



Programme Specification

BIM in Design, Construction and Operation [Frenchay]

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Section 1: Key Programme Details

Part A: Programme Information

Programme title: BIM in Design, Construction and Operation [Frenchay]

Highest award: MSc BIM in Design, Construction and Operation

Interim award: PGCert BIM in Design, Construction and Operation

Interim award: PGDip BIM in Design, Construction and Operation

Awarding institution: UWE Bristol

Affiliated institutions: Not applicable

Teaching institutions: UWE Bristol

Study abroad: No

Year abroad: No

Sandwich year: No

Credit recognition: No

Department responsible for the programme: Z-FET Dept of Architecture & Built Environ, Z-FET_CMT Restructure

Contributing departments: Not applicable

Professional, statutory or regulatory bodies:

Royal Institution of Chartered Surveyors (RICS)

Apprenticeship: Not applicable

Mode of delivery: Full-time, Part-time

Entry requirements: For the current entry requirements see the UWE public website.

For implementation from: 01 September 2022

Programme code: K21012

Section 2: Programme Overview, Aims and Learning Outcomes

Part A: Programme Overview, Aims and Learning Outcomes

Overview: The MSc BIM in Design, Construction, and Operation programme is a one year full time postgraduate master's programme.

Educational Aims: The postgraduate programme seeks to provide graduates and professionals with knowledge and skills to pursue a career in the emerging field of Building Information Modelling (BIM). The inter-professional and multi-disciplinary ethos of the Department of Architecture and the Built Environment sets the context for the MSc BIM in Design, Construction, and Operation. The programme draws on the department's research in construction, property, ICT and sustainability. The programme fosters advanced understanding of the wider managerial, professional, technological, legal and sustainable context within which BIM operates, as well as the organisation of the construction industry and its inter-professional nature.

Knowledge and skills developed by the programme are as follows:

Provide advanced understanding of how BIM affects design, construction and operation;

Shed light on the complexity of working in interdisciplinary teams and managing collaborative design, construction and operation;

Provide advanced skills in developing building information models to simulate design, construction, and operation;

Use advanced BIM approach to deliver low carbon building;

Ability to generate complex BIM proposals showing understanding of current and

emerging trends, originality in the application of subject knowledge and, where appropriate, to test new hypotheses and speculations.

Programme Learning Outcomes:

On successful completion of this programme graduates will achieve the following learning outcomes.

Knowledge and Understanding

- A1. Emerging practice in Building Information Modelling (BIM), some of which is at or related to the forefront of built environment discipline
- A2. Role of BIM in designing, building, managing, and maintaining the built environment
- A3. BIM enabled interdisciplinary and collaborative practices
- A4. Role of BIM to deliver the sustainability agenda

Intellectual Skills

- B1. Ability to solve problems in collaboration with members of other disciplines and expertise, and devise alternative solutions to planning, designing and generating a shared BIM model
- B2. Ability to critically analyse and evaluate decisions pertaining to the design, construction or operation of a built environment
- B3. Ability to use key BIM software proficiently
- B4. Apply BIM knowledge and understanding to various situations and contexts

Subject/Professional Practice Skills

- C1. Ability to develop a BIM execution plan that caters for the needs of clients and users
- C2. Ability to produce BIM models that demonstrate an emphasis on a collaborative approach to the design, construction, and operation of the built environment
- C3. Ability to produce BIM models that fully consider sustainable built environments

- C4. Ability to reflect on the legal and the cost-benefit implications of co-design, co-production, co-sharing, and archiving of BIM information

Transferable Skills and other attributes

- D1. Ability to communicate to both technical and lay audiences strategies that may include the planning, production, organisation, and structure of a shared BIM project, through the use of a variety of media
- D2. Ability to work collaboratively with other students and members of other professions and disciplines in a spirit of trust and honesty
- D3. Ability to deal with complex issues both systematically and creatively, make sound judgments in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences
- D4. Demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level
- D5. Continue to advance knowledge and understanding, developing new skills to a high level

Part B: Programme Structure

Year 1

Full time students must take 180 credits from the modules in Year 1.

