Module Specification

BIM in Operation and Maintenance

Version: 2026-27, v3.0, Approved

Contents

Part 1: Information

Module title: BIM in Operation and Maintenance

Module code: UBLMMK-15-M

Level: Level 7

For implementation from: 2026-27

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: This module explores the use of BIM in the operational phase of built assets, focusing on its integration with Operations and Maintenance (O&M) and Facilities Management (FM) practices for existing and newly built facilities. Students will develop both theoretical knowledge and practical skills, understanding how BIM and emerging technologies are used to manage existing and new assets effectively. The module also fosters problem-solving through real-life scenarios and a case

study-based assessment, providing practical experience that is directly relevant and valuable for a professional career in the industry.

Features: Not applicable

Educational aims: This module aims to develop students' knowledge and practical skills in applying BIM to Operations and Maintenance (O&M) and Facilities Management (FM), through theoretical sessions and problem-solving real-life scenarios to prepare them for professional practice.

Outline syllabus: Topics covered likely to include, but not limited to:

Standards and frameworks for BIM implementation and asset management.

Traditional operational practices in built assets: the need for change.

BIM for Asset Operation and Maintenance (O&M).

Integration of BIM with Facilities Management (FM) systems.

Asset Information Model (AIM).

Stakeholder involvement: owners and users in BIM-enabled FM and O&M

Working with existing infrastructure: reality data capture and data digitalisation

Emerging trends and innovations in BIM for the operational phase (e.g., asset tracking, Internet of Things (IoT), Artificial Intelligence (AI), digital twins, smart cities, etc.)

Part 3: Teaching and learning methods

Teaching and learning methods: The module is taught through a blended learning approach, combining theoretical and practical activities, with primarily face-to-face sessions supported by online independent learning. It is structured across a series of

teaching days (i.e., Block Days), where students will develop a strong understanding of BIM and innovative technologies in the operational phase of both existing and newly built assets.

Teaching includes lectures delivered by the module team, as well as occasional guest lectures, which provide industry insights and practical perspectives.

Practical activities include workshops using relevant state-of-the-art technologies for the operational phase, designed around real-life scenarios to enhance understanding of their application. Students will be introduced to these technologies through software tutorials, which can be reviewed online, and will have opportunities to receive in-class support from the teaching team, complete the workshops, and engage in discussions with peers to foster collaborative learning.

Both lectures and practical activities contribute to students' knowledge and understanding of how to approach and develop their final assessment, which takes the form of a case study.

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

MO1 Critically analyse the role of BIM and innovative technologies in the operation and maintenance of existing and new assets, evaluating their effectiveness, implementation challenges, and potential to address operational issues.

MO2 Critically evaluate how BIM can be integrated with Facilities Management (FM) systems to optimise data management, decision-making, and asset lifecycle performance.

MO3 Develop and justify BIM implementation strategies in the operational phase of facilities, considering the needs of assets, owners, and occupants, as well as the challenges of real-world application.

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://uwe.rl.talis.com/modules/ublmmk-15-m.html

Part 4: Assessment

Assessment strategy: The assessment strategy is based on a case study, completed independently by each student, which accounts for 100% of the module.

The case study involves an existing facility and requires students to conduct research on the facility type, relevant Facility Management M and Operation and Maintenance (O&M) practices, and applicable BIM technologies. Students will analyse the current state of the facility, consider the needs of the owner and occupants, and make justified assumptions where necessary. Using this research, they will develop a proposal for the owner, presenting a BIM-enabled FM and O&M strategy that addresses current operational needs and issues while highlighting both the potential benefits and challenges of implementation.

The same strategy will apply to the resit.

Assessment tasks:

Case Study (First Sit)
Description: Develop a BIM-enabled Facilities Management (FM) and Operations and Maintenance (O&M) strategy for a given project (2500 words).
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Case Study (Resit)

Description: Develop a BIM-enabled Facilities Management (FM) and Operations and Maintenance (O&M) strategy for a given project (2500 words).
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:

BIM in Design, Construction and Operation [Frenchay] MSc 2025-26

BIM in Design, Construction and Operation [Frenchay] MSc 2026-27

BIM in Design, Construction and Operation [Frenchay] MSc 2026-27