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Course Instructor					
E-mail	Sameerd.ali1960@gmil.com				
Title	Thermodynamics				
Course Coordinator	Annually				
Course Objective	<p>We use thermodynamics an engineering approaches as text book and as a reference book for practicing engineers. The objectives of this text book are:</p> <p>To cover the basic principles of thermodynamics.</p> <p>To present a wealth of real-word engineering examples to give students a feel for how thermodynamics is applied in engineering practice.</p> <p>To developed an intuitive understanding of thermodynamics by emphasizing the physics and physical arguments.</p>				
Course Description	<p>Thermodynamics is an exciting and fascinating subject that deals with energy, which is essential or sustenance of life, and thermodynamics has long been an essential part of engineering curricula all over the world. It has a broad application area ranging from microscopic organisms, to common household appliances, transportation vehicles power generation systems and even philosophy.</p>				
Textbook	Thermodynamics An Engineering approach by Yunis A.Gengle Michael A.Boles				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
General Notes					

Republic of Iraq
The Ministry Of Higher Education
& Scientific Research



University: Diyala
College: Engineering
Department: Mechanical
Stage: 2nd
Lecturer name: Sameer D.Ali
Qualification: Msc in Mech. Eng.
Place of work: University of Diyala

Course Weekly Outline

Week	Date	Topes Covered	Lab. Experiment Assignments	Notes
1	19/2/2017	Introduction and basic concept		
2	26/2/2017	Energy, energy transfer and general analysis		
3	5/3/2017	Properties of pure substance phases of a pure substance some consequences of T_{sat} . And P_{sat} dependence.		
4	12/3/2017	Properties diagrams for phase-change processes. T-V diagram and P-V diagram		
5	19/3/2017	Properties tables. Enthalpy-A combination property saturated liquid and saturated vapor states. Saturated liquid-vapor mixture superheated vapor compressed liquid.		
6	26/3/2017	The ideal gas equation of state compressibility factor (Z)		
7	2/4/2017	Other equation of state.		
8	9/4/2017	Energy analysis of closed system moving Boundary work polytrophic process.		
9	16/4/2017	Specific heat, internal energy enthalpy and specific heat of ideal gas.		
11	23/4/2017	Mass and energy analysis of control volume. Flow work and the energy of flowing fluid.		
11	30/4/2017	Energy analysis of steady -flow systems, energy balance.		
12	7/5/2017	Some steady-flow engineering devices: 1.Nozzles and diffusers. 2.turbines and compressors. 3.throtlting valves. 4.mixing chambers. 5.heat exchangers. 6.pipe and duct flow.		

13	14/5/2017	The second law of thermodynamics Introduction. Thermal energy reservoirs. Heat engine. Thermal efficiency. Kilven-plank statement of 2 nd law Heat pumps, refrigerators coefficient of performance		
14	21/5/2017	Reversible and irreversible processes The carnot cycle		
15	28/5/2017	Entropy, isentropic process		
16	4/6/2017	The carnot cycle and it is value in engineering		
17	11/6/2017	Gas power cycle		
18	18/6/2017	Vapor cycle		

Half – year break

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INSTRUCTOR Signature:**Dean Signature:**