

Faculty of Engineering & Technology
Heating & Ventilation and Air Conditioning

Information :

Course Code : MPR 466

Level : Undergraduate

Course Hours : 2.00- Hours

Department : Specialization of Mechatronics Engineering

Instructor Information :

Title	Name	Office hours
Lecturer	Zakaria Mostafa Abdo Salim Marouf	
Assistant Lecturer	Moustafa Raafat Aziz Shousha	1

Area Of Study :

- Understand fundamentals of Heating, ventilation and Air Conditioning
- Apply the fundamental principles of Heating, ventilation and Air Conditioning
- Explore the fundamental principles of Heating, ventilation and Air Conditioning through experimentation
- Develop skills for analyzing experimental data and working in teams
- Share ideas and work in a team.

Description :

Properties of Moist Air, Psychrometry of Air-Conditioning Processes, Design Conditions, Heat Transfer through Building Structures, Load Calculations and, Applied Psychrometrics, Design of Air Conditioning Apparatus, Fans.

Course outcomes :

a. Knowledge and Understanding: :

1 -	Define the basic concepts of Heating, ventilation and Air Conditioning
2 -	Understand the properties of the Moist Air
3 -	Understand the Psychrometry of Air-Conditioning Processes
4 -	Understand the Design Conditions
5 -	Understand Load Calculations and Applied Psychrometric

b. Intellectual Skills: :

1 -	Ability to define and solve problems related to properties of the Moist Air.
2 -	Ability to define and solve problems related to Psychrometry of Air- Conditioning Processes.
3 -	Ability to define and solve problems of Design Conditions
4 -	Ability to define and solve problems of Load Calculations and Applied Psychrometric

d. General and Transferable Skills: :

1 -	Ability to work in a team.
2 -	Ability to share ideas and communicate with others

3 - Ability to deal with others according to the rules of the professional ethics

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Properties of Moist Air	4	2	2
Psychrometry of Air-Conditioning Processes	6	4	2
Design Conditions	6	4	2
Heat Transfer through Building Structures	6	4	2
Load Calculations and Applied Psychrometrics	9	6	3
Design of Air Conditioning Apparatus	8	6	2
Fans	6	4	2

Teaching And Learning Methodologies :

Interactive Lecturing
 Problem solving
 Experiential learning
 Research activity

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
1st Midterm	25.00	6	
2nd Midterm	25.00	11	
Assignments	10.00		
Final Exam	40.00	16	

Recommended books :

Refrigeration and Air Conditioning, S.C. Arora, S. Domkundwar, 2000.