## Laboratory Course Schedule

<table>
<thead>
<tr>
<th>Exp</th>
<th>(Week) Title</th>
<th>Lecture</th>
<th>Report Due</th>
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<tbody>
<tr>
<td></td>
<td>(1) Check-In</td>
<td>Jan 19</td>
<td>Feb 2</td>
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<tr>
<td>1</td>
<td>(2) Synthesis of Aspirin</td>
<td>Jan 26</td>
<td>Feb 9</td>
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<tr>
<td>2</td>
<td>(3) Tandem Knoevenagel Condensation-Robinson Annulation</td>
<td>Feb 2</td>
<td>Feb 16</td>
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<td>3</td>
<td>(4) Diels-Alder Cycloaddition</td>
<td>Feb 9</td>
<td>Feb 23</td>
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<td>4</td>
<td>(5) Isolation of Eugenol from Freshly Ground Cloves</td>
<td>Feb 16</td>
<td>Mar 2</td>
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<td>5</td>
<td>(6) Pinacol-Pinacolone Rearrangement</td>
<td>Feb 23</td>
<td></td>
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<td></td>
<td>(7) Purification of Pinacolone by Distillation (IR &amp; RI)</td>
<td>Mar 2</td>
<td>Mar 9</td>
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<tr>
<td>6</td>
<td>(8) Fischer Ester Synthesis of Isopentyl Acetate &amp; Purification of Isopentyl Acetate by Distillation (IR &amp; RI)</td>
<td>Mar 9</td>
<td>Mar 30</td>
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<td>(9) SPRING BREAK</td>
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<tr>
<td>7</td>
<td>(10) Synthesis of Unsymmetrical Biaryls Part I</td>
<td>Mar 23</td>
<td>Apr 6</td>
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<td>(11) Synthesis of Unsymmetrical Biaryls Part II</td>
<td>Mar 30</td>
<td>Apr 13</td>
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<td></td>
<td>(12) To Be Determined</td>
<td>Apr 6</td>
<td>Apr 30</td>
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<tr>
<td>8</td>
<td>(13) A Phase-Transfer Synthesis of Nylon</td>
<td>Apr 13</td>
<td>Apr 27</td>
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<tr>
<td></td>
<td>(13) REVIEW: Final Exam</td>
<td>Apr 20</td>
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<td></td>
<td>(15) Final Exam</td>
<td>Apr 27</td>
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Organic Chemistry Laboratory  
Chem 331, Sections 01—06  
Spring 2021

Lecture  
Tuesdays 4:00—5:20 p.m.

Instructor  
Prof. Fina Liotta  
e-mail: fliotta@newark.rutgers.edu  
Office Hours: Wednesdays 1:00—2:20 p.m.

Teaching Assistants  
Section 01: Chandima Abeywickrama ca595@chem.rutgers.edu  
Section 02: Chandima Abeywickrama ca595@chem.rutgers.edu  
Section 03: James McQuade jsm329@newark.rutgers.edu  
Section 04: Ashutosh Sahoo as3260@newark.rutgers.edu  
Section 05: Kelvin Urbina kelvin.urbina@rutgers.edu  
Section 06: Shiyi Yang sy629@newark.rutgers.edu  
Office Hours: To Be Determined

Required Text and Materials  
Experimental Procedures (Posted on the course Blackboard site)  
Bound Laboratory Notebook

Course Description  
The purpose of the introductory organic chemistry laboratory course is for students to gain experience in the practice of organic synthesis. The course introduces students to the laboratory techniques and safety precautions of practical organic chemistry, including the synthesis, isolation, purification and analysis of organic compounds.

Course Learning Objectives  
Upon the completion of this course, students should know how to:

- Maintain a detailed and accurate laboratory notebook
- Record and summarize observations, experimental data, and conclusions clearly and completely
- Execute safe laboratory practices by handling laboratory glassware, equipment, and chemical reagents appropriately
- Perform common laboratory techniques, including reflux, distillation, steam distillation, recrystallization, vacuum filtration, aqueous extraction, thin layer chromatography, and column chromatography
• Characterize organic molecules by physical and spectroscopic means, including MP, BP, IR, and NMR
• Critically evaluate experimental data to determine the identity, purity, and percent yield of products
• Predict the outcome and mechanisms of similar organic reactions performed in lab, using a basic understanding of the principles of reactivity of functional groups
• Dispose of chemical waste in a safe and responsible manner
• Work effectively in a group environment

Course Overview

Lecture Component: Synchronous lectures will be delivered via Collaborate Ultra and will be recorded. “This material is subject to the copyright law of the United States (Title 17 U.S. Code) and is for the use of students in Chem 331, Organic Chemistry Laboratory, only. Further reproduction or distribution is prohibited.”

Laboratory Component: Asynchronous laboratory course content will be posted on the course Blackboard site. “This material is subject to the copyright law of the United States (Title 17 U.S. Code) and is for the use of students in Chem 331, Organic Chemistry Laboratory, only. Further reproduction or distribution is prohibited.”

