

Summary Information

Module Code	5506NCCG
Formal Module Title	Sustainability
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Nelson and Colne College Group

Learning Methods

Learning Method Type	Hours
Lecture	60

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
APR-PAR	PAR	April	12 Weeks
JAN-PAR	PAR	January	12 Weeks
SEP-PAR	PAR	September	12 Weeks

SEP_NS-PAR	PAR	September (Non-standard start date)	12 Weeks
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Aims and Outcomes

Aims	On successful completion of this module the student will possess a wide range of knowledge and understanding of the issues and topics associated with sustainability and low carbon engineering.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Determine the nature and scope of the technical challenges of ensuring sustainable development.
MLO2	2	Articulate the importance of collaborating with other disciplines in developing technical solutions to sustainability problems.
MLO3	3	Evaluate the use of alternative energy generation techniques in relation to their contribution to a low carbon economy.
MLO4	4	Analyse a variety of data sources to estimate the carbon footprint of a sociotechnical case study.

Module Content

Outline Syllabus	The scope and social context of sustainability: sustainable development Brundtland definition, global demographics, trends and predictions, population growth, standard of living, urbanisation and the balance of urban/rural space, sustainable design Environmental issues: climate change, planetary energy balance, carbon cycle science, the climate change obligation, carbon capture and sequestration, pollution, pollution prevention and management, carbon trading Eco-systems and habitat resources: food, water and energy Systems thinking and socio-technical systems: the politics and economics of sustainability Sustainable infrastructures: low carbon transport systems, sustainable cities, green building, power storage and distribution, sustainable logistics, waste and recycling Alternative energy resources: nuclear, solar, wind, tidal and wave, biomass and bioenergy, whole life cycle costing, precautionary principle Types of carbon footprint: organisational value chain, product carbon footprint science Calculation methodologies: direct and indirect, system boundaries, case study examples
Module Overview	
Additional Information	

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Case Study Analysis	50	0	MLO3
Report	Assignment	50	0	MLO1, MLO2, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Christian Matthews	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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