within catalytic reactions
 - c) collaborate in groups to solve complex problems
 - d) evaluate metal-catalyzed reactions within recent chemical literature
- 2. Texts:** Steinborn, D. **Fundamentals of Organometallic Catalysis**, Wiley-VCH, 2012, Weinheim, Germany. This text is required.
- 4. Internet Resources and Communication:** You will be required to access this course on Canvas. I will place relevant articles and class notes on Canvas.
- 6. Group Work:** We will have regular in-class group work and an in-class group assignment. Group work will count for 30% of your overall course grade.
- 7. Office Hours:** I will make every effort to be available in my office during the times I've indicated below for office hours. You are welcome to schedule an appointment or take your chances and drop by, especially if you find these times inconvenient.

Office Hours
Monday: 2:45 – 4
Tuesday: 10:50-11:50
Wednesday: 1:30 -2:45
- 8. Group Presentation:** You will be required to contribute to your group's presentation in which you will highlight the use of organometallic catalysis in the synthesis of an interesting compound. This information must come from the recent chemical literature. This counts for 20% of your course grade.
- 9. Quiz:** We will have one quiz over chapters 2 and 3. This quiz will be 10% of your course grade
- 10. Examinations:**
 - a) **Major Exams:** Exams will cover material in the text and the lecture material as well as any other assigned material. There will be 2 major exams worth 100 points each. These will count for 50% of your overall course grade. There will be no exam scores dropped. **If you are caught cheating, I reserve the right to assign you a zero on that quiz or exam, and you could be subject to further action as stated in university policy.** If an excused absence results in you missing an exam, you need to communicate with me, preferably before, to schedule a make-up.
 - b) **Exam Schedule:** A tentative, but reasonably accurate, schedule for the 4 hour exams and final exam is given below. Changes in exam dates will be announced at least two days in advance. If you miss class and do not find out about the changes, that is your problem and it is not a valid reason for requesting a make-up exam. The date for the final exam is firm as set by University policy.

Exam #1	April 13 (Monday)
Final	May 4 (Monday 10:30-1)

11. **Course Grade:** Your overall course grade will be based on your performance in both the lecture and laboratory. The weighting of each course activity is shown below.

Group Work	20%
Quiz	10%
Hour exams	50% (25% each)
Group Project	20%

Letter grades will be assigned at the end of the course based on your percentage of total possible points, according to the following APPROXIMATE scale:

A	90 – 100%
B	80 – 90%
C	70 – 80%
D	60 – 70%
NC/F	< 60%

(+) and (–) grades will be assigned within each bracket. (There is no A+ grade.)

12. **Attendance:** Attendance will be taken and will be used for advising purposes. If you miss 20% of the total class meetings (4), you may be dropped from the course.

13. **Course Syllabus:** Listed below is a syllabus with approximate lecture coverage and approximate examination points indicated.

Date	Chapter	Content	Approximate % of Lecture
3-4		Introduction	100
3-6	2	intro to catalysis	100
3-16	2,3	organometallics overview	100
3-18	3	organometallics overview	100
3-20	3	organometallics overview	100
3-23	4	Quiz 1 / Hydrogenation of Olefins	100
3-25	4	Hydrogenation of Olefins	100
3-27	4	Hydrogenation of Olefins	100
3-30	5	Hydroformulation of Olefins	100
4-1	5	Hydroformulation of Olefins	100
4-8	5	Hydroformulation of Olefins	100
4-10		Review/group Activity	100
4-13		EXAM #1	100
4-15	7	Metathesis	100
4-17	7	Metathesis	100
4-20	11	C-C Couplings	100
4-22	11	C-C Couplings	100
4-24	11	C-C Couplings	100
4-27		Group Presentations	100
4-29		Group Presentations	100
5-4		FINAL EXAM (10:30-1)	

10. **Academic Accommodations:** While all students are expected to meet the minimum academic standards for completion of this course as established by the instructor, students with disabilities may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Once the student files documentation, the Disability Resource Center will contact the student's instructors and provide written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student. This policy assists the university in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with disabilities and guarantees all qualified students equal access to and benefits of PLNU programs and activities.