

CHEM 2551 (Sections 22 & 25) Syllabus

Laboratory for Organic Chemistry 1

FALL 2018



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Office Hours: Mon. & Wed. 11–1; Wed. and Fri. 10–12; Open door, or by appt. See the link to my office hours on my website above
Course: This course section meets on Tuesdays from 8-11 or 3–6 PM in Meyer 206 for prelabs. The lab room is Meyer 218.

Catalog Info: Chemistry 2551 is a 1 credit hour course. Course fulfills the Scientific Literacy distribution requirement.

Goals: The lab experiments in this course are designed to illustrate the practical implementation of the theories and concepts discussed in the CHEM 2511 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). 2018 Edition
- Klein, David, *Organic Chemistry*. 3rd ed. (TEXT), Wiley.

Required equipment: Safety goggles, a carbonless copy notebook, and appropriate laboratory attire as specified in the Lab Manual under “Lab Attire & Protective Clothing.”

Requirements: Completion of CHEM 1721 or 1821 with a passing grade. CHEM 2551 is intended to be taken concurrently with CHEM 2511. If you withdraw from CHEM 2511, you must also withdraw from CHEM 2551. In the event that you must withdraw from CHEM 2551, you must arrange a time with your instructor to check-out of your drawer. If you do not check-out of your drawer, a hold will be placed on your university account.

Moodle: Laboratory assignments and supplemental materials will be available online through the Moodle site (http://www.onu.edu/current_students). If you have problems accessing the course or Moodle, please contact the IT helpdesk (x1111).

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 (within 24 hours) 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. Counting an absence as excused or unexcused is at the discretion of your laboratory instructor. Three unexcused absences will result in immediate failure of the course.

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 | | Grading Scale | |
|---------------------------------------|------------|----------------------|--------------|
| Exams (2 x 45 pts each) | 90 | A | 88.0 – 100% |
| Worksheets/Exercise (7 x 20 pts each) | 140 | B | 75.0 – 87.9% |
| Prelab assignments (12 x 5 pts each) | 55 | C | 65.0 – 74.9% |
| Notebook pages (5 x 10 points each) | 50 | D | 55.0 – 64.9% |
| Technique Grade | 15 | Worse | 0 – 54.9 |
| Laboratory Final Exam (week 15) | <u>60</u> | | |
| Total | 410 | | |

Academic Misconduct: The University expects its students to conduct themselves in a dignified and honorable manner as mature members of the academic community and assumes that individually and collectively they will discourage acts of academic dishonesty. The University also expects cooperation among administrators, faculty, staff, and students in preventing acts of academic dishonesty, in detecting such acts, reporting them, and identifying those who commit them, and in providing appropriate punishment for offenders. The University Code of Academic Student Conduct is found in Appendix C of the Student Handbook:

http://www.onu.edu/student_life/student_conduct/student_handbook

Academic misconduct is a serious offense and may include a number of different infractions such as (but not limited to):

- Copying from another student's exam or other assignment
- Possessing note sheets that are not permitted by the instructor during exams/quizzes/etc.
- Copying work from a previous student's exam or other assignment
- Falsifying data on a laboratory experiment

When detected, several actions may occur, separately or concurrently. These include but are not limited to:

- Incident report filed with the offices of the Deans of your individual college and Arts & Sciences
- Failure for the assignment in question
- Failure for the course
- Placement of an Academic Dishonesty hold on your account
- Suspension from the University
- Dismissal from the University

Special Accommodations Policy: Students requiring particular accommodations because of physical and/or learning disabilities should contact their Dean's office prior to or during the first week of classes. For additional information, see: http://www.onu.edu/student_life/disability_services

| Date | Lab Experiment Title | Required Reading (Lab Manual/Text) |
|---------------------------|---|---------------------------------------|
| August 21, 23 | Safety lecture, Check-in, Synthesis of Acetaminophen Turn in notebook pages | p. 17 TEXT: 87 |
| August 28, 30 | Recrystallization Turn in notebook pages | p. 21 TEXT: 38 |
| September 4, 6 | TLC A paper prelab is due An ONLINE prelab is due Turn in notebook pages | p. 29 TEXT: 28-30 |
| September 11, 13 | Measurement of Acid Strength An ONLINE prelab is due Turn in individual worksheet next week | p. 37 TEXT: 93-123 |
| September 18, 20 | Melting Point An ONLINE prelab is due Turn in notebook pages | p. 47 |
| Sept 25, 27 | Infrared Spectroscopy, EXAM 1 An ONLINE prelab is due A worksheet (handed out in lab) will be due | p. 53 TEXT: 608-622 & see index |
| October 2, 4 | Simple and Fractional Distillation An ONLINE prelab is due Turn in the worksheet next week | p. 55 |
| October 9, 11 | Fall Break—No Lab | |
| October 16, 18 | Nucleophilic Substitution Reactions An ONLINE prelab is due Turn in exercise | p. 65 TEXT: 276-289, 305-314 |
| October 23, 25 | Extraction I A paper prelab is due An ONLINE prelab is due | p. 73 TEXT: 1016 |
| October 30, November 1 | Extraction II A paper prelab is due Turn in worksheet packet | <i>ibid</i> |
| November 6, 8 | 13C & DEPT NMR Spectroscopy, EXAM 2 An ONLINE prelab is due Turn in individual worksheet | p. 93 TEXT: 685-690 |
| November 13, 15 | Proton NMR: Coupling Constants (J_{ab}) An ONLINE prelab is due Turn in individual worksheet | p. 101 TEXT: 652-684 |
| November 20, 22 | Thanksgiving Break—No Lab | |
| November 27, 29 | Dehydration of Methylcyclohexanol A ONLINE prelab is due Turn in notebook pages | p. 111 TEXT: 935-936 |
| December 4, 6 | Turn in notebook pages FINAL Exam Check Out | |

TEXT = Klein, 2nd Edition