

Chemistry 304
Organic Chemistry Laboratory
(Sections 02-03)
Fall 2021
2:00 – 5:45 p.m. W/R (Sims 104)

Instructor:	Dr. Jay Hanna	Dr. Aaron M. Hartel	Dr. Athena Detrick
Office:	Sims 313B	Sims 314B	Sims 301B
Email:	hannaj@winthrop.edu	hartela@winthrop.edu	detricka@winthrop.edu
Office Phone:	323-4933	323-4942	323-4931
Office Hours:	M 3:00 - 4:30 p.m.	MW 10:00 - 11:00 a.m.	T 11:00 - 12:00 noon

Description:

CHEM 304 introduces the fundamental lab techniques of organic chemistry. Students will perform several experiments that demonstrate reactions covered in CHEM 301-302.

Objectives:

Students completing this 1-credit undergraduate course will:

1. Be able to carry out operations common to an organic chemistry lab
2. Be able to keep a well-documented record of laboratory work in a proper lab notebook
3. Become familiar with the instrumental techniques of melting point, operation IR and NMR spectroscopy, mass spectrometry, and gas chromatography, as well as the operation of and interpretation of results from the corresponding laboratory instruments.
4. Communicate the design, execution, and analysis of data from an experimental procedure in a formal report.
5. Understand the hazards associated with chemicals and chemical operations and methods for the mitigation of those hazards.

Course Materials:

- Text:** Anne B. Padiás, *Making the Connections: A How-To Guide for Organic Chemistry Lab Techniques*. 2nd or 3rd edition
- Notebook:** *The Official Laboratory Research Notebook* or equivalent
- Goggles:** Each student must purchase an approved pair of safety goggles. Only approved safety goggles are acceptable. You will not be permitted to perform the laboratory experiments without safety goggles
- Other:** Experiment handouts and other materials are available on the course Blackboard

Prelab Briefing:

Each week there will be a briefing on the experiment to be carried out. These prelab briefings will be available as videos accessible from Blackboard. Students should watch the prelab briefing for each experiment prior to attending lab each week.

Lab Attendance and Conduct:

Experiments missed due to unexcused absences will be counted as a zero. Experiments missed due to excused absences may only be made up with instructor permission. Students are expected to adhere to the Winthrop Student Conduct Code as outlined in the Student Handbook:

<http://www2.winthrop.edu/studentaffairs/handbook/StudentHandbook.pdf>

Laboratory Work:

Each student should report to their assigned lab station in Sims 104 to carry out the experiment. Experiments should be performed individually unless instructed otherwise. Samples generated for subsequent processing or analysis must be properly labeled with the student's name and experiment number. It is the student's responsibility to leave their area clean and organized for the next lab section. Failure to do so will result in a 10-point penalty on the lab report grade.

NOTE: Any student who is unprepared for lab (no notebook, no lab goggles, incomplete prelab) or violates safety standards may not perform the lab and will receive a zero.

Post-Laboratory Analyses:

In many cases, laboratory samples must be analyzed at a time outside of lab. Contact the Chemistry Instrumentation Manager (Dr. Athena Detrick, 301B Sims) to schedule analysis time.

Grading:

Each student must submit a complete Experiment Portfolio (lab report) for each experiment. Technique Experiments are graded on a scale of 50 pts and Reaction Experiments are graded on a scale of 100 pts in accordance with the Lab Report Guidelines. Late assignments will be penalized 10% per day. **No assignments will be accepted after one week from the due date.**

Final Course Grade:

The final grade for the course is determined from the weighted average of the student's grades for all lab assignments. Final grades are assigned using the following ranges:

A = 93 – 100%	A- = 90 – 92.99%	
B+ = 87 – 89.99%	B = 83 – 86.99%	B- = 80 – 82.99%
C+ = 77 – 79.99%	C = 73 – 76.99%	C- = 70 – 72.99%
D = 60 – 69.99%		
F = < 60%		

Withdrawals:

In order to drop CHEM 304, you must also drop CHEM 302. Per Winthrop University policy, any student who wishes to withdraw from the course with a grade of "N" must do so before the Course Withdrawal Deadline (**October 22, 2021**).

