



Course Description

Course title	Introduction to renewable energy engineering
Course code	ECE230
College	Engineering
Department / Program	Electrical Engineering/ Renewable Energy
Year/ Level	2/4
Course Type	A. <input type="checkbox"/> University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Program <input type="checkbox"/> Others b. <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective
Credited Hours	(3 Cr. Hrs)
Contact Hours	(LT:2, LB:2 ,TR:0)
Pre-requisites (if any)	PHYS 102
Co-requisites (if any)	---
Course description	Introduction to Renewable Energy Engineering including survey of conventional energy resources; oil, gas, coal, and renewable energy resources; thermal solar energy, Principals of photo-voltage PV solar cells, wind mills, hydropower, tidal, wave, geothermal, hydrogen & bio-fuels, and nuclear. Conservation of energy, energy resources, energy efficiency, energy production, introduction to energy power plants.



Course Main Objectives	<ul style="list-style-type: none">- Understand the various forms of conventional energy resources- Learn the present energy scenario and the need for energy conservation- Explain the concept of various forms of renewable energy- Outline division aspects and utilization of renewable energy sources for both domestics and industrial application- Analyse the environmental aspects of renewable energy resources- Introduce to climate change and the future of energy- Introduce and understand free hand sketching, isometric drawing, orthographic projections and 3D sketching.
Learning Outcomes	Knowledge and Understanding Define the concepts Renewables.
	Skills: Apply Renewable energies concepts and laws to solve problems.
	Values: Work individually or in teams in laboratories and on research projects professionally.
References	<ol style="list-style-type: none">1- Real Goods Solar Living Sourcebook: The Complete Guide to Renewable Energy Technologies and Sustainable Living (30th anniversary edition), John Schaeffer ..., Gaia.2- Renewable Energy (2nd edition), Godfrey Boyle ..., Oxford University Press, 450 pages (ISBN: 0-19- 926178-4).3- Energy Systems and Sustainability: Power for a Sustainable Future, Godfrey Boyle, Everett Bob, and Ramage Janet, Oxford University Press, 619 pages (ISBN: 0-19-926179-2).