

Course #

MET x543

ETM x543

Title *Renewable Energy Power Applications*

Description *This course will concentrate on the use of renewable energy resources to generate thermal and electrical power for residential or commercial applications. The course will outline the thermodynamics involved in the solar energy and hydro energy power generation.*

Outcomes	a	b	c	d	e	f	g	h	i	j	k
1. Understand the basic principles of renewable energy recovery and electric power generation from the following sources of renewable energy: A) Non concentrated solar energy for heat recovery, B) Concentrated solar energy with Rankine Cycle power generation system, C) Land and Ocean based wind energy for electric power generation, D) Wave and Tidal energy recovery and power generation system, E) Geothermal energy for electric power generation, F) Photovoltaic power generation for electric power generation and storage, G) Hydro energy power generation, H) Bio-gas fuel generation for fueling electric power generation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. To be able to identify commercial manufacturers of components and/or systems of components used in renewable energy systems.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. To be able to solve 'real-world' engineering applications using some or all of the above as required to present a Case Study via a concise mini-Project Report (for inclusion in the student's portfolio of course work) specifically focused on the use of renewable energy recovery and power generation for use in the United States as well as in the developing countries.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>