Module Specification

Design Representation

Version: 2024-25, v4.0, 19 Apr 2024

Contents

Part 1: Information

Module title: Design Representation

Module code: UBLMTV-15-2

Level: Level 5

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: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: In addition to the Learning Outcomes, the educational experience may explore, develop, and practise but not formally discretely assess the following:
Professional habits of work, time-keeping and punctuality.

Outline syllabus: CONTEXT AND RECENT HISTORY
Students will gain an understanding of the history of architectural IT, its origins in the 1970s and its rapid development through the 1990s into a set of tools which threatened to eclipse a wide range of long-established analogue tools (such as hand-drawing and physical modelling). Students will understand the changes and challenges triggered by the widespread introduction of IT and CAD into the architectural profession – for example, challenges to design process, client relationships, form making, representation and “mass-customisation”.

PROGRAMME SKILL
Students will develop a working knowledge of a range of design programs (AutoCAD, SketchUp and Revit, for example – and rendering and image manipulation programs such as Twinmotion and Photoshop). By working through digital drawing exercises students learn how to apply these programs to their own projects in the Design Studios. The use of this suite of programmes for the visualisation of design will develop in the following order:

2D CAD approaches for architectural and construction drawings.

3D modelling and 3D contextual visualisation.

3D ‘Building Information Modelling’ approaches for architectural and construction drawings.

Students will be able to consider CAD programmes as tools with which they can progress their own design projects (rather than design projects being led by the capabilities and limits of the programs). Students will be encouraged to develop a critical awareness of the capabilities and concomitant restrictions these tools offer their design process and to develop their understand related to:

When each application is most appropriate for use during various stages of project development.

Appropriate strategies and methodologies for organising digital files and project

information.

2D and 3D MODELLING
Students will be able to construct a digital model, from which can be extracted plans, sections, elevations and perspective views.

BUILDING INFORMATION MODELLING
Students will gain a broad grasp of Building Information Modelling (BIM) and the way in which this emerging practice is encouraging collaboration and how a model can be used to increase efficiencies and avoid potential problems. Students will understand the principle of inputting parameters and the mechanisms of parametric modelling. Students will also understand the principle of inputting parameters in order to influence the outcomes of automation. This will involve an understanding of how to produce information out of the 3D model (schedules, legends etc.)

Part 3: Teaching and learning methods

Teaching and learning methods: The module will deliver key information in lecture-based sessions that are supported by software demonstrations and drop-in sessions. These taught sessions will prepare students for two extended elements of coursework.

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

MO1 Explain the place of digital drawing within the history of architectural representation and identify the changes in architectural production that information technology has engendered.

MO2 Acquire proficiency in using industry-standard 2D and 3D drafting, modelling, and visualisation tools employed in architectural design. Demonstrate an understanding of the strengths and limitations of each method, including the most effective contexts for their use.

MO3 Understand and demonstrate the efficient use, management of information and interoperability aspects between software tools, identifying the workflows needed to exchange information including different filetypes and software versions, and their use in representing and communicating architectural drawings.

MO4 Demonstrate understanding of the foundational principles behind using BIM (Building Information Modelling) software as a three-dimensional platform for facilitating architectural communication and the generation of construction information.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

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/265125D2-3463-E1B6-B7F3-7EEEF69ED010.html?lang=en

Part 4: Assessment

Assessment strategy: Digital Portfolio 1 - The digital portfolio consists of two parts, the lecture logs and software tasks. The lecture logs are a reflective record of the semester one lecture series. The software tasks are a series of exercises, worked examples and demonstrations of programs undertaken by the student throughout the teaching block 1 including small problems testing key digital skillset out as individual software tasks.

Digital Portfolio 2 – Students need to produce a Revit model to test their skills on how they can communicate an architectural design and produce several outputs from a 3D model (e.g., plans, sections, elevations, schedules, rendered images,

etc.). That project acts as an introduction to Building Information Modelling and is accompanied by an account of lectures logs for students to reflect on the content delivered in the lectures. This is a Pass/Fail assessment.

Resit Digital Portfolio 1 - a similar brief to that described above, which may include some topic changes.

Resit Digital Portfolio 2 - a similar brief to that described above, which may include some topic changes.

Assessment tasks:

Portfolio (First Sit)
Description: Digital Portfolio 1 (9 A3 pages)
Weighting: 100 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Portfolio (First Sit)
Description: Digital portfolio 2
This is a Pass/Fail assessment.
Weighting:
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Portfolio (Resit)
Description: Digital Portfolio 1 (9 A3 pages)
Weighting: 100 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Portfolio (Resit)
Description: Digital Portfolio 2
This is a Pass/Fail assessment.
Weighting:
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Architecture and Planning [Frenchay] MDes 2023-24

Interior Architecture [Frenchay] BA (Hons) 2023-24

Architectural Technology and Design [Frenchay] BSc (Hons) 2023-24

Architecture and Environmental Engineering [Frenchay] MDes 2023-24

Architecture and Planning [Frenchay] BA (Hons) 2023-24

Architecture and Environmental Engineering [Frenchay] BEng (Hons) 2023-24

Architecture [Frenchay] BSc (Hons) 2023-24

Interior Architecture {Foundation} [Frenchay] BA (Hons) 2022-23

Architectural Technology and Design {Foundation} [Frenchay] BSc (Hons) 2022-23

Architectural Technology and Design [Frenchay] BSc (Hons) 2022-23

Architectural Technology and Design {Foundation} [GCET] BSc (Hons) 2022-23

Architecture and Planning {Foundation} [Frenchay] BA (Hons) 2022-23

Architecture and Environmental Engineering {Foundation} [Frenchay] BEng (Hons) 2022-23

Architectural Technology and Design {Foundation} [GCET] BSc (Hons) 2022-23