Course Evaluation

Experiment Grades:

Glassware, Equipment & Safety, 50 points
The Synthesis of Aspirin, 100 points
Tandem Knoevenagel Condensation-Robinson Annulation, 100 pts
Diels-Alder Reaction, 100 points
Isolation of Eugenol, 100 points
Pinacol-Pinacolone, 100 points
Fischer Ester Synthesis, 100 points
Synthesis of Unsymmetrical Biaryls Part I, 100 points
Synthesis of Unsymmetrical Biaryls Part II, 100 points
A Phase-Transfer Synthesis of Nylon, 50 points

Late policy: Late lab reports will be accepted; however, the grade of each lab report will be penalized 5 points per 24 hours that the lab report is late.

Quizzes: Synchronous weekly quizzes will take place at the start of each lecture (Tuesdays at 4:00 pm). Quizzes will count 10% of each experiment grade. The lowest quiz grade will be dropped.

Final Exam: The final exam will count 10% (100 points) of the course grade.

Course Letter Grades: Course letter grades will correspond to numerical grades as follows: A (92-100), B+ (87-91), B (80-86), C+ (75-79), C (70-74), D (60-69), F (≤59).
Add/Drop/Withdraw

Last day to drop course without “W” grade: January 26th
Last day to drop course with “W” grade: March 22nd

Newark College of Arts and Sciences (NCAS) calendar:
https://registrar.newark.rutgers.edu/office-registrar-fall-academic-calendar

Help

Contact Prof. Liotta or your Teaching Assistant if you need assistance.
Free tutoring is available online at the learning center:
https://myrun.newark.rutgers.edu/learning-center

Accommodations and Support

Rutgers University Newark (RU-N) is committed to the creation of an inclusive and safe learning environment for all students and the University as a whole. RU-N has identified the following resources to further the mission of access and support:

For Individuals with Disabilities: The Office of Disability Services (ODS) is responsible for the determination of appropriate accommodations for students who encounter barriers due to disability. Once a student has completed the ODS process (registration, initial appointment, and submitted documentation) and reasonable accommodations are determined to be necessary and appropriate, a Letter of Accommodation (LOA) will be provided. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at ods.rutgers.edu. Contact ODS at (973)353-5375 or via email at ods@newark.rutgers.edu.

For Individuals who are Pregnant: The Office of Title IX and ADA Compliance is available to assist with any concerns or potential accommodations related to pregnancy. Students may contact the Office of Title IX and ADA Compliance at (973) 353-1906 or via email at TitleIX@newark.rutgers.edu.

For Absence Verification: The Office of the Dean of Students can provide assistance for absences related to religious observance, emergency or unavoidable conflict (e.g., illness, personal or family emergency, etc.). Students should refer to University Policy 10.2.7 for information about expectations and responsibilities. The Office of the Dean of Students can be contacted by calling (973) 353-5063 or emailing deanofstudents@newark.rutgers.edu.

For Individuals with temporary conditions/injuries: The Office of the Dean of Students can assist students who are experiencing a temporary condition or injury (e.g., broken or sprained limbs, concussions, or recovery from surgery). Students experiencing a temporary condition or injury should submit a request using the following link: https://temporaryconditions.rutgers.edu.

For English as a Second Language (ESL): The Program in American Language Studies (PALS) can support students experiencing difficulty in courses due to English as a Second Language (ESL) and can be reached by emailing PALS@newark.rutgers.edu to discuss potential supports.
For Gender or Sex-Based Discrimination or Harassment: The Office of Title IX and ADA Compliance can assist students who are experiencing any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking. Students can report an incident to the Office of Title IX and ADA Compliance by calling (973) 353-1906 or emailing TitleIX@newark.rutgers.edu. Incidents may also be reported by using the following link: tinyurl.com/RUNReportingForm. For more information, students should refer to the University’s Student Policy Prohibiting Sexual Harassment, Sexual Violence, Relationship Violence, Stalking and Related Misconduct located at http://compliance.rutgers.edu/title-ix/about-title-ix/title-ix-policies/.

For support related to interpersonal violence: The Office for Violence Prevention and Victim Assistance can provide any student with confidential support. The office is a confidential resource and does not have an obligation to report information to the University’s Title IX Coordinator. Students can contact the office by calling (973) 353-1918 or emailing run.vpva@rutgers.edu. There is also a confidential text-based line available to students; students can text (973) 339-0734 for support.

For Crisis and Concerns: The Campus Awareness Response and Education (CARE) Team works with students in crisis to develop a support plan to address personal situations that might impact their academic performance. Students, faculty and staff may contact the CARE Team by using the following link: tinyurl.com/RUNCARE or emailing careteam@rutgers.edu.

For Stress, Worry, or Concerns about Well-being: The Counseling Center has confidential therapists available to support students. Students should reach out to the Counseling Center to schedule an appointment: counseling@newark.rutgers.edu or (973) 353-5805. If you are not quite ready to make an appointment with a therapist but are interested in self-help, check out TAO at Rutgers-Newark for an easy, web-based approach to self-care and support: https://tinyurl.com/RUN-TAO.

For emergencies, call 911 or contact Rutgers University Police Department (RUPD) by calling (973) 353-5111.