Module Specification

Building Services Applications

Version: 2023-24, v5.0, 25 Jan 2023

Contents

Part 1: Information

Module title: Building Services Applications

Module code: UBLMTB-30-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Environment & Technology

Department: FET Dept of Architecture & Built Environ

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Architecture and the Built Environment

Module type: Module

Pre-requisites: Building Physics and Services 2023-24

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: 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:

Passive Thermal: weather, climate and design conditions. Heat gains and losses, heating and cooling loads.

HVAC: ventilation strategies, pipework systems, ductwork systems, psychometrics, jets and plumes, emitters, pump and fan laws, refrigeration and heat rejection.

Lighting Services: user requirement, design calculations, lamp technologies, luminaire technologies, energy efficiency, health and comfort performance.

Electrical Power Distribution: maximum load estimation, cable distribution strategies, cable calculation, earthing, motors, motor control, real and apparent power.

Architectural Acoustics and Noise Control: reverberation times, absorption materials, room modes, ray tracing, auditorium design, façade design, attenuation.

Part 3: Teaching and learning methods

Teaching and learning methods: Scheduled learning includes lectures, seminars, tutorials, demonstration, practical classes and workshops and external visits.

Lectures are used to introduce scientific and cultural concepts and to demonstrate analytic methods.

Tutorials are used to practise the analysis of elements of complex engineering services.

Laboratory work and site visits illustrate and give context to the engineering services which are the subject of the module.

Independent learning includes hours engaged with suggested reading, example design and analysis exercises, and the preparation and completion of assignments.

Activity (hrs)

Contact time (72)

Assimilation and development of knowledge (148)

Exam preparation (40)

Coursework preparation (40)

Total study time (300)

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

MO1 Explain the behaviour of building service systems in terms of underlying physical properties and principles

MO2 Select design criteria appropriate to a range of building services systems

MO3 Select items of equipment to meet qualitative and quantitative performance criteria

MO4 Analyse building services systems mathematically to determine their performance and to test design assumptions.

MO5 Produce written justifications of decisions supported by referenced evidence.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

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/ublmtb-30-2.html

Part 4: Assessment

Assessment strategy: The Strategy:
The Analysis and Calculation reports require the students to demonstrate, throughout the academic year, that they can perform the analytic procedures introduced in the lectures. Tutorials and examples classes support the necessary learning.

The Assessment:

Report 1: Explain the behaviour of building service systems in terms of underlying physical properties and principles.

Report 2: Show the development of further strands of knowledge and integration of these separate topics, and to develop students' academic writing with particular emphasis being placed on the managing and referencing of evidence.

Resit Report 1 - a similar brief to that described above, which may include some topic changes.
Resit Report 2 - a similar brief to that described above, which may include some topic changes.

Assessment components:

Report (First Sit)
Description: Report 1 (2,000 words)
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2, MO3, MO4

Report (First Sit)
Description: Report 2 (2,000 words)
Weighting: 50 %
Final assessment: Yes
Group work: No

Learning outcomes tested: MO1, MO5

Report (Resit)
Description: Report 1 (2,000 words)
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2, MO3, MO4

Report (Resit)
Description: Report 2 (2,000 words)
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO5

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Building Services Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2022-23

Architecture and Environmental Engineering [Sep][FT][Frenchay][4yrs] BEng (Hons) 2022-23

Architecture and Environmental Engineering [Sep][SW][Frenchay][5yrs] BEng (Hons) 2022-23

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

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

Building Services Engineering {Apprenticeship-UWE} [Sep][FT][Frenchay][5yrs] BEng (Hons) 2021-22

Building Services Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2021-22

Building Services Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2021-22

Architecture and Environmental Engineering {Foundation} [Sep][FT][Frenchay][5yrs] BEng (Hons) 2021-22

Architecture and Environmental Engineering {Foundation} [Sep][SW][Frenchay][6yrs] BEng (Hons) 2021-22