

Liverpool John Moores University

Title: ENERGY AND ENVIRONMENTAL MANAGEMENT
Status: Definitive
Code: **7102BEPG** (118468)
Version Start Date: 01-08-2011

Owning School/Faculty: Built Environment
Teaching School/Faculty: Built Environment

Team	Leader
Derek King	Y
Andy Shaw	

Academic Level: FHEQ7 **Credit Value:** 20.00 **Total Delivered Hours:** 28.00
Total Learning Hours: 200 **Private Study:** 172

Delivery Options

Course typically offered: Runs Twice - S1 & S2

Component	Contact Hours
Online	25.000
Workshop	3.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	REPORT	REPORT	100.0	

Aims

To appreciate the role of sustainable energy management in the built environment, and to critically evaluate various methods of managing energy use for sustainable development.

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically appraise typical energy consumption patterns in the built environment
- 2 Critically analyse and contrast the various methods of minimising energy consumption and managing energy use in the built environment, with particular regard to the technique of building energy modelling
- 3 Investigate and critically appraise established techniques of generating energy, contrasting these with the range of renewable and low & zero carbon energy generating technologies available and emerging
- 4 Critically appraise methods of energy storage and distribution in the built environment
- 5 Critically appraise commonly employed techniques for environmental management in the built environment
- 6 Critically analyse predictions for future energy sources and energy consumption patterns and in the built environment

Learning Outcomes of Assessments

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

REPORT	1	2	3	4	5	6
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Outline Syllabus

Energy consumption in buildings and the wider environments: common and innovative methods of managing and minimising energy consumption; building energy modelling using specialist software; environmental management plans; energy efficiency and conservation; environmental assessment methods: BREEAM, LEED, Code for Sustainable Homes, Passivhaus

The impact of buildings upon the wider environment: environmental policy and environmental management systems as defined in BS EN ISO 14001:2004.

Sources of energy: "conventional" and "renewable" sources; fossil fuel depletion; emergence of renewable and low & zero carbon technologies; storage, distribution and management of energy.

Current energy demands of the built and wider environments: prediction of future energy demands; prediction of future energy resources from conventional and renewable sources.

Learning Activities

The module will be delivered via a series of key-note lectures which are archived in the Wimba classroom, live seminars and a portfolio of project-based tasks. The learner will have an induction session where the approach will be introduced; typically four archived "lectures" will be followed by a live seminar. A workshop will be held at the University to act as a summative discussion on the learner's assessment of their organisation.

References

Course Material	British Standards
Author	BSI
Publishing Year	2004
Title	"BS EN ISO 14001:2004 Environmental management systems – Requirements with guidance for use."
Subtitle	
Edition	
Publisher	BSI
ISBN	

Course Material	Book
Author	Beggs C
Publishing Year	2009
Title	" Energy Management Supply and Conservation"
Subtitle	
Edition	
Publisher	Butterworth-Heinemann
ISBN	978-07506-8670

Course Material	Book
Author	Faber and Kell
Publishing Year	2008
Title	" Heating and Air Conditioning of Buildings "
Subtitle	
Edition	10th
Publisher	Butterworth-Heinemann
ISBN	978-0-7506-8365-4

Course Material	Book
Author	Hall and Greeno
Publishing Year	2009
Title	"Building Services Handbook "
Subtitle	
Edition	5th
Publisher	Butterworth-Heinemann
ISBN	978-1-85617-626-2

Course Material	Book
Author	CIBSE Guide A
Publishing Year	2006
Title	"Environmental Design"
Subtitle	
Edition	

Publisher	Chartered Institute of Building Services Engineers
ISBN	1903287669

Course Material	Book
Author	CIBSE Guide F
Publishing Year	2004
Title	"Energy Efficiency in Buildings"
Subtitle	
Edition	
Publisher	Chartered Institute of Building Services Engineers
ISBN	1903287340

Course Material	Book
Author	ANDERSON, J.
Publishing Year	2009
Title	The green guide to specification
Subtitle	An environmental profiling system for building materials and components
Edition	4th
Publisher	Wiley-Blackwell
ISBN	9781405119610

Course Material	Book
Author	MUMOVIC, D. & SANTAMOURIS, M.
Publishing Year	2009
Title	A handbook of sustainable building design and engineering
Subtitle	An integrated approach to energy, health and operational performance
Edition	
Publisher	Earthscan
ISBN	9781844075966

Course Material	Book
Author	LEVITT, D.
Publishing Year	2010
Title	The housing design handbook : a guide to good practice
Subtitle	
Edition	
Publisher	Routledge
ISBN	9780415491501

Course Material	Book
Author	CARPENTER, W. J.
Publishing Year	2009
Title	Modern sustainable residential design : a guide for design professionals
Subtitle	

Edition	
Publisher	Hoboken, N.J. : Wiley
ISBN	9780470126738

Course Material	Book
Author	Keeler, M.
Publishing Year	2009
Title	Fundamentals of integrated design for sustainable building
Subtitle	
Edition	
Publisher	John Wiley & Sons
ISBN	9780470152935

Course Material	Book
Author	Lechner, N.
Publishing Year	2009
Title	Heating, cooling, lighting : sustainable design methods for architects
Subtitle	
Edition	3rd
Publisher	John Wiley & Sons
ISBN	9780470048092

Course Material	Journal / Article
Author	
Publishing Year	
Title	Architects Journal
Subtitle	
Edition	
Publisher	
ISBN	

Course Material	Journal / Article
Author	
Publishing Year	
Title	RIBA Journal
Subtitle	
Edition	
Publisher	
ISBN	

Course Material	Journal / Article
Author	
Publishing Year	
Title	CIBSE Journal
Subtitle	
Edition	

Publisher	
ISBN	

Course Material	Website
Author	
Publishing Year	
Title	www.architecture.com
Subtitle	
Edition	
Publisher	
ISBN	

Course Material	Website
Author	
Publishing Year	
Title	www.bre.co.uk
Subtitle	
Edition	
Publisher	
ISBN	

Course Material	Website
Author	
Publishing Year	
Title	www.planningportal.gov.uk
Subtitle	
Edition	
Publisher	
ISBN	

Course Material	Website
Author	
Publishing Year	
Title	www.environment-agency.gov.uk
Subtitle	
Edition	
Publisher	
ISBN	

Notes

This module allows students to evaluate the implications of decisions relating to the generation and management of energy in the context of the built environment.