

Liverpool John Moores University

Title: INVESTIGATING ALTERNATIVE TECHNOLOGIES
Status: Definitive
Code: **5014TECH** (105309)
Version Start Date: 01-08-2016

Owning School/Faculty: Maritime and Mechanical Engineering
Teaching School/Faculty: Maritime and Mechanical Engineering

Team	Leader
Geraint Phylip-Jones	Y

Academic Level: FHEQ5 **Credit Value:** 24 **Total Delivered Hours:** 72
Total Learning Hours: 240 **Private Study:** 168

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	48

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Initial Design Requirement/ Specification	25	
Essay	AS2	Operation Principles Report	25	
Essay	AS3	Energy Generation Solution	25	
Essay	AS4	Impact of Solution	25	

Aims

The aim of this module is to allow students to investigate the design and constructional principles of a range of renewable energy technologies.

Learning Outcomes

After completing the module the student should be able to:

- 1 Specify the design requirements of a typical alternative energy generation scheme.
- 2 Define the operational principles of a range of alternative energy generating systems.
- 3 Develop an alternative energy solution to a small-scale local energy need.
- 4 Evaluate the environmental and socio-economic impact of a small-scale local energy generating system.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

CW	1
CW	2
CW	3
CW	4

Outline Syllabus

Wind power; wave power; tidal power; solar power; hydro-electric and pump storage; micro hydro; biomass and geothermal.

Constructional details and operating parameters.

Typical calculations for power output given a range of environmental locations and conditions.

Cost-benefit analysis, payback period, effects on the local economy and environment, use of the grid to export energy.

Learning Activities

A range of investigative laboratory classes, case studies and supporting lecture programme.

Notes

This module will focus on a practical investigative approach to alternative technology. It will also include local case studies including examples from the Centre of Alternative Technology.