

Course unit title:	Energy Management & Conservation		
Course unit code:	ME 303		
Type of course unit:	Compulsory		
Level of course unit:	Bachelor (1 st Cycle)		
Year of study:	3		
Semester when the unit is delivered:	5 th or 6 th		
Number of ECTS credits allocated :	6		
Name of lecturer(s):	Dr. George Karagiorgis		
Learning outcomes of the course unit:	<ol style="list-style-type: none"> 1. Identify Energy management Techniques that are used for increasing the Energy performance of buildings and explain Energy Audit 2. Explain the basic principles and theory related to optimisation of building Design for Energy Conservation, Implement this knowledge to real life examples. 3. Describe the methodology needed for Computing Infiltration / Ventilation levels and use proper insulating materials for efficient thermal insulation. 4. Understand the concept of Zero energy buildings 5. Analyse different methods used to convert waste heat into valuable energy and explain the technical elements of reducing energy consumption and costs. 6. Explain and analyse the need and importance of using Renewable energy and define the necessary knowledge for making calculations regarding the installation of Photovoltaics. 		
Mode of delivery:	Face-to-face		
Prerequisites:	None	Co-requisites:	None
Recommended optional program components:	None		
Course contents:	<ul style="list-style-type: none"> • Energy management principles • Application of energy management techniques to building design • Types and usage of air conditioning equipment • Heat transmission in building structures • Principles of ventilation and infiltration • Materials used for thermal insulation • Principles of energy conversion • Conversion of waste heat into usable energy • Methods to reduce energy consumption and cost • Types and use of renewable energies • Theory and use of Photovoltaics • Energy Audit 		
Recommended and/or required reading:	Thermodynamics cycles and principles of Power Generation		
Textbooks:	<ol style="list-style-type: none"> 1. Wayne C. Turner and Steve Doty "Energy Management Handbook", Fifth Edition, Fairmont Press, Inc, 2005 2. Andrew Parr, "Air Conditioning Principles and Systems: An Energy Approach", Fourth edition Edward G. Pita Prentice Hall, 2001 3. Mazumdar B., "A text Book of Energy Technology: Both Conventional & Renewable source of energy", APH, 1999 		
Planned learning activities and	The course is delivered to the students by means of lectures, conducted with the help of computer presentations. Lecture notes and presentations are available through the web for		

teaching methods:	students to use in combination with the textbooks.
Assessment methods and criteria:	<ul style="list-style-type: none"> • Assignments 10% • Tests 30% • Final Exam 60%
Language of instruction:	English
Work placement(s):	No