



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 232	Course Title: Thermodynamics (1)	Academic Year/Level: 2nd year / 3ed semester	
Specialization: Mechanical	No. of Instructional Units 3 credits	Lecture 2 hrs.	Practical 2 hrs.

2- Course Aim

The course aims is to give students a thorough grounding in the subject of thermodynamics and the design of thermal plant

3- Intended Learning Outcomes

s- Knowledge and Understanding	<p>Through knowledge and understanding, students will be able to:</p> <p>K1) Concepts and theories of mathematics and sciences, appropriate to the discipline</p> <p>K4) Principles of design including elements design, process and/or a system related to specific disciplines.</p> <p>K5) Methodologies of solving engineering problems, data collection and interpretation</p> <p>K10) Technical language and report writing</p>
t- Intellectual Skills	<p>Through intellectual skills, students will be able to:</p> <p>I5) Assess and evaluate the characteristics and performance of components, systems and processes.</p> <p>I7) Solve engineering problems, often on the basis of limited and possibly contradicting information.</p>
u- Professional Skills	<p>Through professional and practical skills, students will be able to:</p> <p>P1) Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems.</p> <p>P2) Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services.</p> <p>P3) Create and/or re-design a process, component or system, and carry out specialized engineering designs.</p> <p>P12) Prepare and present technical reports.</p>
v- General Skills	<p>Through general and transferable skills, students will be able to:</p> <p>G3) Communicate effectively.</p> <p>G9) Refer to relevant literatures.</p>

4- Course Content

Week No.1	Heat Engine Cycles
Week No.2	Heat Engine Cycles
Week No.3	Heat Engine Cycles
Week No.4	Steam Plant
Week No.5	Steam Plant
Week No.6	Heat Transfer
Week No.7	Heat Transfer - / 7th week evaluation
Week No.8	Heat Transfer
Week No.9	Heat Transfer
Week No.10	Combustion
Week No.11	Combustion
Week No.12	Combustion - Practical Analysis of Combustion Products / 12 th week evaluation
Week No.13	Positive Displacement Machines.
Week No.14	Positive Displacement Machines
Week No.15	Positive Displacement Machines
Week No.16	Final Examination

5- Teaching and Learning Methods

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| <ul style="list-style-type: none"> • Lectures • Tutorials • Reports & sheets • Laboratories • Seminars |
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6-Teaching and Learning Methods for Students with Special Needs

<ul style="list-style-type: none"> • Lectures • Tutorials • Reports & sheets • Laboratories • Seminars <p><u>Academic Support:</u></p> <ul style="list-style-type: none"> • 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
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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.	
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)	• YUNUS, CENGEL. BOLES, MICHEAL A " THERMODYNAMICS: AN ENGINEERING APPROACH"
c- Recommended Books	• M. David, "Engineering Thermodynamics with Application", Collage Publication, Latest Edition. • The thermodynamics problem solver
d- Periodicals, Web Sites, etc.	N/A

Course coordinator:

Program Manager: