



Module Specification

Low/zero Impact Buildings

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Part 1: Information

Module title: Low/zero Impact Buildings

Module code: UBLMQ4-15-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: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: See learning Outcomes

Outline syllabus: Highly efficient buildings;

Zero-carbon and renewable technologies;

Building environmental performance;

Passive solutions;

Renewable materials;

Part L, EPC ratings, BREEAM, and WELL.

BIM 6D

Sustainability analysis (e.g. Thermal, Lighting, Ventilation, Life Cycle Analysis, Carbon footprint, materials...)

Part 3: Teaching and learning methods

Teaching and learning methods: The module will be delivered by means of a series of lectures, seminars and tutorials.

Lectures and seminars will be used to enable students to support their own independent learning by exploring deeper issues pertaining to Low/zero carbon buildings, and receiving formative feedback. Occasional speakers will be used to provide up to date material and context to the applications of the subject area.

A series of tutorials are designed to provide knowledge and practical skills in the use of BIM processes and technology in low/zero carbon buildings.

Presentations by and to the group by the students will also be used to enable students to develop the skills and capabilities to analyse problems, negotiate, make decisions and present solutions to problems. The formative work in the presentation will provide research material useful to the final report.

Directed reading examining the key principles and relevant criteria relating to a

number of topics of importance to Low/zero carbon buildings.

Hours

The module is delivered by way of five study days for face to face teaching. Recorded lectures and the use of email discussion groups of virtual learning environments (VLEs) and other technology-aided means are also employed.

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

MO1 Demonstrate a critical awareness of the sustainability principles, theories and tools to achieve the current sustainability standards, regulations (Part L, BREEAM, PH, WELL...).

MO2 Critically evaluate the potential benefits and issues of an emerging technology, in designing, constructing and operating more efficient, comfortable and sustainable buildings.

MO3 Analyse and critically evaluate strategies used in buildings that achieved and failed to achieve key sustainability targets in areas such as energy use, CO2 emissions and the comfort and well being of occupants.

MO4 Select and effectively plan a 6D BIM process for an emerging technology of your choice (MO2), to perform environmental analyses that support multi-parameter decision-making in construction projects with sustainability targets.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 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/F679CBAA-B0A3-B6C2-139E-A4A7AC83491E.html?lang=en-GB&login=1>

Part 4: Assessment

Assessment strategy: The assessment strategy adopted by this module involves a presentation assessment, supported by a brief report (background and references) to critically reflect on new architectural design processes and technologies around BIM, to achieve sustainability and/or Zero Carbon buildings and their standards (BREEAM, Passivhaus, WELL etc..).

Presentation (1500 word equivalent): Students will be expected to prepare a presentation for a client on a specific architectural design process or new BIM-related technology, planning and applying it to produce sustainable, low-carbon buildings. Students are expected to showcase their application in real-life case studies to provide real-world experience on the use of low or zero carbon buildings. The presentation will be supported by a Background Report (1500 words for background, research, and references): The students will be marked on what they present. The brief report will support the presentation examining the strengths and limitations of the solution proposed using references. The presentation should be independently markable and will be of a level suitable for dissemination to senior management in practice.

Resit

Presentation (1500 word equivalent) and background report (1500 words): A similar brief to that described above, which may include a summary of changes from any previously submitted work.

The background report (1500 words) will not be marked, but is for the student to provide proof of research, references and extra background.

Assessment tasks:

Practical Skills Assessment (First Sit)

Description: New sustainable processes and technologies (equivalent to 1500 words). Students will be expected to prepare a presentation for a client on a specific architectural design process or new BIM-related technology, planning and applying it to produce sustainable, low-carbon buildings.

Students will present during one of the lecturing days and submit the powerpoint with a limit of 15000 words.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Practical Skills Assessment (Resit)

Description: New sustainable processes and technologies (equivalent to 1500 words). Students will be expected to prepare a presentation for a client on a specific architectural design process or new BIM-related technology, planning and applying it to produce sustainable, low-carbon buildings.

Students will present during one of the lecturing days and submit the powerpoint with a limit of 15000 words.

Weighting: 100 %

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:

BIM in Design, Construction and Operation [Frenchay] MSc 2023-24

BIM in Design, Construction and Operation [Frenchay] MSc 2024-25

Architecture [Frenchay] MArch 2024-25

Computational Architecture [Frenchay] MSc 2024-25

Architecture [Frenchay] MArch 2022-23

Architecture {Apprenticeship-UWE} [Frenchay] MArch 2022-23