

Summary Information

Module Code	7301CIV
Formal Module Title	Sustainable Infrastructure
Owning School	Civil Engineering and Built Environment
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Civil Engineering and Built Environment

Learning Methods

Learning Method Type	Hours
Lecture	22
Seminar	22

Module Offering(s)

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

Aims and Outcomes

Aims	To develop understanding of the operation, design and management of infrastructure in both the Developing World and the Developed World. From this students will develop the capability for critical assessment of the sustainability of infrastructure in a wide variety of situations.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Design and evaluate sustainable solutions to infrastructure problems working from information which may be incomplete.
MLO2	2	Develop critical awareness of own learning through reflection and research.
MLO3	3	Critically appraise sustainable infrastructure design of SuDS, transportation systems and waste management to address UNSDG's.

Module Content

Outline Syllabus	Overview of sustainability and definition in the context of sustainable infrastructures. International standards for infrastructure and infrastructure management at local and national levels, including UN SDG's and their implication on engineering problems. Water, sanitation and health. Global view of levels of provision of water supply and sanitation. Water, waste and health relationships; water and waste related infections. Wastewater collection, treatment and transport. Sustainable sewerage and drainage systems. Sustainable wastewater and sludge treatment methods and analysis of their component parts. Wastewater and sludge reuse. Sustainable urban drainage system (SUDS). Sanitation systems, and sustainable technologies such as Aqua privies, Septic tanks, soakaways, lagoons and reedbeds. Disposal and simplified sewers. Solid Waste Management. A critical review of current practices of management systems including waste collection and transfer, landfill, recycling, re-use, incineration. Sustainable networks and transportation systems and use of environmental assessment methods (CEEQUAL, ENVISION, etc.), environmental management systems, environmental impact assessment, and social impact assessment and how they are used in engineering projects.
Module Overview	
Additional Information	This module develops students' understanding, and critical awareness, of the sustainability of infrastructure. Students consider and compare infrastructure through the world, with a particular emphasis on sustainable development.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Examination	60	3	MLO1, MLO3
Portfolio	Portfolio	40	0	MLO1, MLO2

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Iacopo Carnacina	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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