



Module Specification

Construction Technology and Building Services

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Part 1: Information

Module title: Construction Technology and Building Services

Module code: UBLMYB-30-2

Level: Level 5

For implementation from: 2021-22

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Environment & Technology

Department: FET Dept of Architecture & Built Environ

Partner institutions: None

Delivery locations: Auston Institute of Management Singapore, Frenchay Campus

Field: Architecture and the Built Environment

Module type: Standard

Pre-requisites: Construction Technology and Services 2021-22

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The module extends a basic appreciation of construction technology and environmental science principles developed at level 1 from domestic to commercial and industrial construction. It highlights links between related aspects of the design, site practice, and operation of buildings and services installations including building performance at the point of occupation. Throughout the module, emphasis will be placed on means employed by building designers, developers and managers to

accommodate the needs of clients, building users and to assess the building's impact on the public and the environment.

Pre-requisites: students must take one out of UBLMYS-30-1 Construction Technology and Services or UBLMAB-30-1 An Introduction to Building Construction.

Features: Not applicable

Educational aims: This module consolidates principles of performance and construction technology and extends the range of building use and technology to include commercial and industrial buildings, with their related production processes and technologies. These include method, sequence, resource requirements and a holistic view of the building's social, economic and environmental footprint.

Outline syllabus: The following provides an indicative list of headings that will help inform the syllabus although not necessarily in this sequence, or with equal measure.

Organisation of construction sites, mechanisation, method and resource analysis.

Temporary works below ground, falsework and formwork, temporary support and access structures.

External works including roads, paths and associated drainage.

Structural strategies and construction technologies for multi-storey medium rise and single storey medium / long span buildings. This includes substructure (e.g. foundations and basements), superstructure (e.g. flooring and roofing systems) and building envelope, internal components and finishes (e.g. cladding, external walls, partitions and ceilings) and fire strategies (passive e.g. compartmentation).

Analysis of collapse mechanisms within the ground. Predictions of deformation due to building loads including simple models of stress distribution.

Characteristic accuracy and allowable deviations, movement and overall fit. Verification of performance through site testing.

Health, safety and environment (HS&E) and building accessibility.

Building Information Modelling (BIM), prefabrication and other modern methods of construction (MMC).

Zero and low carbon construction methods and materials. Environmental assessment and sustainable development, impact and potential drivers and measurement.

Building performance, energy consumption and building acoustics.

Public health engineering and services including:

Cold water.

Heating.

Cooling.

Ventilation Strategies.

Electrical installations and Power

Lighting Strategies.

Fire Safety - active.

Security.

Part 3: Teaching and learning methods

Teaching and learning methods: The core of the taught element of this module will be centred on lectures and practical tutorials where the construction methods for the main building elements and building services installations will be introduced and analysed in both performance and production terms.

The lecturers will introduce and develop performance and production issues and problem solving necessary for the analysis of method. Tutorials will provide formative support addressing the outlined syllabus of this module, whilst quizzes will provide summative assessment of the students' progress throughout the year. An investigative approach based on sound scientific method will be fostered to support

the writing up of a professional report, and communication skills and team work will be engaged during a group presentation.

Independent learning includes hours engaged with essential reading, tutorial tasks' preparation, assignment preparation and completion etc.

Contact time: 72 hours

Assimilation and development of knowledge: 148 hours

Exam preparation: 40 hours

Coursework preparation: 40 hours

Total study time: 300 hours

Module Learning outcomes:

MO1 Identify different commercial and industrial construction solutions and describe how they address environmental, social and economic sustainability performance criteria.

MO2 Analyse structural strategies, key technology and material choices, and explain their relationship with production methods, risks, time, environmental and cost implications.

MO3 Interpret a client brief or technical scenario and present and justify traditional or advanced construction technology solutions in a comprehensive and professional manner.

MO4 Select appropriate sustainable building strategies for the design and specification of construction elements and building services within a holistic approach to sustainable building design and development.

MO5 Justify a sequence of work necessary for the effective and safe assembly, operation and dismantling of a building and the integration of BIM dimensions, building services and fire strategies.

MO6 Apply building environmental assessment methods to evaluate thermal, aural and visual parameters defining human comfort levels, as well as health, well-being and accessibility concerns within a building.

MO7 Undertake analytical investigations into the relationship between the design of buildings, building performance and current regulations and global concerns.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ublmyb-30-2.html) via the following link <https://uwe.rl.talis.com/modules/ublmyb-30-2.html>

Part 4: Assessment

Assessment strategy: Examination (Component A) consists of Online Quizzes on different topics spread throughout the year, which will be supported by formative tutorial tasks to be set and discussed during the tutorial sessions.

Coursework (Component B): Students will be required to develop a report [B1], based on a Case Study, relating to the construction technology and building services topics outlined in the Outline syllabus. The tutorial programme will enable formative advice to be given as work on this Coursework progresses. Similarly, students will be required to deliver to their peers a presentation [B2].

Resit Coursework: Students will be required to rework both components of work, which include a Report and a Presentation.

Assessment components:

Report - Component B (First Sit)

Description: Report 1 (1,500 words indicative)

Weighting: 25 %

Final assessment: No

Group work: No

Learning outcomes tested: MO2, MO3, MO7

Presentation - Component B (First Sit)

Description: Presentation

Weighting: 25 %

Final assessment: No

Group work: Yes

Learning outcomes tested: MO1, MO4, MO7

Examination (Online) - Component A (First Sit)

Description: Online Quizzes distributed throughout the year covering the Learning Outcomes

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO4, MO5, MO6

Project - Component B (Resit)

Description: This project is composed of both elements of Component B: a Report (1,500 words indicative) and a Presentation with Questions and Answers by the assessors.

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested:

Examination (Online) - Component A (Resit)

Description: Online Examination covering the topics of the Quizzes distributed throughout the year

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Quantity Surveying [Sep][PT][Frenchay][3yrs] GradDip 2021-22

Quantity Surveying and Commercial Management [Sep][FT][AustonSingapore][2yrs]
BSc (Hons) 2021-22

Quantity Surveying and Commercial Management [Feb][FT][AustonSriLanka][2yrs]
BSc (Hons) 2021-22

Quantity Surveying [Sep][FT][Frenchay][2yrs] GradDip 2021-22

Quantity Surveying and Commercial Management [Sep][SW][Frenchay][4yrs] BSc
(Hons) 2020-21

Quantity Surveying and Commercial Management [Sep][FT][Frenchay][3yrs] BSc
(Hons) 2020-21

Construction Project Management [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Construction Project Management [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21

Construction Project Management [Sep][PT][Frenchay][5yrs] BSc (Hons) 2019-20

Quantity Surveying and Commercial Management [Sep][PT][Frenchay][5yrs] BSc
(Hons) 2019-20

Quantity Surveying and Commercial Management
{Foundation}[Sep][SW][Frenchay][5yrs] BSc (Hons) 2019-20

Quantity Surveying and Commercial Management {Foundation}
[Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20

Quantity Surveying and Commercial Management {Apprenticeship-UWE}
[Sep][FT][Frenchay][5yrs] BSc (Hons) 2019-20

Construction Project Management {Foundation} [Sep][SW][Frenchay][5yrs] BSc
(Hons) 2019-20

Construction Project Management {Foundation} [Sep][FT][Frenchay][4yrs] BSc
(Hons) 2019-20