Part time must take 75 credits from the modules in Year 1.

Year 1 Compulsory Modules (Full Time)

Full time students must take 180 credits from the modules in Compulsory Modules (Full Time).

Module Code	Module Title	Credit
UBLMM4-30-M	BIM in Business and Practice 2022-23	30
UBLMHF-15-M	BIM in Construction Operations 2022-23	15
UBLMGW-15-M	BIM in Design Coordination 2022-23	15
UBLMMK-15-M	BIM in Operation and Maintenance 2022-23	15

UBLM41-15-M	Construction Procurement and Law 2022-23	15
UBLM79-15-M	Construction Project Management Practice 2022-23	15
UBLLY7-60-M	Dissertation 2022-23	60
UBLMQ4-15-M	Low/zero Impact Buildings 2022-23	15

Year 1 Compulsory Modules (Part Time)

Part time students must take 75 credits from the modules in Compulsory Modules (Part Time).

Module Code	Module Title	Credit
UBLMM4-30-M	BIM in Business and Practice 2022-23	30
UBLMGW-15-M	BIM in Design Coordination 2022-23	15
UBLM41-15-M	Construction Procurement and Law 2022-23	15
UBLM79-15-M	Construction Project Management Practice 2022-23	15

Year 2

Part time students must take 105 credits from the modules in Year 2.

Year 2 Compulsory Modules (Part Time)

Part time students must take 105 credits from the modules in Compulsory Modules (Part Time).

Module Code	Module Title	Credit
UBLMHF-15-M	BIM in Construction Operations 2023-24	15
UBLMMK-15-M	BIM in Operation and Maintenance 2023-24	15
UBLLY7-60-M	Dissertation 2023-24	60
UBLMQ4-15-M	Low/zero Impact Buildings 2023-24	15

Part C: Higher Education Achievement Record (HEAR) Synopsis**Part D: External Reference Points and Benchmarks**

Professional Context:

Building Information Modelling (BIM) is emerging as the industry standard approach to the modelling and management of building lifecycle; from design and construction to maintenance, and demolition. The Government's Construction Strategy has pushed forward the programme for adopting BIM, as all public funded projects must meet the BIM protocol. The Government has stipulated that BIM will become compulsory on publicly procured projects from 2016. Consequently, future bidders on public building projects would be required to use BIM, and this trend is likely to affect also privately procured building projects. BIM is expected to become a major enabler for greater productivity, and to deliver reduced cost and risk within the construction industry. Above all, it will help the industry to meet its obligations for a low-carbon future. However, lack of education, skills and professionals are cited amongst the major obstacles for the adoption of BIM as a collaborative platform in the industry. The PGc/PGd, MSc Building Design and Information Management seeks to respond to this challenge and opportunity. It offers education and skills in BIM to critically engaged design, construction and built environment professionals.

The research interests of the Faculty:

The subject focus of BIM are closely related to the established and emerging research interests of the faculty. The construction and property research centre (CPRC) has a proven track record of research expertise and attracting research funding in BIM. For instance:

Title: The Virtual Construction Site: A decision Support System for Construction Planning Source: EPSRC – Principal Investigator GR/N00906/01 (P) In conjunction with University College London (UCL), UMIST, Teeside University and over 20

Industrial collaborators.

Title: Simulating the Performance of Hybrid Concrete Structures Using Virtual Prototyping Techniques Source: EPSRC – Investigator GR/R53623/

Title: ICT Builders for SME Survival. Source: European Social Funding.

QAA descriptors:

The programme has been designed with reference to the QAA Masters descriptors 2010 which benchmarks the structure and learning outcomes for masters programmes.

Part E: Regulations

Approved to University Regulations and Procedures.