

Updated 07/18/2023



WACO, TEXAS

**COURSE SYLLABUS
AND
INSTRUCTOR PLAN**

Organic Chemistry II

Chem 2425_001

Larry Benton

NOTE: This is a 16-week course.
NOTE: This is a Face-to-Face course.

Chem 2425-001
Organic Chemistry II

Course Description:

Advanced principles of organic chemistry will be studied, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Polymer chemistry will be reviewed. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS.

Prerequisites and/or Corequisites:

Prerequisite: CHEM 2423 with a minimum grade of C. Semester Hours 4 (3 lec/4 lab)

Course Notes and Instructor Recommendations:

Students are required to have a laboratory notebook. The correct notebook is available in the bookstore. Details will be discussed first day of class. In order to excel in this class, expect to spend 5 to 6 hours per week at a minimum completing homework assignments, and reviewing material covered in the lectures associated with this class.

Instructor Information:

Instructor Name: Larry D. Benton
MCC E-mail: lbenton@mclennan.edu
Office Phone Number: 254-299-8195
Office Location: Science Building Room 310
Office/Teacher Conference Hours: Monday, Wednesday, and Thursday 4-6pm
Other Instruction Information:

Required Text & Materials:

Title: Organic Chemistry
Author: Bruice
Edition: Eighth Edition
Publisher: Pearson
ISBN: 9780134042282

MCC Bookstore Website: <http://www.mclennan.edu/bookstore/>

Methods of Teaching and Learning:

This class consists of 1.5 hours per week of lecture and 3.75 hours per week of laboratory experimentation. The lecture portion of the class will be a mixture of PowerPoint presentations, problems worked on the whiteboard, and open discussion. Problems worked will be real world chemical problems that are solved to explore the nature of organic chemical mechanisms. Homework problems will be assigned. A research paper based on a lab experiment and poster will be required. The research will be presented at Scholars Day for the Spring 2024 semester. Students will find assignments and instructor communications on Brightspace.

The laboratory portion of the class is conducted with each student experiencing hands on experimentation in the lab. The student's review of the lab experiment prior to execution will be required, therefore, students should be prepared to be quizzed over the lab experiment prior to execution of the experiment. Students may be required to work individually or in groups. Learning to work cooperatively in the laboratory setting is an important aspect of the lab.

Course Objectives and/or Competencies:

Lecture:

Upon successful completion of this course, students will:

1. Correlate molecular structure with physical and chemical properties of aliphatic and aromatic organic molecules.
2. Predict the mechanism and outcome of aliphatic and aromatic substitution and elimination reactions, given the conditions and starting materials.
3. Predict the chirality of reaction products based on enantiomeric and diastereomeric relationships.
4. Describe reaction mechanisms in terms of energetics, reaction kinetics, and thermodynamics.
5. Use spectroscopic techniques to characterize organic molecules and subgroups.
6. Emphasis is placed on synthesis of organic chemicals reaction pathways and reaction mechanisms.

Lab:

Upon successful completion of this course, students will:

1. Perform chemical experiments, analysis procedures, and waste disposal in a safe and responsible manner.
2. Utilize scientific tools such as glassware and analytical instruments to collect and analyze data.
3. Identify and utilize appropriate separation techniques such as distillation, extraction, and chromatography to purify organic compounds.
4. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
5. Correlate molecular structure with physical and chemical properties of aliphatic and aromatic organic molecules.
6. Predict the mechanism and outcome of aliphatic and aromatic substitution and elimination reactions, given the conditions and starting materials.
7. Predict the chirality of reaction products based on enantiomeric and diastereomeric relationships.
8. Describe reaction mechanisms in terms of energetics, reaction kinetics, and thermodynamics.
9. Use spectroscopic techniques to characterize organic molecules and subgroups.

Course Attendance/Participation Guidelines:

If a student is not in attendance in accordance with the policies/guidelines of the class as outlined in the course syllabus as of the course census date, faculty are required to drop students from their class roster prior to certifying the respective class roster. A student's financial aid will be re-evaluated accordingly and the student will only receive funding for those courses attended as of the course census date.

Before the 60% point of the semester, a student who is absent for 25% or more of a face-to-face or blended course or who misses 25% or more of assigned work for an online course will be withdrawn from the course with a grade of W. A student may also request to be withdrawn with a grade of W before the 60% point of the semester. After the 60% point of the semester, the student may request to be withdrawn if the student is passing, or be assigned the final grade earned at the end of the semester after grades have been updated to reflect missing work.

Make up labs are not available.

