

Course Title	Energy Management & Conservation			
Course Code	ME 303			
Course Type	Elective			
Level	BSc (Level 1)			
Year / Semester	3 th Year / 5 th or 6 th Semester			
Teacher's Name	Dr. George Karagiorgis			
ECTS	6	Lectures / week	3	Laboratories/week
Course Purpose	The course purpose is for the students to develop a sound understanding of the theory and applications of Energy Management and Conservation. Students will gain the ability to evaluate various Energy systems focusing on the buildings. They will learn how to perform an Energy audit. Upon completion of this course, the students will be able to apply Energy Savings Techniques, Energy Management schemes etc.			
Learning Outcomes	<p>By the end of the course, students must be able to:</p> <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 			
Prerequisites	None		Corequisites	None
Course Content	<ul style="list-style-type: none"> - Fundamental Concepts: <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 			

	<ul style="list-style-type: none"> • Methods to reduce energy consumption and cost • Types and use of renewable energies • Theory and use of Photovoltaics • Energy Audit
Teaching Methodology	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 e-learning platform for students to use in combination with the textbooks.
Bibliography	<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
Assessment	<ul style="list-style-type: none"> • Assignments 20% • Tests 20% • Final Exam 60%
Language	English