

| Module Details | |
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| Module Title | Sustainability in the Built Environment |
| Module Code | CSE7016-B |
| Academic Year | 2023/4 |
| 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 |
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| 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 |
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| 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 | |
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| 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 |
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| <p>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.</p> <p>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.</p> <p>Supplementary assessment for the group coursework will involve an individual submission of 2000 words.</p> |

| Mode of Assessment | | | |
|--------------------|---------------------------|---|-----------|
| Type | Method | Description | Weighting |
| Summative | Coursework - Written | Group coursework (2000 words individual contribution) / Supplementary individual coursework 2000w | 30% |
| Summative | Examination - Closed Book | Closed book examination (2 hours) | 70% |

| Reading List |
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| 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.