

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Thermodynamic
Course number	PHYS3307
Faculty	
Department	
Course type	Major Needs
Course level	3
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

- 1 - To provide the student with a clear and logical presentation of the basic concepts and principles of Thermodynamics
- 2 - To be able to state the First Law and to define heat, work, thermal efficiency and the difference between various forms of energy. (quiz, self-assessment, PRS)
- 3 - To be able to apply ideal cycle analysis to simple heat engine cycles to estimate thermal efficiency and work as a function of pressures and temperatures at various points in the cyc
- 4 - To be able to quantify the performance of refrigeration and heat pump systems
- 5 - To understand the nature and role of the following thermodynamic properties of matter : internal energy, enthalpy, entropy, temperature, pressure and specific volume

Intended Learning Outcomes

Knowledge and Understanding	<ul style="list-style-type: none"> * Recognize the theoretical principles of The Second Law of Thermodynamics and Heat Engines, Entropy * Describe the First Law of Thermodynamics, Thermodynamic Processes and the Kinetic Theory of Gases * Explain the relation to determine the Temperature, the Zeroth Law of Thermodynamics and thermal Expansion of Solids and Liquids * Recognize the theoretical principles of The Second Law of Thermodynamics and Heat Engines, Entropy
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Course Contents

- 1 - Reversible and Irreversible Processes, Temperature and work and Zeroth Law of Thermodynamics
- 2 - Thermal Expansion of Solids and Liquids, Thermal Expansion of Solids and Liquids and Heat and Work
- 3 - The First Law of Thermodynamics, Thermodynamic Processes, The Kinetic Theory of Gases
- 4 - Maxwell Distribution and The Second Law of Thermodynamics
- 5 - The third Law of Thermodynamics, Heat Engines and Entropy

