

Laboratory Course Schedule

Exp	(Week) Title	Lecture	Laboratory	Report Due
	(1) Check-In	–	Sep 6 – 9	Sep 13 – 19
1	(2) Synthesis of Aspirin	Sep 9	Sep 13 – 19	Oct 4 – 10
2	(3) Tandem Knoevenagel Condensation-Annulation	Sep 16	Sep 20 – 26	Oct 11 – 17
3	(4) Diels-Alder Cycloaddition	Sep 23	Oct 27 – Oct 3	Oct 18 – 24
4	(5) Isolation of Eugenol from Freshly Ground Cloves	Sep 30	Oct 4 – 10	Oct 25 – 31
5	(6) Pinacol-Pinacolone Rearrangement	Oct 7	Oct 11 – 17	–
	(7) Purif. of Pinacolone by Distillation; IR & RI	Oct 14	Oct 18 – 24	Nov 1 – 7
6	(8) Fischer Ester Synthesis of Isopentyl Acetate	Oct 21	Oct 25 – 31	–
	(9) Purif. of Isopentyl Acetate by Distillation; IR & RI	Oct 28	Nov 1 – 7	Nov 8 – 14
7	(10) Synthesis of Unsymmetrical Biaryls Part I	Nov 4	Nov 8 – 14	Nov 29 – Dec 5
8	(11) Synthesis of Unsymmetrical Biaryls Part II	Nov 11	Nov 15 – 21	Dec 6 – 12
	(12) THANKSGIVING WEEK (No Lab Nov 22– 23)	–	–	–
9	(13) Computer Aided Drug Design (In Lab Exercise)	Nov 18	Nov 29 – Dec 5	–
10	(14) Phase-Transfer Synthesis of Nylon	Dec 2	Dec 6 – 12	Dec 6 – 12
	(14) Lab Practical & Check-Out	–	Dec 6 – 12	–

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Rutgers-Newark Health Policy

To protect the health and wellbeing of all members of the Rutgers-Newark community, masks must be worn by all persons inside campus buildings when in the presence of others, and buildings in non-private enclosed settings (e.g., common workspaces, workstations, meeting rooms, classrooms, etc.). Masks should conform to CDC guidelines and should securely cover the nose and mouth. Masks must be worn during class meetings. Each day before you arrive on campus or leave your residence hall, you must complete the brief survey on the My Campus Pass symptom checker self-screening app found at: <https://my.rutgers.edu/portal>

Lecture

Fridays 2:30 – 3:50 pm; ACK123

Instructor

Fina Liotta

e-mail: fliotta@newark.rutgers.edu

Office Hours: Wednesdays 2:30 – 3:50 pm; Olson 304

Teaching Assistants: To Be Determined

Office Hours: To Be Determined

Required Text and Materials

Lisa Nichols © 2017, “Organic Chemistry Techniques 2nd Edition”, (Posted on the course Canvas site)

Experimental Procedures (Posted on the course Canvas 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
- Dispose of chemical waste in a safe and responsible manner
- 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
- Work effectively in a group environment

Course Overview

Lecture Component: Lectures on the theory and practice of the experiments will take place the week preceding the execution of individual experiments

Laboratory Component: Experiments will be carried out during four-hour weekly lab sessions.

Course Evaluation

Experiment	Grade Value (points)
<i>Glassware, Equipment & Safety</i>	50
<i>Synthesis of Aspirin</i>	100
<i>Tandem Knoevenagel Condensation-Annulation</i>	100
<i>Diels-Alder Cycloaddition</i>	100
<i>Isolation of Eugenol from Freshly Ground Cloves</i>	100
<i>Pinacol-Pinacolone Rearrangement</i>	100
<i>Fischer Ester Synthesis of Isopentyl Acetate</i>	100
<i>Synthesis of Unsymmetrical Biaryls Part I</i>	100
<i>Synthesis of Unsymmetrical Biaryls Part II</i>	100
<i>Computer Aided Drug Design (In lab Exercise)</i>	100
<i>A Phase-Transfer Synthesis of Nylon</i>	50

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: Weekly quizzes will take place at the start of each lecture. Quizzes will count 10% toward each experiment grade. The lowest two quiz grade will be dropped.

Lab Practical: The lab practical 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

Add/Drop: 9/6/22 - 9/15/22

Last day to drop course with “W” grade: September 16, 2022

Newark College of Arts and Sciences (NCAS) [Fall 2022 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

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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.