



Course Specifications

Course Title:	Organic Chemistry 1
Course Code:	2042105-3
Program:	Bachelor in Chemistry
Department:	Department of Chemistry
College:	College of Sciences
Institution:	Taif University

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A. Course Identification

1. Credit hours: 3 (2 Theoretical, 1 Lab)
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 3 rd Level/ 2 nd Year
4. Pre-requisites for this course (if any): General Chemistry 1 (204101-4)
5. Co-requisites for this course (if any): NA

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2 Theoretical and 3 Practical hours/ Week	100 %
2	Blended	-	-
3	E-learning	-	-
4	Distance learning	-	-
5	Other	-	-

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	45
3	Tutorial	-
4	Others (specify)	-
	Total	75

B. Course Objectives and Learning Outcomes

1. Course Description

The course is considered as the backbone of organic chemistry, it concerns with the classification of organic compounds, structure of aliphatic organic compounds and their functional groups. In addition, the preparation methods and mechanistic chemical reactions are also included.

2. Course Main Objective

The course aims to enrich students with different concepts and fundamentals of aliphatic organic compounds.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding:	
1.1	State the nomenclature of different aliphatic organic compounds (IUPAC system)	K1
1.2	Memorize the methods of preparation and reactions of some aliphatic organic compounds	K2
2	Skills:	
2.1	Explain the features that must be present in a compound to be reactive to	S1

CLOs		Aligned PLOs
	various reagents	
2.2	Apply rules to design and synthesis of aliphatic organic compounds	S2
3	Values:	
3.1	Act in a manner consistent with the ethical standards relative to group learning work.	V2

C. Course Content

No	List of Topics	Contact Hours
1	Classification of organic compounds; Structure and bonding; hybridization.	2
2	Alkanes and cycloalkanes: Definition (alkanes- cycloalkanes); Drawing structures; Nomenclature; Preparation and reactions of alkenes.	4
3	Functional groups: Recognition of functional groups; Aliphatic and aromatic functional groups; Nomenclature of compounds with functional groups; Primary, secondary; tertiary and quaternary nomenclature.	4
4	Alkenes and Alkynes: Nomenclature; Preparations and reactions.	2
5	Carboxylic acids and their derivatives: Structure and Properties; Preparations; Reactions of Carboxylic Acids and their derivatives.	4
6	Alkyl halides: Preparation and Physical Properties; Reactions.	4
7	Alcohols and thiols: Preparation; Reactions of Alcohols and Thiols.	2
8	Ether, Epoxide and Thioether: Preparation; Reactions of Ethers; Epoxides and Thioethers.	4
9	Amines: Preparation; properties of amines and nitriles and their chemical reactions.	2
10	Nitriles: Preparation; properties of amines and nitriles and their chemical reactions.	2
Total		30

Lab Content

No	List of Topics	Contact Hours
1	Introduction to Organic Chemistry Lab: Safety, Instrumentations, Solvents purification (Distillation, filtration, extraction and crystallization). Melting point and boiling point determination. Chromatographic separation methods.	3
2	Qualitative identification of Alcohols.	3
3	Qualitative identification of Aldehydes and ketones (formaldehyde, acetaldehyde, acetone).	6
4	Qualitative identification of aliphatic carboxylic acids (oxalic acid, tartaric acid, citric acid)	6
5	Qualitative identification of aromatic carboxylic acids (benzoic acid, phthalic acid, salicylic acids)	6
6	Qualitative detection of aliphatic carboxylic acid salts (sodium salts and ammonium salts)	3
7	Qualitative detection of aromatic carboxylic acid salts (sodium salts and ammonium salts)	3
8	Qualitative detection of monosaccharides (glucose, fructose).	6

9	Qualitative detection of disaccharides (maltose, lactose, starch, sucrose).	3
10	General Scheme on the qualitative detection of an unknown solid organic materials	6
Total		45

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	State the nomenclature of different aliphatic organic compounds (IUPAC system).	Lecture	Written exam
1.2	Memorize the methods of preparation and reactions of some aliphatic organic compounds.	Lecture	Written exam
2.0	Skills		
2.1	Explain the features that must be present in a compound to be reactive to various reagents.	Discussion	Homework Assignments
2.2	Apply rules to design and synthesis of aliphatic organic compounds.	Problem-Solving	Practical tasks and Exam
3.0	Values		
3.1	Act in a manner consistent with the ethical standards relative to group learning work.	Collaborative Learning	Individual presentations

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework Assignments (Electronic)	Throughout Semester	5%
2	Individual presentations	Throughout Semester	5%
3	Periodical Exam	7/8	20%
4	Mid Term Exam	11/12	10%
5	Practical tasks	Throughout Semester	15%
6	Final practical Exam	15	5%
7	Final exam	16	40%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Commitment to the rules of the Academic Advising Department at the university in accordance with the academic guidance manual approved by the university and the attached forms, there are different arrangements made by teaching staff to support student consultations including;

- Office hours: 8 hours per a week for each academic member.
- Academic guidance: an academic member has a number of students to guide them throughout degree journey.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	<ul style="list-style-type: none"> • Organic Chemistry, Second Edition, G. L. Patrick (2005). Taylor & Francis Group (NY, USA), Latest Edition. ISBN: 9781859962640.
Essential References Materials	<ul style="list-style-type: none"> • Organic Chemistry, Paula Yurkanis Bruice (2004). Pearson Education Inc. (India), Latest Edition. ISBN: 978-0-321-80322-1.
Electronic Materials	<ul style="list-style-type: none"> • Saudi Digital Library (SDL)
Other Learning Materials	<ul style="list-style-type: none"> • Learning Management System (Blackboard) • Computer programs for graphing organic compounds and chemical reactions (Chem draw , Chem sketch)

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> • Lecture hall with 100 seats. • Equipped Lab with essential instrumentations.
Technology Resources (AV, data show, Smart Board, software, etc.)	<ul style="list-style-type: none"> • Computer and data show with Wi-Fi access. • ChemDraw and Chem sketch software.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of Teaching and assessment	Students	Survey (indirect method)
Extent of achievement of course learning outcomes	Program leader	Reports (Direct method)
Quality of learning resources	Peer referees Students	Reports (Direct method) Survey (indirect method)

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department Council/ Quality assurance committee
Reference No.	7-3-1445
Date	27/2/1445 HJ 12/09/2023 G


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