



THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

Department of Chemistry

CHE 203 – Organic Chemistry I

COURSE PARTICULARS

Course Code: CHE 203

Course Title: Organic Chemistry I

No. of Units: 2

Course Duration: one hour of theory three hours of practical per week for 15 weeks.

Status: Compulsory

Course Email Address: che203@gmail.com

Course Webpage: <http://www.fwt.futa.edu.ng/courseschedule.php?coursecode=CHE%51513>

Prerequisite: CHE 101, CHE 102.

COURSE INSTRUCTORS

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COURSE DESCRIPTION

This course is an important course for the chemistry students, it is meant to expose the student to the interesting chemistry of carbon in organic chemistry. The topics to cover include: Carbon in Organic chemistry, the concept of hybridization, structures and shapes of organic compounds, factors affecting organic reactions, bond breaking during organic reactions, types of reactions simple treatments of functional groups and analysis to identify functional groups.

COURSE OBJECTIVES

The objectives of this course are to:

- Introduce carbon to the student as most unique of the elements on the periodic table. The uniqueness of carbon is as a result of catenation and isomerism. The student can link chemical properties with the functional groups of a compound.
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COURSE LEARNING OUTCOMES / COMPETENCIES

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

(Knowledge based)

- Relate structure to the reactivity of organic compounds.
- Explain the ability of carbon to produce so many compounds.
- Explain the reactions of functional groups.

(Skills)

- Through experiments identify functional groups
- Prepare derivatives of common functional groups

GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Practicals	20%
Test(s)	20%
<u>Final Examination</u>	<u>60%</u>
<u>TOTAL</u>	<u>100%</u>

GENERAL INSTRUCTIONS

Attendance: It is expected that every student will be in class for lectures and also participate in all practical exercises. Attendance records will be kept and used to determine each person's qualification to sit for the final examination. In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with any of the lecturer, indicating the reason for the absence.

Academic Integrity: Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances are prohibited. You are not allowed to make copies of another person's work and submit it as your own; that is plagiarism. All cases of academic dishonesty will be reported to the University Management for appropriate sanctions in accordance with the guidelines for handling students' misconduct as spelt out in the Students' Handbook.

Assignments and Group Work: Students are expected to submit assignments as scheduled. Failure to submit an assignment as at when due will earn the student zero for that assignment. Only under extenuating circumstances, for which a student has notified any of the instructors in advance, will late submission of assignments be permitted.

Code of Conduct in Lecture Rooms and Laboratories: Students should turn off their cell phones during lectures. Students are prohibited from engaging in other activities (such as texting, watching videos, etc.) during lectures. Food and drinks are not permitted in the laboratories.

READING LIST

1 Finar I.L. (2011) Organic Chemistry. 9th Impression.965pp Dorling Kinersley (India)

2 Owolabi B. J. Olarinoye N.O. Organic Chemistry: The Fundamentals.

Legend

- 1- Available in the University Library
- 2- Available in Departmental/School Libraries
- 3- Available on the Internet.
- 4- Available as Personal Collection
- 5- Available in local bookshops.

COURSE OUTLINE

Week	Topic	Remarks
1	Introduction to the chemistry of carbon. Its power for catenation. Electronic arrangement of the carbon. Hybridization.	The element Carbon is unique for the arrangement of its electrons which allows for chain elongation in four different directions and indefinitely.
2 & 3	Hybridization. (SP^3 , SP^2 , SP)The tetrahedral carbon. Conformations.	The tetrahedral carbon
4&5	<ul style="list-style-type: none"> • Factors affecting organic reactions. Inductive, mesomeric, electromeric, steric effects. • Types of bonds, bond breaking during reactions. • Types of reactions, substitution elimination, addition, rearrangements. 	Students will be led to see functional groups as the factors determining the physical and chemical properties of organic compounds.
6	<ul style="list-style-type: none"> • Leaving groups 	The basicity of a functional group determines its leaving ability during chemical reactions..
7 & 8	<ul style="list-style-type: none"> • Functional groups, preparations, reactions. • Alkenes. Simple methods of preparations and reactions. 	Students will be required to test and identify compounds with multiple bonds .
		MID-SEMESTER TEST
9 & 10	<ul style="list-style-type: none"> • Haloalkanes and alcohols .Simple laboratory methods of preparation and reactions. 	Conversion of Haloalkanes to alcohols and tests to detect the presence off halo groups in a compound

11 & 12	<ul style="list-style-type: none"> The carbonyls: Preparations and reactions 	Practicals include the use of the carbonyls to detect their functional groups.
13 & 14	<ul style="list-style-type: none"> Carboxylic acids preparations. Preparation of derivatives of Carboxylic acids. 	The student conducts tests on the carboxylic acid and prepares derivatives.
15	REVISION	This is the week preceding the final examination. At this time, evaluation will be done to assess how far the students' expectations for the course have been met.