Module Code	TE-3301			
Module Title	Alternative Energy Systems and Applications			
Degree/Diploma	Bachelor of Engineering (Energy Systems)			
Type of Module	Major Option			
Modular Credits	4	**Total student Workload**	8	hours/week
		Contact hours	4	hours/week
Prerequisite	None			
Anti-requisite	SP-3407 Introduction to Renewable energy; SP-4303 Renewable Energy			

Aims

The module provides a broad overview of the growing use of renewable energy sources in the world economy, with detailed analyses of specific applications.

Learning Outcomes

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

Lower order :	30%	- comprehend the economics and public policy aspects of renewable energy development - recognise the energy demand of world, nation and available resources to fulfil the demand
Middle order :	40%	- review available renewable energy resources and techniques to utilize them effectively - review the technologies, their key elements and principals, that we use to capture, convert, store and distribute energy
Higher order:	30%	- assess the costs and benefits associated with different energy sources and technologies - assess problems in alternative and renewable energy systems - communicate technical information in written and graphical form

Module Contents

- Overview to principles of renewable technologies for sustainability
- Biomass, geothermal, hydroelectric, wave and tidal energy technologies
- Wind and solar energy
- Energy conversion techniques and applications
- Discussions on economic, environment, politics and social policy on renewable resources

Assessment	Formative assessment	Monthly online multiple choice questions will be used to test and to give feedback for their learning
	Summative assessment	Examination: 50%
		Coursework: 50% - 2 class tests (10% each) - 1 individual assignment (10%) - 2 group laboratory reports (10% each)