Module Proforma

Approved, 2022.01

Summary Information

Module Code	7511CATSCI
Formal Module Title	Buildings and People
Owning School	Biological and Environmental Sciences
Career	Postgraduate Taught
Credits	15
Academic level	FHEQ Level 7
Grading Schema	50

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Colm Bowe	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings

Partner Module Team

Contact Name	Applies to all offerings	Offerings

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Centre for Alternative Technology

Learning Methods

Learning Method Type	Hours
Lecture	14
Seminar	8
Tutorial	2
Workshop	8

Module Offering(s)

Offering Code	Location	Start Month	Duration
SEP-PAR	PAR	September	12 Weeks

Aims and Outcomes

Aims	a) Synthesise an understanding of the conceptual aspects and appreciate the complex nature of the inter relationships that exist between occupant comfort, energy flows in buildings and energy efficient building design. b) Apply the above in practice and define how they relate to adaptation and sustainability in the built environment.c) Develop a systematic, holistic, multidisciplinary and analytical approach to the critical appraisal of energy efficient design, heat flows, and provision of thermal comfort with respect to the demands of climate change adaptation and the principles of sustainability

Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Demonstrate a clear comprehensive understanding of the principles of occupant comfort in the context of energy efficient design of the built environment under an adaptation and sustainability remit
MLO2	Illustrate a critical understanding of the general principles of heat transfers and ventilation in buildings in the context of the design of buildings under an adaptation and sustainability remit
MLO3	Demonstrate skills in numerical analysis applied to energy flows in buildings
MLO4	Critically evaluate a building’s design in terms of effectiveness in providing for occupant comfort, energy efficiency, wider environmental impacts, and resilience to climate change

Module Content

Outline Syllabus
Thermal comfort, Heat transfers through building fabric, determination of U values; Thermal mass, Ventilation, Impact of moisture on building fabric and occupant health, Passive Cooling, Passive approaches to sunlight and solar gain, Natural lighting, Solar resource, Urban heat island effect, Climate influences on design and future climate change considerations for this and Quantification of building performance

Module Overview

Additional Information
Indicative References:Core McMullan, R., (2012) Environmental Science in Building 7th Edition, London: Palgrave Macmillan.RecommendedBaker N. and Steemers K. (2002). Daylight Design of Buildings, James & James. 2013 edition, Abingdon: Earthscan.Clements-Croombe D. (editor) (1997). Naturally Ventilated Buildings: Buildings for the Senses, Economy and Society. Abingdon: Spon Press.Givoni B. (1976). Man, Climate and Architecture, London: Applied Science Publishers.Harvey, L. D. D. (2010). Energy Efficiency and the Demand for Energy Services. Energy and the New Reality 1. London: Earthscan.(*)Roaf, S. (2009) Adapting Buildings and cities for climate change: a 21st century survival guide. 2nd ed. Oxford: Elsevier. (*)Santamouris M. (2001). Energy and Climate in the Urban Built Environment. James and James (Science Publishers) Ltd. 2011 edition, Abingdon: Routledge.Further relevant journals, websites and other relevant resources will be provided within reading materials that are made available for the module.(*) Available as an e-book

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Report	Essay	67	0	MLO1, MLO2
Report	Numerical Analysis	33	0	MLO3, MLO4