

Faculty of Engineering & Technology
Thermodynamics and Fluid Mechanics

Information :

Course Code : MPR 243

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Department of Electrical Engineering

Instructor Information :

Title	Name	Office hours
Lecturer	Anas Mohamed Abdelrahman Ali	2
Assistant Lecturer	Moustafa Raafat Aziz Shousha	3

Area Of Study :

- “Enrich students knowledge about the theory of fluid mechanics and the comparison between fluids and other substances.
- “Enrich students knowledge about the theory of thermodynamics and heat transfer systems on different thermodynamics systems.
- “Train students to measure different fluid properties and analyze different fluid systems in laboratory.

Description :

Thermodynamics: Macroscopic approach to energy analysis, Energy transfer as work and heat, The first law of thermodynamics, Properties and states of pure substances, Control-mass and control-volume analysis, The essence of entropy and the second law of thermodynamics, Fluid Mechanics: Fluid properties, Similarity of fluid flows, Fluid statics; Pressure, Fluid dynamics; Conservation equations of mass and mechanical energies (Bernoulli equation), Energy and momentum conservation equations and applications, Flow through pipes; Laminar and turbulent flows, Pipes connected in series and parallel, branching of pipes, Measuring devices.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Illustrate between series and parallel pipe network design.
2 -	State the difference between different fluid flow types.
3 -	Define new terms; System, Thermodynamics, Fluid Mechanics.
4 -	Recognize the difference between fluids and other substances.
5 -	Relate the physics background to fluids.

b.Intellectual Skills: :

1 -	Deduce conservation equations of mass and energy
2 -	Analyze different system types found in nature.
3 -	Solve different engineering problems related to Thermodynamics and Fluid Mechanics.

c.Professional and Practical Skills: :

1 -	Write a technical report on a project or an assignment.
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Oral Exam	10.00		
Quizzes	5.00		

Course Notes :

No course notes are required

Recommended books :

None