CHEM 3720L - Organic Chemistry II Laboratory - 1st Summer Semester 2019
5037 Ward Beecher Hall

Lab Coordinator: Dr. John A. Jackson - Office: 5022 Ward Beecher Hall
Office Hours: MWF 10:15-11:00 AM, T-Th 9:30-10:00 AM
Phone: (330) 941-1551 E-mail: jajackson@ysu.edu
Course Website: http://jajackson.people.ysu.edu/CHEM3720L/index.html

Lab Instructors:
CRN: 32468 - TRS 9:16 am-12:19 pm - Dr. Michael A Serra - maserra@ysu.edu
CRN: 32469 - TWR 3:30 pm-6:30 pm - Dr. John A Jackson - jajackson@ysu.edu

Required Materials:
2. OSHA approved eye protection.
3. Hard-backed, bound notebook (no spiral or loose-leaf).
4. Paper towels. YSU will not provide paper towels, you will need them!
5. Lab coat or apron.

Lab Rules:
1. OSHA approved eye protection must be worn at all times. Never wear contact lenses.
2. No work is allowed outside of regularly scheduled hours.
3. Report any accidents immediately to your teaching assistant.
4. Each student must clean their work area at the end of each lab period.
5. Report broken or missing equipment immediately, your TA will replace it.
6. Always lock your drawer before you leave at the end of the period.
7. Be sure that you dispose of chemical waste in the prescribed manner.
8. Laboratory grades will not be given to students with course grades of W or AU. If you are withdrawing from the lecture class, you must withdraw and check out of the lab.
9. The use of electronic devices with headphones is prohibited.

Ohio Higher Ed. - CHEM 3720L - Lab Course Learning Outcomes:
Students must be proficient in all of the following core competencies:
1. In the organic chemistry laboratory, the student should perform and master the basic techniques for:
   (i) The separation and purification of organic compounds (recrystallization, distillation).
   (ii) The analysis of organic compounds (TLC).
   (iii) The characterization of organic compounds (melting and boiling points), IR spectroscopy (hands-on), and NMR.
2. Students should conduct a broad range of organic transformations which illustrate topics drawn from the organic chemistry lecture sequence, including multi-step syntheses.
3. Students should learn how to keep a laboratory notebook and write reports detailing their experiments.
4. Students should understand and practice safe laboratory techniques.

3720 LAB SCHEDULE – 1st Summer Semester 2019

Lab 1. Check In, Lab Rules, Safety, Lab Equipment, Notebook.
Lab 2. Exp. 31 Reduction of Camphor. (note: use 2 g camphor) (10 pts).
Lab 3. Exp. 31 Part A. Oxidation of Borneol. (10 pts).
Lab 4. IR Spectroscopy. HANDOUT on web page (no prelab). (10 pts).
Lab 5. NMR Spectroscopy. HANDOUT on web page. Computer Lab room 5043 Ward Beecher (no prelab). Note – Have students clean glassware for Grignard experiment during this lab period. (10 pts).
Lab 6. Exp. 33A Triphenylmethanol (part 1 – Preparation of Phenylmagnesium Bromide). Water Sensitive, must have dry glassware. (10 pts).
Lab 7. Exp. 33A (continued). (10 pts).
Lab 8. Completion of Previous Experiments.
Lab 9. Exp. 43 Nitration of Methyl Benzoate. (10 pts).
Lab 10. Exp. 12 Isopentyl Acetate. (10 pts).
Lab 11. Exp. 8 Acetylsalicylic Acid. (10 pts).
Lab 12. Exp. 37 The Aldol Condensation. (10 pts).
Lab 13. Completion of Previous Experiments.
Lab 14. Check Out. All Lab reports due. No late reports accepted after checkout period.

Course Objectives: To experience the techniques practiced by the modern organic research chemist.

Lab Grades: The lab is worth 100 points in your CHEM 3719 grade. Lab grades will be based upon the pre lab (20%), notebook (20%), results, technique, and safety (20%), and reports (40%). The laboratory grades will be normalized to an average of 85% to ensure equity amongst laboratory sections.

Pre-Lab. (Written in the laboratory notebook) The pre lab should include the following:
1. Title.
2. Balanced equations for all reactions, data on reactants, catalysts, and solvents (molecular weight, grams, moles, solvent volume, useful physical constants such as boiling point, melting point, density, etc.).
3. Product data (molecular weight, theoretical yield, literature value of melting point or boiling point).

Laboratory Notebook. The laboratory notebook should include the following:
1. An accurate account of all experimental procedures performed.
2. The exact weight or volume of reagent or solution used.
3. The exact time each task is performed.

Laboratory Results, Technique, and Safety. The laboratory technique grade will be decided on the following basis:
1. Preparedness for lab.
2. Cleanliness of work area, lab safety.
4. Safety.

Synthesis Laboratory Reports. (Due 1 Week after completion of the experiment): There will be a Synthesis Laboratory Report Form on the Lab Web Page for each of the synthesis experiments.
Academic Integrity:

As outlined in The Student Code of Conduct, all forms of academic dishonesty are prohibited at Youngstown State. This includes plagiarism, the unauthorized use of tools or notes in taking tests or completing assignments, fabrication of data or information used for an assignment, working with others without permission from the instructor, and more. A student who is believed to have violated the academic integrity policy will meet with the instructor to discuss the allegations. The student may accept responsibility for the violation and any sanctions selected by the instructor, or they have the right to ask for a hearing before a hearing panel. The full Academic Integrity policy can be found in Article V of The Student Code of Conduct, while further information on University procedures for alleged academic integrity violations can be found in Article V.

Mandatory Statement of Non-Discrimination from the University:
Youngstown State University does not discriminate on the basis of race, color, national origin, sex, sexual orientation, gender identity and/or expression, disability, age, religion or veteran/military status in its programs or activities. Please visit www.ysu.edu/ada-accessibility for contact information for persons designated to handle questions about this policy.”

Statement for students with disabilities:
In accordance with University procedures, if you have a documented disability and require accommodations to obtain equal access in this course; please contact me privately to discuss your specific needs. You must be registered with the Center for Student Progress Disability Services, located at Kilcawley Center – RM 2082, and provide a letter of accommodation to coordinate reasonable accommodations. You can reach CSP Disability Services at 330-941-1372.

1st Summer Term CHEM 3720L Lab Calendar (Date, CRN: - Experiment)

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| 2    | 5/28, 32469-3 | 5/29, 32469-4 | 5/30, 32469-5 |             |             |             |
| 3    | 6/4, 32469-6 | 6/5, 32469-7 | 6/6, 32469-8 |             |             |             |
| 4    | 6/11, 32469-9 |              | 6/13, 32469-10 |             |             |             |
| 5    | 6/18, 32469-11 |              | 6/20, 32469-12 |             |             |             |
| 6    | 6/25, 32469-13 |              | 6/26, 32469-14 |             |             |             |

| 32468 | CHEM 3720L | TRS | 09:16 am-12:19 pm |
| 32469  | CHEM 3720L | TWR | 03:30 pm-06:30 pm |