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MCLENNAN COMMUNITY COLLEGE

WACO, TEXAS

COURSE SYLLABUS

AND

INSTRUCTOR PLAN

Organic Chemistry I

Chem 2423_001

Larry D. Benton

NOTE: This is a 16-week course.

Organic Chemistry I

Chem 2423_ 001

Course Description:

Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of 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. Laboratory activities will reinforce fundamental principles of organic chemistry, including the structure, bonding, properties, and reactivity of 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 mechanism, functional groups, and synthesis of simple molecules. Methods for the purification and identification of organic compounds will be examined. This course is intended for students in science or pre-professional programs.

Prerequisites and/or Corequisites:

CHEM 1411 and 1412 with a grade of C or better.

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. Student much also provide their own goggles. It is highly recommended that the student purchase a molecular modeling kit.

Instructor Information:

Instructor Name: Larry D. Benton
MCC Email: lbenton@mclennan.edu
Office Phone Number: 254-299-8195
Office Location: Science Building Room 310
Office/Teacher Conference Hours: After Lab on Tuesdays and After Class on Thursday
Other Instruction Information:

Required Text & Materials:

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

Title: Macroscale and Microscale Organic Experiments
Author: Williamson / Masters
Edition: Seventh Edition
Publisher: Cengage
ISBN: 9781305577190 (Hardcopy) 9780357686850 (eTextbook)

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

A laboratory notebook and safety goggles, both available at the bookstore are required. An alternative for safety goggles that many students have found to be very comfortable is the Uvex Stealth OTG Safety Goggles that can be purchased from major online sites.

Methods of Teaching and Learning:

This class consists of 3 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. Students will find assignments and instructor communications on Bright Space.

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 will work individually.

Course Objectives and/or Competencies:

Upon successful completion of this course, students will:

1. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, chirality, conformation, and functionality.
2. Identify organic molecules using appropriate organic nomenclature.
3. Describe the principle reactions for syntheses of molecules, ions, and radicals.
4. Describe organic reactions in terms of radical and ionic mechanisms.
5. Describe the use of spectroscopic data to determine the structure of organic molecules.
6. Formulate appropriate reaction conditions for the synthesis of simple organic molecules.

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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. Demonstrate a basic understanding of stereochemistry.
6. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, chirality, conformation, and functionality in laboratory reports.
7. Identify organic molecules using appropriate organic nomenclature in laboratory reports.
8. Perform organic syntheses of molecules.
9. Describe organic reactions in terms of radical and ionic mechanisms in laboratory reports.
10. Use spectroscopic data to determine the structure of organic molecules.
11. Formulate appropriate reaction conditions for the synthesis of simple organic molecules.

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.

Attendance policy will follow McLennan Community College attendance policy. Review MCC policy on attendance at the link below.

Course Outline or Schedule:
All reports, and lab notebooks will not be accepted after 5 PM December 3, 2019.

Week 1	Introduction to class, Chapter 1
Week 2	Chapter 1 and 2
Week 3	Chapter 2
Week 4	Test 1 and Chapter 3
Week 5	Chapter 3 and 4
Week 6	Chapter 4
Week 7	Test 2 Chapter 5
Week 8	Chapter 5
Week 9	Chapter 5 and 6
Week 10	Chapter 6
Week 11	Test 3 Chapter 7
Week 12	Chapter 7
Week 13	Chapter 7 and 8
Week 14	Chapter 8, Thanksgiving Holiday
Week 15	Test 4, Make Up Exam.
Week 16	Final Exam

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 chapter quiz for each chapter (100 points per exam). Four In-Class exams will be

given over the material covered. The final will be a 100 point comprehensive final and will be given on the final exam date. There will be a makeup test for the last wqeek of the semester. The lab grade will consist of a required typed report for each lab, and the lab notebook that will be kept. The lab reports are due the lab following the week that the lab 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 graded 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) Your grade will be calculated using the following breakdown:

Chapter Quizzes	**20%**
In-class Exams	**40%**
Final Exam	**10%**
Lab Notebook	**15%**
Lab Report	**15%**

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 unless there is an excused absence.

Student Behavioral Expectations or Conduct Policy:
Students are encouraged to visit with the instructor if topics covered in the course are not understood. Often, one on one tutoring will help the student grasp the subject matter. Students are expected to have critically read the chapter to be covered in lecture prior to attending class. Questions on the subject matter during class are welcomed and encouraged.
Students are expected to be punctual for lecture and lab classes. Students are expected to observe all safety rules in the laboratory and maintain a clean workspace in the lab. Horseplay and unsafe habits in the laboratory will be grounds for ejection from the lab. Repeated offences will result in the student being dropped from the course. Review MCC Academic Integrity Statement at the link below.

Click Here for the MCC Attendance/Absences Policy
(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.