

## Faculty of Engineering & Technology

### Chemistry 1

#### Information :

**Course Code :** CHM 151

**Level :** Undergraduate

**Course Hours :** 2.00- Hours

**Department :** Faculty of Engineering & Technology

#### Instructor Information :

Title	Name	Office hours
Lecturer	Aya Hanfay Reda Hanfy Mohamed	40
Teaching Assistant	Ahmed Abdelfattah Abdelaziz Abdelfattah	16
Teaching Assistant	Mohamed Osama Mohamed Abbas	

#### Area Of Study :

By the end of the course the students will be able to:

- Establishing a scientific base for the students in the field of Engineering Chemistry.
- Providing the student with knowledge about the effect of the environment.
- Know the relation between the medium and the material.
- Acquiring scientific bases which qualify the student to control dominate and protect the used material.
- Enabling the student to solve industrial problems in a scientific method.
- Studying the main problems of water pollution.
- Studying the general idea about construction materials and cement chemistry.
- Knowing the chemistry of Environmental pollution.

#### Description :

Gases, Mass balance and heat balance in combustion processes of fuels, Solutions, Dynamic equilibrium in physical and chemical processes, Electrochemistry and corrosion, Water treatment , Building materials, Environmental engineering Selected chemical industries : fertilizers, dyes, polymers, sugar, petrochemicals, semi-conductors, Oil and fats, Industrial systems.

#### Course outcomes :

##### a. Knowledge and Understanding: :

1 -	a1- Define Gasses.
2 -	- Define the Properties of Liquids and Solids.
3 -	- Define the Thermo-chemistry and Thermodynamics.
4 -	- Define Electrochemistry and Corrosion of Metals.
5 -	- Define Water and its Treatment.
6 -	- Define the Chemistry of Polymers and Fuel Combustion.
7 -	- Define all types of solutions and their properties.

##### b. Intellectual Skills: :

1 -	- Establish a scientific base for the students in the field of Engineering Chemistry.
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2 -	- Provide the student with knowledge about the effect of the environment on the material.
3 -	- Solve industrial problems in a scientific method.
4 -	Study the main problems of water pollution.
5 -	- Study the construction materials and cement chemistry.

**c. Professional and Practical Skills: :**

1 -	- Apply knowledge of chemistry with the different engineering fields.
2 -	- Fix the knowledge of Chemistry to solve engineering problems.

**d. General and Transferable Skills: :**

1 -	d1- Work effectively in a team.
2 -	d2- Develop the skills which are related to creative thinking, problem solver, and teamwork in different fields.

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Gasses State	8	4	4
The Properties of Liquids and Solids	8	4	4
Thermo-chemistry and Thermodynamics	12	6	6
Electrochemistry and Corrosion of Metals	8	4	4
Water and its Treatment	4	2	2
Chemistry of Cement	4	2	2
Polymers Chemistry	4	2	2
Fuel Combustion	4	2	2
Solutions and their properties	8	4	4

**Teaching And Learning Methodologies :**

~ Lectures
~ Tutorial
~ Class discussions and activities
~ Homework and self-study

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Assignments and quizzes	10.00	3	Assignment 1 . Á Á
Attendance and Participation	5.00	1	
Final-term Exam	40.00	16	Written Exam
First Exam	20.00	6	Written Exam
Second Exam	20.00	9	Written Exam
Student Project	5.00	13	

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**Course Notes :**

Course notes and Handouts

**Recommended books :**

Bardy and Holum, " The Study of Matter and Its Changes ", 4th Edition, 2005.