

Module Details	
Module Title	Sustainability in the Built Environment
Module Code	CSE7016-B
Academic Year	2021/2
Credits	20
School	Department of Civil and Structural Engineering
FHEQ Level	FHEQ Level 7

Contact Hours	
Type	Hours
Lectures	32
Tutorials	8
Directed Study	160

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 1

Module Aims
To provide students with an understanding of the concepts, principles and assessment techniques of sustainable development in the built environment with reference to sustainable practices and their use in an engineering, design, construction, maintenance and repair and demolition activities in the built environment.

Outline Syllabus
Sustainable development, the impact of sustainability on civil engineering projects and on the built environment, definition of sustainability, sustainability assessment frameworks and tools, and environmental impact assessment tools, sustainable design and construction, embedding sustainability into construction projects, main objectives: minimisation of carbon footprint, water and waste, use of environmentally and socially responsible materials, enhance biodiversity and ecology, support communities, job creation, provide health and well-being, involve all stakeholders. Sustainability-based decision making, interdisciplinary and multidisciplinary working, embodied energy of buildings and infrastructure, energy efficiency, impact of climate change, resilient design, flood alleviation schemes, Blue-green water and waste water infrastructure. Whole life cycle system thinking for buildings and infrastructure projects (design, choice of materials, construction, maintenance and repair, end of life, deconstruction, demolition, disposal), the circularity of the built environment. Case studies examples of sustainable buildings, water and transport infrastructure. Sustainability standards.

Learning Outcomes	
Outcome Number	Description
01	Critically review the key principles of sustainable built environment and of sustainability
02	Apply and critically evaluate sustainability assessment tools and techniques. Integrate sustainability into a building's or infrastructure design, construction, operation, maintenance and decommissioning.
03	Apply advanced problem-solving skills, interpret data and solve problems.
04	Plan, implement, monitor and adjust on an on-going basis, a self-directed part of a group coursework, evidencing collection and critical analysis of research data, use, to tackle unfamiliar problems..

Learning, Teaching and Assessment Strategy
The module is delivered using a series of Power Point lectures supported by tutorials including video presentation and case studies. At least one guest speaker will provide further accounts of industrial experience on specific topics. The module is assessed by group coursework to develop a sustainability assessment framework (each student will have a contribution of 1500 words to the group coursework) and by closed book examination. Supplementary assessment for the group coursework will involve an individual submission of 2000 words.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Examination - Open Book	Examination - Open Book (3 Hrs)	70%
Summative	Coursework	Group Coursework - 1500 words per student in each group. Supp Individual CW of 2000 words	30%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.