



Module Specification

Building and Bridge Engineering

Version: 2023-24, v2.0, 21 Mar 2023

Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	3
Part 4: Assessment.....	5
Part 5: Contributes towards	6

Part 1: Information

Module title: Building and Bridge Engineering

Module code: UBGMUN-15-M

Level: Level 7

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Geography & Environmental Mgmt

Partner institutions: Northshore College of Business and Technology

Field: Geography and Environmental Management

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: The module will be delivered by means of a series of lectures and tutorials.

Outline syllabus: Building Engineering

Design of water supply, above ground and below ground waste disposal systems; vertical and horizontal circulation; electricity supply; air conditioning; integration of services for low, medium and high-rise buildings.

Design of formwork, false work and cladding systems.

Preparation of general arrangement and detail drawings using AUTOCAD.

Bridge Engineering.

Classification of bridges.

Investigation for bridges.

Bridge loading.

Influence Lines and Surfaces.

Analysis and design of: concrete bridges, steel bridges, composite bridges.

Suspension bridges.

Arch bridges.

Introduction to cable stayed and box girder bridges.

Design of substructure and foundations.

Maintenance of bridges.

Construction techniques of bridges.

Part 3: Teaching and learning methods

Teaching and learning methods: Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; external visits; work based learning; supervised time in studio/workshop. Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc.

Student time will be allocated as follows:

Lectures: 54 hours

Tutorials/field visits: 12 hours

Directed learning: 9 hours

Summative assessment: 33 hours

Self-directed learning: 42 hours

Total Student hours: 150 hours.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Demonstrate an in-depth knowledge and understanding of building services required for domestic and commercial buildings.

MO2 Critically review the impact of building services on structural design.

MO3 Demonstrate an in-depth knowledge of a range of bridge structures and propose appropriate solutions for a given site taking into account the geometric functional, aesthetic and sustainability constraints.

MO4 Critically analyse and design steel, structural concrete and composite bridges.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 84 hours

Face-to-face learning = 66 hours

Total = 150

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/index.html) via the following link <https://uwe.rl.talis.com/index.html>

Part 4: Assessment

Assessment strategy: The strategy has been chosen to ensure that fundamental engineering principles are assessed under controlled conditions, while a more open ended research based assignments are used to encourage wider engagement and reflection on this topic. Summative assessment comprises a 2 hr examination for Assessment Task 1 and one Project for Assessment Task 2. Coursework Assignment One report of 3000 words will cover structural design aspects of bridges. Students are expected to submit individual reports and are assessed in learning outcomes 3 & 4 using this project report. Examination The 2 hr examination will cover the module syllabus on building engineering. An open book format will be used to allow reference to appropriate codes and standards. As part of formative assessment, students are encouraged to submit one field visit report of 1500 words for which feedback would be provided.

Assessment tasks:

Examination (First Sit)

Description: Examination - Building Engineering (120 minutes)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Project (First Sit)

Description: Project Report - Bridge Engineering (3000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4

Examination (Resit)

Description: Examination - Building Engineering (120 minutes)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Project (Resit)

Description: Project Report - Bridge Engineering (3000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Civil Engineering [Jan][FT][Northshore][4yrs] - Not Running MEng 2020-21