Module Code	TE-4302			
Module Title	Advanced Renewable Technologies			
Degree/Diploma	Bachelor of Engineering Degree			
Type of Module	Major Option			
Modular Credits	2	**Total student Workload**	4	hours/week
		Contact hours	2	hours/week
Prerequisite	None			
Anti-requisite	None			

Aims

This module provides students with knowledge of advanced renewable technologies for energy generation with an in-depth knowledge of renewable energy technologies such as biomass and bioenergy, solar thermal, solar photovoltaic, hydropower, and wind energy. Other topics include capacity factors, carbon intensity, levelised costs, energy trends, energy policy, commercial awareness related to biomass and bioenergy, solar thermal, solar photovoltaic, hydropower, and wind energy.

Learning Outcomes

On successful completion of this module, a student will be expected to be able to:

Lower order :	30%	- recognise and identify the various technologies available for the generation of energy from renewable sources - evaluate and assess the different types of renewable energy technologies
Middle order :	30%	- apply engineering concepts of renewable energies for applications - analyse the environmental impact of renewable energy technologies
Higher order:	40%	- design and create potential renewable energy conversion for real world applications - recommend and justify the technologies and processes involved in renewable energy technologies - develop an awareness of the potential benefits of renewable energy applications towards the environment

Module Contents

- Technology overview
- Biomass and bioenergy technologies
- Solar thermal and solar photovoltaic technologies
- Hydropower technologies
- Wind energy technologies
- Environmental impact and awareness of renewable energy technologies

Assessment	Formative assessment	Regular tutorial and online quizzes to assess and give feedback for their learning.
	Summative assessment	Examination: 40%
		Coursework: 60% - 2 class tests (15% each) - 3 assignments (10% each)