Course Outline or Schedule:

Week 1 Review Instructor Plan,
Week 2 Chapter 13
Week 3 Chapter 13, 14
Week 4 Test 1
Week 5 Chapter 8
Week 6 Chapter 9
Week 7 Chapter 10
Week 8 Chapter 11 (Synthesize Ferrocene in Lab)
Week 9 Chapter 12
Week 10 Chapter 15
Week 11 Chapter 16
Week 12 Chapter 17
Week 13 Chapter 18
Week 14 Chapter 19, Chapter 27
Week 15 Chapter 27
Week 16** Test 3, Make Up Exam

** - All lab notebooks, lab reports will not be accepted after Tuesday of this week.

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Course Grading Information:

Your course grade will be based on the points received from the exams, the final, the lab grades, class participation (attendance and involvement in class) and the periodic exercise problems. There will be a take home exam after each chapter (100 points per exam). Four in class exams will be given. A single comprehensive Make-up exams will be offered the last day of the semester. The final will be a 100 point comprehensive final and will be given on the final exam date. There will not be a makeup test for the final exams. There will not be homework exercise problems, although suggested problems will be provided to the student. The lab grade will consist of a required typed report for each lab, and the lab notebook that will be kept. The complete lab report and the lab notebook are due at the beginning of class on the Thursday after the lab work is performed. Further information on the content and format for the lab book and the lab report will be discuss during the first day of lab. The lab notebook will be grade based on the outlines provide to the student based on FDA and EPA requirements for current Good Laboratory Practices and current Good Manufacturing Practices (cGLP and cGMP).

The Research Project will require planning a method to synthesize an organic compound which will be randomly drawn from a pool of compounds, synthesizing the compound, characterizing the compound and the synthetic method, and presenting the work in a formal poster session scheduled to be held as MCC Scholars' Day.

Your grade will be calculated using the following breakdown:

Take Home Exams	20%
In-class Exams	40%
Lab Notebook	10%
Lab Report	10%
Research Project	10%
Finals Exam	10%

Your course letter grade will be based on the following scale: 90% or more of the total points will guarantee a grade of "A"; 80% or more guarantees "B"; 70% or more guarantees "C"; 60% or more guarantees "D"; below 60% of the total may result in an "F".

Late Work and Make Up Work Policies:

Make-up labs are not available. Attendance policy will follow McLennan Community College attendance policy. Review MCC policy on attendance at the link below.

Student Behavioral Expectations or Conduct Policy:

If there is any evidence of cheating on any homework, quiz, test, or final, you will receive a zero for that item and cannot make it up or replace it and it cannot be dropped. Tobacco and tobacco product use is prohibited inside college buildings. This includes smokeless products as well as cigarettes, pipes, and cigars.

Safety equipment must be worn at all times: long pants/skirt (covering at least the top half of the calf), apron or lab coat, hair back, safety goggles, and, if necessary, gloves. No open-toed shoes, shoes with holes in them, shoes that leave the top of the foot exposed, hats of any sort, shorts, food or drink are allowed. Safety is the MOST important part of lab. Students must abide by the general safety regulations as described in the chemistry 1411 laboratory manual.

Please read and abide to the General Conduct Policy in the Highlander Guide.

[Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)

(<https://www.mclennan.edu/highlander-guide/policies.html>)

Click on the link above for the college policies on attendance and absences. Your instructor may have additional guidelines specific to this course.

10/09/2023



ACADEMIC RESOURCES/POLICIES

Accommodations/ADA Statement:

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit www.mclennan.edu/disability

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

disabilities@mclennan.edu (254)299-8122
Room 319, Student Services Center

Title IX:

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the Title IX Coordinator at titleix@mclennan.edu or by calling, Dr. Claudette Jackson, (Accommodations/Title IX) at (254) 299-8465. MCC employees are mandatory reporters and must report incidents immediately to the Title IX Coordinator. Individuals may also contact the MCC Police Department at (254) 299-8911 or the MCC Student Counseling Center at (254) 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>

Additionally, Title IX provides rights and protections for pregnant and newly parenting students. Go to McLennan's Title IX webpage at www.mclennan.edu/titleix/. It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

Student Support/Resources:

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

Academic Support and Tutoring is here to help students with all their course-related needs. Specializing in one-on-one tutoring, developing study skills, and effectively writing essays. Academic Support and Tutoring can be found in the Library and main floor of the Learning Commons. This service is available to students in person or through Zoom. You can contact the Academic Support and Tutoring team via Zoom or email (ast@mclennan.edu) by going to our website (<https://www.mclennan.edu/academic-support-and-tutoring/>)

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact either MCC CREW – Campus Resources Education Web by calling (254) 299-8561 or by emailing crew@mclennan.edu or a Success Coach by calling (254) 299-8226 or emailing success@mclennan.edu.

Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff. To schedule an appointment, go to <https://calendly.com/paulannespantry-mcc/15min>.

The CREW, Success Coaches, and Paulanne's Pantry are all located on the second floor of the Student Services building in Success Coaching Services.

MCC Foundation Emergency Grant Fund:

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an

emergency grant fund that may be able to assist you. Please go to <https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html> to find out more about the emergency grant. The application can be found at https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf

MCC Academic Integrity Statement:

Please view our [Academic integrity statement](#) for more information about academic integrity, dishonesty, and cheating. The unauthorized use of artificial intelligence (AI) for classwork can be a violation of the College's General Conduct Policy. Whether AI is authorized in a course and the parameters in which AI can be used in a course will be outlined by each instructor.

Minimum System Requirements to Utilize MCC's D2L|Brightspace:

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/Faculty-and-Staff-Commons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

Minimum Technical Skills:

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Backup Plan for Technology:

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

Email Policy:

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to www.mclennan.edu/studentemail.

Instructional Uses of Email:

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email Helpdesk@mclennan.edu for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](#)
- [Email Setup for Androids](#)

Forwarding Emails:

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support](#) or email helpdesk@mclennan.edu.

Disclaimer:

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.