Course Description Form

1. Course Name: Power Plants 2. Course Code: MPAC402 3. Semester / Year: Annual System 2024/2025 4. Description Preparation Date: The beginning of the academic calendar for the year (2024–2025) 5. Available Attendance Forms: 3 hours/week - "theoretical + Practical" 6. Number of Credit Hours (Total) / Number of Units (Total) (60 theoretical hours + 30 practical hours) 90 hours / 5 units 7. Course administrator's name (mention all, if more than one name) Name: Raoof Mohammed Radhi Email: raof@uowa.edu.iq 8. Course Objectives Teaching the student, the steam properties, themal processes types of boilers fuels and combustion the turbines which needed in air conditioning 9. Teaching and Learning Strategies Strategy Data show lecture with discussion to ensure understanding Video clip during lectures for respective clarification Strong emphasis on scientific visits to related sites Example solving with students participation Tutorial sheet solution as Home work Frequent quizzes to motivate student Lab exam<	Course Description Form						
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Serious attention for class attendance to reduce "% absences"							
10. Course Structure							
Week Hours Required Learning Unit or subject Learning Evaluation	Week Hours Required Learning Unit or subject	Learning	Evaluation				
Outcomes name method method	Outcomes name	method	method				

1 - 4 8-8 6-5 4-4 7-11 10-10 12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8 23-28 12-12	Student	Plant Steam Cycles, M	Theoretical	Modeler
7-11 10-10 12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8	Understanding	Cycles, Reheat Cy	Theoretical	Weekly
7-11 10-10 12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8	The lecture	Regenerative Cycle, C	And	Quiz and
7-11 10-10 12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8	The letter e	Feed Water Heater, Clo Feed Water Heater, Combi	practical	Lab
7-11 10-10 12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8		Cycles, Binary Cycle Worl		report
7-11 10-10 12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8		on Mercury and Ste		
7-11 10-10 12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8		Combined Condenser. Introduction to H		TA7 11
12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8	Student	Introduction to Exchangers, Theorem	Theoretical	Weekly
12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8	Understanding	Principles, Parallel Flow H	And	Quiz and
12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8	The lecture	Counter Flow H.E, Cross F H.E, The Log M	practical	Lab
12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8		H.E, The Log M Temperature Different		report
12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8		Method, The NTU Method		
12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8		Shell and Tubes H Condensing, Evaporation.		
12-14 6-6 15-16 4-4 17-18 4-4 19-22 8-8	0 Student	Steam Boilers, Kinds, Burr	Theoretical	Weekly
15-16 4-4 17-18 4-4 19-22 8-8	Understanding	Air Preheated, Preheated	And	Quiz and
15-16 4-4 17-18 4-4 19-22 8-8	The lecture	Superheated, Combustion Fuels, Complete		Lab
15-16 4-4 17-18 4-4 19-22 8-8		Incomplete Combust	practical	
15-16 4-4 17-18 4-4 19-22 8-8		Correct Air/Fuel Ratio, Ac		report
15-16 4-4 17-18 4-4 19-22 8-8	YTT.	Air Supplied, Heat Generat Boiler Efficiency, p		
15-16 4-4 17-18 4-4 19-22 8-8	25 out	principle.		
17-18 4-4 19-22 8-8	Student	Steam Condensers, Ki	Theoretical	Weekly
17-18 4-4 19-22 8-8	Understanding	Direct Contact Condens Surface Condenser, Design	And	Quiz and
17-18 4-4 19-22 8-8	The lecture	Manufacturing, Efficiency	practical	Lab
17-18 4-4 19-22 8-8		the Condensers.	1	report
19-22 8-8	Student	Steam Nozzles, Applicati	Theoretical	Weekly
19-22 8-8	Understanding	Steam Expansion, Discha Velocity of Steam Thro	A]	Quiz and
19-22 8-8	The lecture	Nozzles, Values of Crit		Lab
19-22 8-8		Pressure, Diameters of Th	practical	report
19-22 8-8	Chudant	and Exit for Maximum Turbo-Machinery,	Theoretical	Weekly
	Student	Classification, Princ	Theoretical	Quiz and
	Understanding	Theory, Dimension	And	Lab
	The lecture	Numbers.	practical	report
23-28 12-12	Student	The Pumps, Kinds of Pur System Characteristics, Pur	Theoretical	Weekly
23-28 12-12	Understanding	Characteristics, Match	And	Quiz and
23-28 12-12	The lecture	Pumps to Sys	practical	Lab
23-28 12-12		Characteristics, Operation Pumps in series and Para		report
23-28 12-12		Centrifugal pumps,		_
23-28 12-12		Hydraulic Characteris		
23-20 12-12	2 Student	Cavitation Steam Turbines, The Ki	Theoretical	Wooldy
		Impulse Turbine, Bla	A so al	Weekly
	Understanding	Efficiency, Reaction Turb		Quiz and
	The lecture		practical	
		Velocity Triangles,		report
		Blades Guidance,		
29-30 4-4	Student	Power Plants Systems, Feed	Theoretical	Weekly
	The lecture	Reaction Ratio, Installat Multi Stage Blades Velocity Triangles, Blades Guidance, The Blades ,External Guidance,	practical	Lab report

Understanding The lectureWater Cycle, Water Treath and Testing, Piping Syste Valves, Globe Valve, C Valve, Chick Valve, Spe Valve, Chick Valve, Spe Valves, Safety Valves, Cor Systems, Blow Measurement instruments, Goal of Measurement Classifications, Tempera Measurements, Disch Measurements, Cas Analy Velocity Measurements, L Recorder, ElectiAnd practicalQuiz and Lab report11. Course EvaluationUnderstanding Distributing the score out of 100 according to the tasks assigned to the student such asDistributing the score out of 100 according to the tasks assigned to the student such asDistributing the score out of 100 according to the tasks assigned to the student such as							
daily preparation, daily oral, monthly, or written exams, reports etc12. Learning and Teaching Resources							
Required textbooks (curricular books, if any) A Textbook of Thermal Engineering" by R.S. KHURMY and J.K. GUPTA Main references (sources) Engineering an Thermodynamics" Approach "fifth edition by YUNUS A.CENGEL							
Recommended books and references Applied Thermodynamics (scientific journals, reports) Applied Thermodynamics Onkar - Singh 3rd_Edition							
Electronic Refere	nces, Websites		1- WWW.B 2- WWW.B				

