



## Course Specifications

<b>Course Title:</b>	<b>Modern Trends in Chemistry</b>
<b>Course Code:</b>	<b>2044215-2</b>
<b>Program:</b>	<b>Bachelor in Chemistry</b>
<b>Department:</b>	<b>Department of Chemistry</b>
<b>College:</b>	<b>College of Sciences</b>
<b>Institution:</b>	<b>Taif University</b>

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## A. Course Identification

<b>1. Credit hours:</b> 2 (Theoretical)
<b>2. Course type</b> 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"/>
<b>3. Level/year at which this course is offered:</b> 7 <sup>th</sup> Level / 4 <sup>th</sup> Year
<b>4. Pre-requisites for this course (if any):</b> NA
<b>5. Co-requisites for this course (if any):</b> NA

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	24	80%
2	Blended	6	20%
3	E-learning	-	-
4	Distance learning	-	-
5	Other	-	-

### 7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	24
2	Laboratory/Studio	-
3	Tutorial	-
4	Others (Blended)	6
	<b>Total</b>	<b>30</b>

## B. Course Objectives and Learning Outcomes

### 1. Course Description:

The course describes an introduction to modern chemistry trends, chemistry technology, sustainable chemistry, renewable energy, energy investment and natural resources, green chemistry.

### 2. Course Main Objective

The main purpose of this course is to introduce students to modern trends in chemistry.

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
<b>1</b>	<b>Knowledge and Understanding:</b>	
1.1	Identifying renewable energy sources	K2
1.2	Determine the role of sustainable chemistry in industrial applications	K3
<b>2</b>	<b>Skills:</b>	
2.1	Explain waste management methods and analysis	S2
2.2	Utilize chemical concepts in environmental applications	S3
<b>3</b>	<b>Values:</b>	

CLOs		Aligned PLOs
3.1	Participate in the development of the performance of work teams.	V1

## C. Course Content

No	List of Topics	Contact Hours
1	Introduction to modern chemistry trends	2
2	Chemistry Technology	2
3	Green Chemistry	4
4	Renewable Energy	4
5	Different types of electrodes	2
6	Waste Management	2
7	Investing in energy and natural resources	2
8	Research and studies in the field of modern chemistry trends (I)	4
9	Research and studies in the field of modern chemistry trends (II)	4
10	Research and studies in the field of modern chemistry trends (III)	4
<b>Total</b>		<b>30</b>

## D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding</b>		
1.1	Identifying renewable energy sources	Lecture	Written exam
1.2	Determine the role of sustainable chemistry in industrial applications	Lecture	Written exam
<b>2.0</b>	<b>Skills</b>		
2.1	Explain waste management methods and analysis	Discussion	Homework Assignments
2.2	Utilize chemical concepts in environmental applications	Discussion	Homework Assignments
<b>3.0</b>	<b>Values</b>		
3.1	Participate in the development of the performance of work teams.	Collaborative Learning	Individual presentations

### 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework Assignments (Electronic)	Throughout Semester	15%
2	Individual presentations	Throughout Semester	5%
3	Periodical Exam	7/8	15%
4	Mid Term Exam	11/12	15%
5	Final exam	16	50%

\*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

<b>Required Textbooks</b>	<ul style="list-style-type: none"><li>• <a href="#">Recycling and Reuse of Materials and Their Products</a>, Yves Grohens, S. Kishor kumar, Abderrahim Boudenne, Yang Weimin (2012), Latest Edition. Apple Academic Press (USA). ISBN 9781774632598.</li><li>• <a href="#">Green Chemistry Fundamentals and Applications</a>, Suresh C. Ameta, Rakshit Ameta (2013), Latest Edition. Apple Academic Press (USA). ISBN: 9781774632697.</li></ul>
<b>Essential References Materials</b>	<ul style="list-style-type: none"><li>• <a href="#">Renewable-Energy-and-Sustainable-Development</a>, Janet L. Sawin and Freyr Sverrisson (2016)-Conference article. World Future Council (Germany).</li></ul>
<b>Electronic Materials</b>	<ul style="list-style-type: none"><li>• <a href="#">Saudi Digital Library (SDL)</a></li></ul>
<b>Other Learning Materials</b>	----

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	A classroom with movable tables and chairs conducive to group discussion and teamwork.
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Data show, smart board
<b>Other Resources</b> (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

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



Chemistry Program