



Module Specification

Engineering Principles (Building Engineering)

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Part 1: Information

Module title: Engineering Principles (Building Engineering)

Module code: UBLLWQ-15-1

Level: Level 4

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

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: 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: Underpinning Physics:

Force, energy, work and power.

Thermodynamics and Fluids:

Thermodynamic laws, reversible processes, steady flow energy equation, gas laws, pressure in static fluids, atmospheric pressure, Bernoulli's equation, flow measurement device

Statics and Dynamics:

Forces, moments and centre of gravity, equilibrium and reactions in statically determinate structures

Bending moment and shear force diagrams. Truss analysis, Axial stress and strain

Kinematics, projectiles, angular motion, Newton's laws of motion, and vibration

Part 3: Teaching and learning methods

Teaching and learning methods: Typically the scheduled teaching hours take the form of whole group lectures, workshops, laboratories and tutorials

Contact time: 36 hours

Assimilation and development of knowledge: 74 hours

Examination and assessment preparation: 40 hours

TOTAL: 150 HOURS

Scheduled learning: Lectures, seminars, tutorials, and laboratory demonstrations.

Independent learning: Directed reading, and laboratory work.

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

MO1 Manipulate units and expressions defining physical properties

MO2 State and apply physical laws relating to statics and dynamics to the solution of engineering problems

MO3 State and apply physical laws relating to thermodynamics and fluids to the solution of engineering problems

MO4 Communicate in written form the relationship between underlying physical laws and engineering principles

MO5 Apply experimental method to laboratory demonstrations of engineering principles

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/ubllwq-15-1.html) via the following link <https://uwe.rl.talis.com/modules/ubllwq-15-1.html>

Part 4: Assessment

Assessment strategy: Online Assignment - consists of 4 online tests over the module and the final mark is calculated by averaging the marks of four e-tests. The four e-tests are taken outside the class throughout the year after each of the main topics are completed. Students have three attempts at each test with the highest scoring attempt recorded as their test score.

Resit Online Assignment - students shall retake the online tests which shall follow the same format as the first attempt.

Assessment components:

Online Assignment (First Sit)

Description: Average mark of four e-tests

Weighting: 100 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

Online Assignment (Resit)

Description: Average mark of four e-tests

Weighting: 100 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Architecture and Environmental Engineering [Frenchay] MDes 2023-24

Building Services Engineering {Apprenticeship-UWE} [Sep][FT][Frenchay][5yrs]

BEng (Hons) 2022-23

Architecture and Environmental Engineering {Foundation} [Sep][SW][Frenchay][6yrs]

BEng (Hons) 2022-23

Architecture and Environmental Engineering {Foundation} [Sep][FT][Frenchay][5yrs]

BEng (Hons) 2022-23

Building Services Engineering {Foundation} [GCET] BEng (Hons) 2022-23

Building Services Engineering {Apprenticeship-UWE} [Frenchay] BEng (Hons) 2022-

23

Architecture and Environmental Engineering {Foundation} [Frenchay] BEng (Hons)

2022-23