Alternative Energy Systems

Module Information

2022.01, Approved

Summary Information

Module Code	7005MSC
Formal Module Title	Alternative Energy Systems
Owning School	Engineering
Career	Postgraduate Taught
Credits	10
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	22

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	The aim of this module is to provide a comprehensive introduction to alternative power generation systems. The module will review the environmental issues surrounding existing methods of power generation and concentrate alternative and renewable sources.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically evaluate the issue of global warming within the context of power generation.
MLO2	2	Analyse wind data and determine yield capacity of various types of wind turbines.
MLO3	3	Design and evaluate the performance of a domestic solar thermal system by simulation.
MLO4	4	Design and evaluate the performance of a photo voltaic generation system by simulation.
MLO5	5	Discuss in detail alternative designs of nuclear power stations and associated environmental and safety issues.

Module Content

Outline Syllabus	Evaluate the issues and mechanism of global warming, including the UK's policy on renewable energy.Wind turbine - types, design, wind data collection/analysis, energy yield prediction.Solar energy quantification and data collection/analysis.Design of solar thermal systems and evaluate performance by simulation.Design of P-V power systems and evaluate performance characteristics by simulation.Review UK national grid power distribution system and discuss connection issues.Investigate UK energy pricing structure.Review of the UK nuclear energy industry.
Module Overview	This module principally aims to provide a relatively detailed insight into the spectrum of alternative methods of power generation including associated issues such as global warming and connecting to the national grid system.
Additional Information	This module principally aims to provide a relatively detailed insight into the spectrum alternative methods of power generation including associated issues such as global warming and connecting to the national grid system.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Technology	Portfolio	100	0	MLO1, MLO2, MLO3, MLO4, MLO5

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Geraint Phylip-Jones	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings