

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
Associate Professor	Amr Osman Mohamed Osman Habib	21
Associate Professor	Amr Osman Mohamed Osman Habib	21
Assistant Lecturer	Aya Hanfay Reda Hanfy Mohamed	22
Assistant Lecturer	Aya Hanfay Reda Hanfy Mohamed	22
Teaching Assistant	Ahmed Abd El Fattah Abd El Aziz Abd El Fattah	
Teaching Assistant	Romisaa Gamal Mahmoud Abdelrhman	

Area Of Study :

Overall aims of the course are:

- Enrich the students' knowledge about the field of Engineering Chemistry.
- Elevate the students' knowledge about the effect of the environment.
- Enrich the students with idea about construction materials and cement chemistry.
- Develop students' practical skills for solving the water pollution problems.

Description :

Gases, Mass balance and heat balance in combustion process 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 -	- Define the main physical and chemical phenomena and terms related to the above-mentioned subjects.
2 -	- Describe the general idea about construction of materials and cement chemistry.
3 -	- Identify the effect of the environment and problems of water pollution

b. Intellectual Skills: :

1 -	- Examine different solutions for calculation of numerical problems related to the above-mentioned subjects.
2 -	- Analyze chemical reactions and their characteristics to process industries.
3 -	- Solve industrial problems in a scientific method.

c. Professional and Practical Skills: :

1 -	- Utilize accurate use of different glass wear used for qualitative and quantities chemical analysis.
2 -	- Analyze the physical properties of petroleum oil analysis using standard equipment.
3 -	- Use the knowledge of Chemistry to solve engineering problems.

d. General and Transferable Skills: :

1 -	- Collaborate effectively within multidisciplinary team.
2 -	- Work coherently and successfully as a part of a team in the Lab and assignments.

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	8	4	2
Thermodynamics	4	2	2
Electrochemistry and Corrosion of Metals	4	2	2
Solutions Chemistry	8	4	4
Water and its Treatment	4	2	2
Polymers Chemistry	4	2	2
Chemistry of Cement	4	4	4
Mass balance in combustion process of fuels	8	4	4

Teaching And Learning Methodologies :

Interactive Lecture
Discussion
Problem Solving
Experimental Learning
Cooperative learning

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	5.00		
Final exam	40.00		
Lab Exam	15.00		
Mid-Term Exam	25.00		
Participation and performance	5.00		
Quizzes	10.00		

Books :

Book	Author	Publisher
Chemistry	Roymond Chang	McGraw Hill

Course Notes :

Course notes and Handouts

Recommended books :

Hill, J., Petrucci, R. and Perry S., "General Chemistry ", 4th Edition, 2005, Pearson and Prentice Hall.
Bardy and Holum, "The Study of Matter and Its Changes ", 4th Edition, 2005.