



Arab Academy for Science, Technology & Maritime Transport
College of Engineering & Technology
Mechanical Engineering (Mechatronics) Program

University/Academy: Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute: College of Engineering & Technology
Program: B.Sc. Mechanical Engineering

Form no. (12)
Course Specification

1- Course Data

Course Code: ME 425	Course Title: Power Plant Technology	Academic Year/Level: 4th year / 8th semester
Specialization: Mechanical	No. of Instructional Units 3 credits	Lecture 2 hrs.
		Practical 2 hrs.

2- Course Aim

- To develop the student's capabilities to thoroughly understand the performance of the different thermal plants, Evaluate this performance, compare and choose between them.

3- Intended Learning Outcomes

dd- Knowledge and Understanding	Through knowledge and understanding, students will be able to: K4) Principles of design including elements design, process and/or a system related to specific disciplines.
ee- Intellectual Skills	Through intellectual skills, students will be able to: I4) Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.
ff- Professional Skills	Through professional and practical skills, students will be able to:
gg- General Skills	Through general and transferable skills, students will be able to:

4- Course Content

Week No.1 Thermodynamics Review (1st, 2nd laws of thermodynamics)

Week No.2 Steam Formation

Week No.3 Steam Properties and Process

Week No.4 Simple Rankine Cycle

Week No.5	Modified Rankine Cycle
Week No.6	Reheat and Regeneration Cycles
Week No.7	Steam Turbine, Steam Generator and Steam Condenser-7th week evaluation / 7th week evaluation
Week No.8	Power Plant Control
Week No.9	Simple Gas Turbine Cycle
Week No.10	Gas Turbine Cycle with Reheat, Intercooling and Regeneration
Week No.11	Combined Cycle Power Plant
Week No.12	Nuclear Power Plant- 12th week evaluation / 12 th week evaluation
Week No.13	Renewable Power Generation, Solar Energy.
Week No.14	Wind Energy
Week No.15	Geothermal Energy
Week No.16	Final Examination

5- Teaching and Learning Methods

- Lectures
- Tutorials
- Reports & sheets
- Laboratories
- Seminars

6-Teaching and Learning Methods for Students with Special Needs

- Lectures
 - Tutorials
 - Reports & sheets
 - Laboratories
 - Seminars
- Academic Support:**
- The general academic advisor appoints an academic supervisor for handicapped students.
 - Continuous follow ups are made for handicapped students after each assessment to evaluate their academic level of achievement

7- Student Assessment

a-Procedures used	1-Written Examinations to assess The Intended Learning Outcomes. 2-Class Activities (Reports, Discussions, -----) to assess The Intellectual Skills.
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b- Schedule:	Assessment 1	7 th Week Assessment
	Assessment 2	12 th Week Assessment
	Assessment 3	Continuous Assessments
	Assessment 4	16 th Week Final Written Exam
c- Weighing of Assessment	7 th Week Evaluation	30 %
	12 th Week Evaluation	20 %
	Final-term Examination	40 %
	Oral Examination	00 %
	Practical Examination	00 %
	Semester Work	10 %
	Total	100%

8- List of References:

a- Course Notes	N/A
b- Required Books (Textbooks)	<ul style="list-style-type: none"> • Lecture notes • •
c- Recommended Books	<ul style="list-style-type: none"> • M.M El-Wakil, "Power Plant Technology ", 1st edition, McGraw-Hill, 1984 • H. Cohen, G.F.C Rogers, and H. I. H. Saravanamutto, "Gas turbine Theory ", 3rd edition, Longman Scientific and Technical, 1987. • - Kam W. Li, and Paul Priddy "Power Plant System Design", 1st edition, John Wiley and Sons, 1985.
d- Periodicals, Web Sites, etc.	N/A

Course coordinator:

Program Manager: