



Module Specification

Mechanisms and Structures

Version: 2023-24, v4.0, 15 Jun 2023

Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	3
Part 4: Assessment.....	5
Part 5: Contributes towards	6

Part 1: Information

Module title: Mechanisms and Structures

Module code: UBLFQ9-30-1

Level: Level 4

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

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: See learning objectives.

Outline syllabus: This module is an introduction to mechanical engineering principles through applied mathematics, analytical reasoning, observation & physical prototyping.

Introduction to Engineering.

Design Engineering product case studies.

Core Maths Skills.

Force, Moment and Equilibrium.

Mechanisms, Machines, work, energy and power, Springs and Pressure.

Direct Stress & Strain, Shear Stress and Torsion, Cantilevers & Beams, Truss frames.

The syllabus may also include some of the following topics:

Friction, Electricity, Ergonomics, Graphical methods, Centre of gravity and balance, Buckling.

Part 3: Teaching and learning methods

Teaching and learning methods: Teaching and Learning Strategy for this module is 'lectorial' based learning in which a topic lecture will introduce the students to the assigned or coming up exercises and/or project which supports and frames their acquisition of topic specific knowledge and skills.

The exercises and projects are designed to facilitate competency acquisition through the didactic and applied learning, building knowledge through the introduction of new subject matter and reinvestment of gained knowledge and skills. The tutorial portion of the studio is designed for the learner to have access to tutorial support, work in the close proximity of classmates and to self-assess his/her progress through the exercises and/or projects.

Students will be expected to come prepared for the module sessions with in-process or completed work and supplies. At times though the run students will be required to pre-read on topics and selected materials, research and orally present on the topic.

Knowledge and Skills reinvestment from parallel running modules are assessable criteria and essential for progression through the curriculum.

Additional tutorial support is offered through individual appointments with the module tutors and peer learning.

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

MO1 Consideration and apply the appropriate mathematical and engineering principles to a particular design problem

MO2 Apply a systematic approach to problem solving using appropriate design tools and techniques

MO3 Evaluate technical risks and address risk in design methodology

MO4 Apply analytical skills in relation to designed objects including the ability to undertake visual analysis and to analyse designed objects in relation to their context

MO5 Apply creative and logical thinking processes as well as design methodologies to the creation of design solutions

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 132 hours

Face-to-face learning = 96 hours

Total = 300

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ublfq9-30-1.html) via the following link <https://uwe.rl.talis.com/modules/ublfq9-30-1.html>

Part 4: Assessment

Assessment strategy: The group projects is assessed through a 5 minute presentation with peers and tutors followed by a group discussion.

The individual project is assessed via a digital submission.

Peer and tutor formative feedback is also provided during the development process of the projects.

The resit strategy will follow the same brief and structure.

Assessment tasks:

Project (First Sit)

Description: Project 1-

The group project is assessed through a 5 minute presentation with peers and tutors followed by a group discussion.

Weighting: 50 %

Final assessment: No

Group work: Yes

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

Project (First Sit)

Description: Project 2 - The individual project is assessed via a digital submission.

Weighting: 50 %

Final assessment: No

Group work: No

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

Project (Resit)

Description: Project 1 - The group project is assessed through a 5 minute presentation with peers and tutors followed by a group discussion.

Weighting: 50 %

Final assessment: No

Group work: Yes

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

Project (Resit)

Description: Project 2 - The individual project is assessed via a digital submission.

Weighting: 50 %

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:

Product Design Technology [Frenchay] BSc (Hons) 2023-24

Product Design Technology {Foundation} [Frenchay] BSc (Hons) 2022-23