



## **Module Specification**

# Energy Management and Performance Evaluation

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## Part 1: Information

**Module title:** Energy Management and Performance Evaluation

**Module code:** UBLMGP-15-3

**Level:** Level 6

**For implementation from:** 2023-24

**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 Learning Outcomes, the educational experience may explore, develop, and practise but not formally discretely assess the following:

Professionalism with commercial clients through the quality of agendas, minutes, formal emails and general conduct.

**Outline syllabus:** This is an indicative list of what the syllabus will contain. Subjects will not necessarily be taught in this order nor be of equal weighting:

Management in the Energy Industry: structure of the energy supply industry, energy-use regulations and certification schemes, incentive schemes, energy in facility management, energy markets, tariffs.

Data Gathering and Analysis: data gathering techniques, energy audits, monitoring and instrumentation, metering and sub-metering, EBMS systems, surveying, CUSUM analysis, Sankey diagrams, benchmarking.

Performance Evaluation: technical and financial analysis of: mechanical systems, control systems, electrical systems; encouraging energy efficient behaviour change; soft landings.

### **Part 3: Teaching and learning methods**

**Teaching and learning methods:** Contact time; lectures, tutorials, computer labs and visits: 36 hours

Assimilation and development of knowledge: 74 hours

Presentation preparation: 10 hours

Coursework Preparation: 30 hours

Total study time: 150 hours

Scheduled learning

For directed study students are expected to undertake the tasks assigned to them

during the lectures/tutorials, building up a portfolio of work that will support final presentations.

#### Independent learning

For self-directed study, students are expected to undertake a comprehensive review of the literature relevant to the core topics and their chosen individual topics. Each element of syllabus will involve an introduction of the topics through lectures, when students will receive an explanation of the context of the subject and an indication of the depth to which they are expected to study it. Students will be supported in their study with on-line resources including publications, websites, video clips and blackboard resources.

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

**MO1** Represent the views of a stakeholder in a government consultation into energy-use regulations

**MO2** Synthesise the role of an Energy Manager in preparing a feasibility report for an energy related project in an existing building, accounting for energy generation/efficiency projections, technology assessment, regulation compliance, qualification for incentive schemes, lifecycle costs and user acceptability

**MO3** Undertake a formal post-occupancy evaluation – covering the areas of functionality, comfort, energy, sustainability and user satisfaction – using recognised procedures, related computer software and field data collected using a range of measurement and audit techniques

**MO4** Present their post-occupancy evaluation and feasibility study to a critical audience, defending their methodology processes and theoretical foundations, while clearly evaluating the risks and opportunities

**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](https://uwe.rl.talis.com/modules/ublmgp-15-3.html) via the following link <https://uwe.rl.talis.com/modules/ublmgp-15-3.html>

## **Part 4: Assessment**

**Assessment strategy:** The Strategy:

This assessment is designed to give the students a 'real world' focus around which all aspects of the topics can be related. Working in teams, with each team assessing a case study organisation and case study building, students will undertake industry standard assessments and use this as a basis to develop individual feasibility studies of energy improvements to the building. Undertaking this work will require student to reflect on all aspects of the module and provide a deep learning experience.

The Assessment:

Presentation - presentation of the feasibility study by the students and critical examination by the assessment team. Each student will present their case study using support material such as posters and handouts.

Report - A feasibility study that examines the performance of an existing energy system and evaluates a related upgrade both technically and financially, clearly assessing the risks and opportunities.

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

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

**Assessment tasks:**

**Report (First Sit)**

Description: Feasibility report (2000 words)

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3

**Presentation (First Sit)**

Description: Case Study presentation (20 minutes)

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO4

**Report (Resit)**

Description: Feasibility report (2000 words)

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3

**Presentation (Resit)**

Description: Case Study presentation (20 minutes)

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO4

**Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Building Services Engineering [SHAPE] BEng (Hons) 2023-24

Building Services Engineering [SHAPE] BEng (Hons) 2022-23

Architectural Technology and Design {Top-Up} [Aug][PT][SHAPE][2yrs] BSc (Hons)  
2022-23

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

Building Services Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2021-22

Building Services Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons)  
2020-21

Building Services Engineering {Apprenticeship-UWE} [Sep][FT][Frenchay][5yrs]  
BEng (Hons) 2020-21

Building Services Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons)  
2020-21

Architecture and Environmental Engineering [Sep][FT][Frenchay][4yrs] BEng (Hons)  
2020-21

Building Services Engineering [Sep][PT][Frenchay][5yrs] BEng (Hons) 2020-21

Architecture and Environmental Engineering [Sep][SW][Frenchay][5yrs] BEng (Hons)  
2019-20

Architecture and Environmental Engineering {Foundation} [Sep][FT][Frenchay][5yrs]  
BEng (Hons) 2019-20

Architecture and Environmental Engineering {Foundation} [Sep][SW][Frenchay][6yrs]  
BEng (Hons) 2018-19

Architectural Technology and Design [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Architectural Technology and Design [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-  
21

Architectural Technology and Design {Foundation} [Sep][FT][Frenchay][4yrs] BSc  
(Hons) 2020-21

Architectural Technology and Design {Foundation} [Sep][SW][Frenchay][5yrs] BSc  
(Hons) 2019-20