Changes to Syllabus:

We reserve the right to update and edit this syllabus as necessary, including assignments, the calendar, and policies. You will be notified immediately of any such changes.

Accessibility:

"Winthrop University is committed to providing accessible learning experiences and equal access to education for all students. The syllabus is available in alternate formats upon request."

"If you are a student with a disability (including mental health concerns, chronic or temporary medical conditions, learning disabilities, etc.) and you anticipate or experience academic barriers due to the condition, please contact The Office of Accessibility (OA) for information on accommodations, registration, and procedures. After receiving approval for accommodations through OA, please make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely manner."

OA contact information:

Email: accessibility@winthrop.edu

Phone: 803-323-3290

Office: 307 Bancroft Hall Annex

General Lab Order:

- **Only dispose of waste in containers labeled for waste collection** Do not put any chemical waste in the trash, down the drain or in any container not labeled as waste.
- **Replace lids on all containers immediately after use.** Open containers increase everyone's exposure to the substances within them. Spills are also more likely when a container is open. Some reagents can also be ruined by excessive exposure to air.
- Clean your glassware after each experiment.
- Clean up any spills you create. If you don't know how a spill should be cleaned up, ask.
- Put things back where you found them (equipment and anything non-disposable).
- Dispose of broken glass, used pipets and capillaries in the white broken glass containers.
- Leave your lab station clean and organized.

Lab Safety:

- **SAFETY GOGGLES ARE MANDATORY ANY TIME YOU ARE IN THE LAB.** Even if you are simply recording data, safety glasses must be worn. If you are found not wearing safety glasses, you will be asked to leave and will receive a zero for the experiment.
- Wear sensible clothing. Shoes and shirts are required. Long hair should be pulled back. Open-toed shoes and high heels are prohibited. Spills are common; it is best not to wear your good clothes into the lab. Use of a lab coat or lab apron is required.
- Eating, drinking and smoking are prohibited in the labs.
- Report any spills, cuts, burns or breakage of glassware immediately. Accidents happen and they will not affect your grade.
- Report any malfunctioning equipment (Mel Temps, hot plates, etc.).
- Particularly noxious substances should be handled in a fume hood. Make certain the sash is lowered to a safe level, as shown on the side of the hood.
- A safety shower is located in each laboratory in case of a major spill of a hazardous chemical on yourself.
- Each laboratory has an eyewash station to be used if a chemical has come in contact with your eyes. Just place your face between the two fountains and press the lever to activate the water. Try to keep your eyes open as best you can, as this flushes them much more effectively.
- Disposable gloves can be found on the shelves of each laboratory. Wear gloves when dealing with any hazardous chemical. You may even want to wear gloves at all times in the laboratory. If you get a hazardous chemical on your gloves, take them off within a few minutes, wash your hands and put on a fresh pair. Gloves are not impervious; they simply prevent immediate exposure.

Addendum

Winthrop COVID-19 Statement:

During this pandemic period each student is expected to act in the best interest of the WU community by behaving responsibly to limit the spread of the COVID-19 virus. All students, faculty, and staff must wear masks inside buildings and classrooms, unless alone in a private office. All members of the campus community must follow campus guidance on masking. Please do not attend class if you have fever or any signs of the COVID virus; do not attend class if your roommate or someone you have close contact with acquires the virus and be respectful of others' desire to remain COVID-free. Use the Patient Portal COVID-19 Health Tracker daily. Students who violate WU guidelines will be asked to comply. Continued failure to comply may result in referral to the Dean of Students Office as a student conduct violation.

Winthrop Policy on COVID-Related Absence:

Students should contact Health Services regarding a positive test, close contact, or enhanced COVID-like symptoms. Any student who has either tested positive, has COVID-like symptoms, or has close contact with someone who has COVID, must contact Health Services. Students should log in to the [Patient Portal](#) to schedule a **TELEPHONE TRIAGE** Appointment w/ **COVID** as the reason and upload the positive test result if applicable. Health Services will communicate with the student on what steps to take next, and if need be, the Dean of Students Office will get absence verification for required isolation and quarantine. Students who verify their absences through the Dean of Students Office often minimize any academic impact caused by missed class time. Health Services will only provide dates of absence, not medical information. Please note, residential students who test positive should also follow their personal COVID Quarantine and Isolation Plan.