CHEM 2561 Syllabus (Spring 2026)

Laboratory for Organic Chemistry 2 (Prof. Myers' Sections)

Instructor: **Dr. Brian Myers**
Office: Meyer Hall 256
Phone: 419-772-2350
Email: b-myers@onu.edu
Web pages: https://myersorganic.netlify.app/
http://tinyurl.com/BJMofficehours
Canvas

Office Hours: MWF: 10–noon. Open door or by appointment (virtual is an option)

CHEM 2561.21 (CRN 30105) Tuesday 8:00 AM Meyer 205/217
CHEM 2561.23 (CRN 30108) Tuesday 12:00 PM Meyer 205/217

Catalog Info: Chemistry 2561 is a 1 credit hour course. Reactions with/on radicals, dienes, aromatics, alcohols, carbonyls, amines, the structure and chemistry of carbohydrates, and organic polymer chemistry. Taken concurrently with CHEM 2521. Credit may be received for CHEM 2561 or 2661, but not for both. Offered spring semester.

Course Fee: $40

Goals: The lab experiments in this course are designed to illustrate the practical implementation of the theories and concepts discussed in the Chemistry 2521 lecture course. The laboratory experiments and exercises will enhance and deepen your understanding of the lecture materials. Student learning objectives/outcomes for each experiment can be located in the lab manual.

***Required Texts*:**

- *Organic Chemistry Laboratory Experiments and Exercises* (the Lab Manual). 2025 Edition
- Carbonless copy notebook (both sheets are perforated) (ISBN 9781506647401)
- Klein, David, *Organic Chemistry*. 5th ed. (TEXT), *Wiley*.

Required equipment: Safety goggles and appropriate laboratory attire as specified in the Lab Manual under "Lab Attire & Protective Clothing." Goggles must be brought to lab each week–Not left in your lab drawer.

Requirements: Completion of CHEM 2511 or 2611 and CHEM 2551 or 2651 with a passing grade. CHEM 2561 is intended to be taken concurrently with CHEM 2521. If you withdraw from CHEM 2521 you must also withdraw from CHEM 2561. In the event that you must withdraw from CHEM 2561, you must arrange a time with your instructor to check-out of your drawer. If you do not checkout of your drawer, a hold will be placed on your university account.

Canvas: Laboratory prelab assignments and supplemental materials will be available online through Canvas. If you have problems accessing the course, please contact the IT helpdesk (x1111). Typically, 2 attempts for each prelab assignment are allowed. **Prelabs must be completed prior to coming to lab.**

***Preparedness*:** The student must complete the notebook table, prelab exercise, and assigned reading prior to the lab period.

***Lab notebook*:** Please refer to the Lab Manual pages 11–13.

Missing Lab/Makeups: In the unlikely event that you are unable to attend lab, you need to let your lab instructor know immediately by email and/or phone. For an excused absence you will need to complete the experiment during a different time. If this is not possible, your laboratory score will be prorated based on your performance during the semester. For an unexcused absence, you will receive zero points for all the graded activities associated with that laboratory period. Three unexcused absences will result in immediate failure of the course.

Cancellation of In-person Instruction: If ONU must cancel in-person class meetings for weather or any other reason, an announcement will be released in the official RAVE email and text. The campus will be told that ONU will be moving to virtual instruction. For this class, you will likely be expected to complete course material asynchronously; please check Email & Canvas. Contact your instructor with any questions or concerns. You may be required to make up any classes cancelled.

Safety: Please be aware that the lab experiments you will complete require the use of toxic substances. Thus, prudent attention to safety practices should be followed at all times. Please make your instructor aware of any medical conditions that might affect your ability to safely complete these experiments.

