Chemistry 343: Organic Chemistry Lab II (002)
Spring 2022

- **Professor**: Dr. Rui Zhang
- **Email**: rui.zhang@wku.edu
- **Office Tel**: 270-745-3803
- **Office**: KTH 4054
- **Instructor**: ~~Kehinde Ayorinde~~
- **Email**: ~~kehinde.ayorinde021@topper.wku.edu~~
- **Classroom**: OCH 3005
- **Meeting Time**: T 12:40-05:10 PM
- **Text**: Organic Laboratory II: 343 Chemistry Lab for WKU by Mayo (ISBN 978-1-119-918349). Electronic version will be provided on Blackboard.
- **Corequisites**: CHEM 342
- **Prerequisites**: CHEM 340 & 341 with a grade of "C" or better.
- **Other Supplies:** Lab goggles are required for this course. No shorts, sandals or open-toed shoes will be allowed during any lab period.

Course Description: The laboratory to accompany Chemistry 342. Experiments are designed to provide students with understanding of various aspects in organic chemistry including fundamental techniques of organic synthesis, microscale techniques, multi-step synthesis, spectroscopic analysis, and mechanistic understanding of organic reactions.

Date	Experiment
01/18	No Lab
01/25	Course outline, laboratory safety, equipment, writing proper laboratory reports, check-in
02/01	**Lab 1:** Williamson Synthesis of Ethers: Propyl *p*-Tolyl Ether **(part A: Synthesis**)
02/08	**Lab 1:** Williamson Synthesis of Ethers: Propyl *p*-Tolyl Ether **(part B: NMR)**
02/15	**Lab 2:** Reduction of Ketones Using a Metal Hydride Reagent: *cis*- and *trans*-4-*tert*butylcyclohexanol and **Quiz 1**
02/22	**Lab 3:** Grignard Reaction with a Ketone: Triphenylmethanol
03/01	**Lab 4:** Diels-Alder Reaction **(part A: Synthesis)**
03/08	**Lab 4:** Diels-Alder Reaction **(part B: NMR)** and **Quiz 2**
03/15	No lab (Spring break)
03/22	**Lab 5:** Nucleophilic Aromatic Substitution: 2,4-dinitrophenylthiocyanate (**part A**)
03/29	**Lab 5:** Nucleophilic Aromatic Substitution: 2,4-dinitrophenylthiocyanate (**part B**) and **Quiz 3**
04/05	**Lab 6:** Crossed Aldol Condensation: Dibenzalacetone
04/12	**Lab 7**: The Esterification Reaction: Isopentyl Acetate (**part A**)
04/19	**Lab 7**: The Esterification Reaction: Isopentyl Acetate (**part B**) and **Quiz 4**; check-out

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Lab Report
Each experiment will be worth **100**-Points and the lab report is due at the beginning of next experiment (i.e. you have at least one week to write the report). In general, the lab report should include the following parts:

1) Title of report and your and partner's names
2) Introduction and background information (10 points)
3) Experimental procedure (including reaction scheme) (20 points)
4) Results (20 points)
5) Discussion (20 points)
6) Spectroscopic analysis (20 points)
7) Conclusion (10 points)

Lab Quizzes
Four lab quizzes will be given throughout the semester, and they will take ca. 20 minutes. 50 points may be earned for each quiz. Missed lab quizzes will result in zero credit.

Grading
This lab course will be graded on the total points you earn, and the points will be distributed as follows (subject to minor modification):

Experiment (7×100)	700
Quiz Section (4×50)	200
Total	**900** points

Grade Assignment:

A (> 90 %), **B** (80 – 89 %), **C** (70 – 79 %), **D** (60 – 69 %), **F** (< 59 %)

Make-up policy
There are NO make-ups for any activities (e.g. lab reports, quizzes) in this lab course.

Students with Disabilities
*Student with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services, Garrett 101. The OFSDS telephone number is Student Success Center in DUC A201. Phone number is 745-3030. Please do not request accommodations from the professor without a letter of accommodation from the OFSDS.

Safety
Safety issue is the top priority and safe lab procedures will be enforced any time and anywhere when you are doing experiments. No horseplay will be tolerated. Proper lab attire must be worn during all experiments. Goggles must be worn at all times in the lab. Failure to comply with safe laboratory procedure and/or proper eye-wear and clothing protection will result in expulsion from the lab followed by the necessary inquiry.

Safety Goggles—No exceptions

First offense: Loss of 50% of lab points for that lab.
Second offense: 100% loss of points for that lab-leave lab for that day.
Report will be given to Alicia McDaniel and Dr. Webb.
Third offense: “F” for CHEM 341 course.

Open-toed Shoes and/or Shorts

First offense: Loss of 50% of lab points for that lab.
Second offense: 100% loss of points for that lab-leave lab for that day.
Third offense: “F” for CHEM 341 course.

Improper Waste Disposal

First offense: Lab failed for that day. Go home.
Second offense: “F” for CHEM 341 course.

Hazardous Behavior

First offense: Lab failed for that day. Go home.
Second Offense: Meeting with Dr. Webb and myself to discuss reason(s) why you cannot refrain from said behavior. Penalty will be assigned that day.

Instructor Name: Rajib Nath

Email: rajib.nath898@topper.wku.edu