Module Specification

Modern Methods of Construction

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Contents

Part 1: Information

Module title: Modern Methods of Construction

Module code: UBLM51-15-M

Level: Level 7

For implementation from: 2024-25

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Arts, Technology and Environment

School: CATE School of Architecture and Environment

Partner institutions: None

Field: Architecture and the Built Environment

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Sustainability and net zero carbon are essential for the built environment. Efficiencies and smart project delivery are also vital to long term success. These topics are examined within the context of modern methods of construction and up-to-date construction processes, client briefs, the supply chain and project specific requirements. Therefore this module includes an appreciation of construction technology, construction management and procurement practices, along with an in

depth look at the industrialised methods of construction currently applied by the industry.

Features: Not applicable

Educational aims: The module extends a basic appreciation of construction technology and management and procurement principles from traditional construction to modern methods of construction. It highlights links between the different stages of the projects life cycle from conception through to design, construction, handover and disposal. 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. The procurement and legal arrangements required to achieve this delivery is also a key outcome.

Outline syllabus: 1. Introduction to Modular Methods of Construction (MMCs)
2. DfMA (Design to Manufacture)
3. Zero & Low Carbon Construction
4. Strategic Decisions and Government Policies
5. RIBA Plan of Work
6. Sustainability Performance Criteria and MMCs
7. Inputs Structural and Service Strategies for MMCs
8. Structural implications for MMC projects
9. Time Scheduling for MMCs
10. Service implications for MMC projects
11. Environmental Assessment of MMCs
12. Procurement of MMC projects - the Government Agenda
13. Legal implications of MMC adoption
14. Smart contracts and MMC
15. Operational Management of MMCs
16. Site Operations of MMCs

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 seminars where modern methods of construction 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. Seminars will provide formative support addressing the outlined syllabus of this module, whilst a portfolio of consultancy-style work will provide summative assessment of the students' progress throughout the year. The module is inspired by real-life practice, hence communication skills and team work will be essential to develop a portfolio of work and present results to a hypothetical client. An investigative approach based on sound scientific method will be fostered to support the writing up of professional reports.

Independent learning includes hours engaged with essential reading and in assessment tasks' preparation and completion.

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

MO1 Examine and explain the impact of MMC on the design, management and construction of new buildings and retrofit projects, as well as MMC's impact on current industry practices and client requirements.

MO2 Analyse DfMA approaches and industrialised construction technologies and services strategies and explain their relationship with design, manufacture techniques, risks, time, cost and overarching social, economic and environmental implications.

MO3 Propose and critically evaluate management plan for on-site and offsite logistics along with procurement, premanufacturing and sustainable strategies for the effective implementation of modern methods of construction in a building case scenario.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 128 hours

Face-to-face learning = 22 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://rl.talis.com/3/uwe/lists/4B19435D-656B-96B1-670C-6F8421A5266C.html?lang=en-GB&login=1

Part 4: Assessment

Assessment strategy: The Strategy:
In current practice MMC advisers would be asked to produce a series of recommendations for a project, table a report and present it for discussion at a client's/board meeting. The assessment strategy for this module follows the same principle. As part of a portfolio of work for a specific case scenario, students will act as MMC Advisers for a hypothetical client. Students will be asked to complete a series of in-class tasks, write a report and deliver a formal presentation of their recommendations and proposals for a project implementing MMC.

Both the report and the presentation of the MMC proposals for the project will be assessed and will provide a blueprint for effective synthesis of the learning material. The report and presentation are integrated and they develop different key skills for professionals engaging with MMC. It is to the advantage of the student's learning that these elements are integrated from their perspective. The meshing of in-class tasks is complimentary in allowing the student to instinctively seize the key concepts and show their synthesis of the ideas whilst also allowing them to consider the in practice and real-world underpinnings of their portfolio of work. An assessment brief will frame the requirements of the portfolio and ensure that all assigned learning outcomes are met.

The collaborative 'consultancy-style' report will be the result of coordinated groupwork, which will collate individual students' tasks comprising 1,500 words in length (per student). A 20-minutes' group presentation including Q&As will convey the main findings of the report to an audience playing the role of the 'client'. Both

assessment tasks will have a 50-50 weighting on the final mark.

Whilst there is a group component and the submission will be done as a group the portfolio mark will be individually awarded.

Resit: Students who do not pass the portfolio will be required to review the group submission and create an individual portfolio of work focussing on a specific task within a given case scenario. The portfolio will comprise 1,500 words in length (per student) and an individual 10-minute presentation with Q&As.

The Resit portfolio of work will follow a similar brief to that described for the first sit, which may include some topic changes and/or a case scenario change. Conversely, the weighting of the individual 1,500-words report and 10-minute presentation will be split 50-50.

Assessment tasks:

Portfolio (First Sit)
Description: Collaborative Report and Group Presentation.

The collaborative 'consultancy-style' report will be the result of coordinated groupwork, which will collate individual students' tasks comprising 1,500 words in length (per student). A 20-minutes' group presentation including Q&As will convey the main findings of the report to an audience playing the role of the 'client'. Both assessment tasks will have a 50-50 weighting on the final mark.

Whilst there is a group component and the submission will be done as a group the portfolio mark will be individually awarded.
Weighting: 100 %
Final assessment: No
Group work: Yes
Learning outcomes tested: MO1, MO2, MO3

Portfolio (Resit)

Description: Portfolio of work including a report and presentation of the proposals for a given case scenario.

Students will be required to review the group submission and create an individual portfolio of work focussing on a specific task within a given case scenario. The portfolio will comprise 1,500 words in length (per student) and an individual 10-minute presentation with Q&As.

The resit portfolio of work will follow a similar brief to that described for the first sit, which may include some topic changes and/or a case scenario change.
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Quantity Surveying [Frenchay] GradDip 2023-24

Construction Project Management [Frenchay] MSc 2024-25

Construction Project Management [Frenchay] MSc 2024-25

Quantity Surveying [Frenchay] - Withdrawn MSc 2024-25

Quantity Surveying [Frenchay] - Withdrawn MSc 2024-25

Quantity Surveying [Frenchay] GradDip 2022-23