Grading: The overall grade in the course will be determined by the following point breakdown

Possible Points

Lab Exams (2 x 30 pts each)	60
Canvas prelab assignments (12 x 5 pts each)	60
Lab reports/worksheets (13 x 20 pts each)	260
Lab Technique	20
Laboratory Final (week 15)	60
Total	**460 points**

Grading Scale	
A	88.0 – 100%
B	75.0 – 87.9%
C	65.0 – 74.9%
D	55.0 – 64.9%
Worse	0 – 54.9%

Common Course Policies

Ohio Northern University is dedicated to providing an equitable educational experience for all enrolled students. Universal course policies can be found at: https://my.onu.edu/registrars_office/policies. Specifically, the following relevant topics are addressed: Academic Dishonesty Policy; Academic Accommodations Policy; ONU Health and Safety Policy; Title IX Policy; and Cancellation of In-person instruction.

Use of Generative AI

In this course, we will be learning skills that you will need to be able to apply on your own before you can succeed with more advanced work in your career and future courses. You will also need these skills to spot and correct errors in the output of AI (which in my survey has been substantial). Therefore, AI should not be used as it will be detrimental for your development.

Course learning objectives

Upon successful completion of this course, students will be able to:

1. Employ safe practices in the laboratory.
2. Maintain a proper laboratory notebook.
3. Synthesize and purify simple organic molecules using basic lab techniques (distillation, recrystallization, extraction).
4. Identify the basic chemical concepts utilized in the choice of reaction conditions, techniques, and isolation methods.
5. Utilize spectroscopic data (MS, IR, ^{1}H NMR, ^{13}C NMR) to identify organic compounds.
6. Predict the outcome of organic reactions using a basic understanding of mechanisms and functional group reactivity.

Lab Date	Lab Experiment Title	Required Reading (Lab Manual/Text)
January 20,22	Check-in, Safety Lecture Combined Problem Spectroscopy Workshop Turn in a worksheet	p. 1–10 TEXT: Chap. 7–11
January 27,29	(Exp 12) Free Radical Bromination **A Canvas prelab is due** Turn in notebook pages	p. 85 TEXT: 521–545
February 3,5	(Exp 13) A Reaction with *N*-Bromosuccinimide **A Canvas prelab is due** Turn in notebook pages	p. 94 TEXT: 446–449
February 10,12	(Exp 14) Synthesis of a Secondary Alcohol via Reduction of a Ketone **A Canvas prelab is due** Turn in notebook pages	p. 101 TEXT: 618–623
February 17,19	(Exp 15) A Fast Diels-Alder Reaction **A Canvas prelab is due** Turn in notebook pages	106 TEXT: 852–859
February 24,26	(Exp 16) Esterification: Synthesis of Isoamyl Acetate **A Canvas prelab is due** Turn in notebook pages	p. 113 TEXT: 1077
March 3,5	(Exp 17) Iodination of Vanillin **A Canvas prelab is due** Turn in notebook pages **EXAM**	p. 117 TEXT: 934–936
March 10,12	Spring Break	–
March 17,19	(Exp 19 Part A) Synthesis of Lidocaine **AND** (Exp 18) Identification of an Unknown Compound **A Canvas prelab is due** Turn in individual Unknown worksheet	p. 126 and 142 TEXT: 1079
March 24,26	(Exp 19 Part B) Synthesis of Lidocaine (90 min reflux) **A Canvas prelab is due** Turn in packet and notebook pages	p. 142 TEXT: 1177
March 31, April 2	(Exp 20) Reductive Amination in Three steps **A Canvas prelab is due** Turn in notebook pages	p. 152 TEXT: 1180
April 7,9	(Exp 21) Knoevenagel Condensation **A Canvas prelab is due** Turn in notebook pages **EXAM**	p. 155 TEXT: 1121–1132
April 14,16	(Exp 22) Synthesis of Azo Dyes **A Canvas prelab is due** Turn in notebook pages	p. 161 TEXT: 1193–1196
April 21,23	No Lab-Honor's Day	–
April 28, 30	(Exp 23) Studying the Chemistry of Carbohydrates, Polarimetry **A Canvas prelab is due** Turn in individual worksheet	p. 166 TEXT: Chap. 24
May 5,7	Check-out **FINAL EXAM**	–

TEXT = Klein, 5th Edition