Module Specification

Innovation, Technology and Design

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Contents

Part 1: Information

Module title: Innovation, Technology and Design

Module code: UBLFM9-15-3

Level: Level 6

For implementation from: 2022-23

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: Standard

Pre-requisites: Physical Computing 2022-23, Product Design Technology Studio 2 2022-23

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The module is formed around 1 or 2 advanced technical design projects, which will be presented in an exhibition format. The module will be delivered through, lectures, readings and seminar discussion

Pre-requisites: UBLLYA-60-2 Product Design Technology Studio 2, UBLF9A-15-2 Physical Computing.

Features: Not applicable

Educational aims: See learning outcomes.

Outline syllabus: The module is formed around 1 or 2 advanced technical design projects, which will be presented in an exhibition format. The module will be delivered through, lectures, readings and seminar discussion.

In order to stay current the nature of the specific projects and themes explored in this module will adapt to match emergent trends in; technology, materials and design. They are likely to include such themes as:

Design Strategies:

Deeper understanding of the design process for complex technical design projects and how to integrate the tools and skills learned in other modules into that process.

Design Knowledge:

Material and manufacturing process selection, Product Design Specification and constraints. Applied Ergonomics human strength and people size. Concept selection and evaluation methods and strategies. Mechanical product design and design detailing.

Creating 3D test rigs and working prototypes to experimentally analyse and develop designs.

Advanced Computation Design Techniques:

Such as Finite Element Analysis mechanical simulations or Parametric and generative design.

The taught content is adapted to support the projects that individual students are

studying in a particular year, hence while all of the preceding topics will be covered in the module, the depth of coverage in a particular year and by a particular student will vary.

Part 3: Teaching and learning methods

Teaching and learning methods: Teaching and Learning Strategy for this module is applied exercise and project based learning in which a topic lecture will introduce the students to the assigned or up coming up contextual information which supports and frames their acquisition of topic specific knowledge, skills and supports their project work in other modules.

The exercises and projects are designed to facilitate competency acquisition through applied and indirect learning, building knowledge through the introduction of new subject matter and reinvestment of gained knowledge and skills. The tutorial portion of the studio time 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.

Exercise and Project work outside of scheduled hours is an essential component to the successful completion of the assigned work. Students will be expected to come prepared for the module sessions with in-process or completed work and supplies.

Feedback will be in the form of direct verbal and, or written. Marking criteria and assessment format will be clearly indicated on the Project Brief made accessible to the students at the beginning of each project.

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

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

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

MO1 Drafting Product Design Specification (PDS), design reports and present design ideas in a rational and coherent manner

MO2 Researching and applying legal and statutory factors, including safety standards

MO3 Consideration and application of the appropriate mathematical and engineering principles to a particular design problem

MO4 Selecting and applying appropriate 2D, 3D and CAD techniques

MO5 Researching, selecting, evaluating, manipulating and managing information relevant to the analysis and synthesis of product design solutions

MO6 Applying analytical skills in relation to designed objects including the ability to undertake visual analysis and to analyse designed objects in relation to their context

MO7 Applying a systematic approach to problem solving using appropriate design tools and techniques

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 64 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 via the following link https://uwe.rl.talis.com/modules/ublfm9-15-3.html

Part 4: Assessment

Assessment strategy: Summative Assessment: The project will be evaluated in both presentation (controlled condition evaluations) and direct submission.

Assessment criteria will made available to the students at the beginning of each project on the project brief. The exhibition in component A will be formed from the visuals and prototypes shown in the presentation.

The presentations will be made in groups, students will present their own part of that group project and will be marked individually for their own work, while accounting for the collaboration within this group work. (A)

For the resit students will undertake a similar individual project of reduced scope. (A)

Formative Assessment: Regular “work-in-process” critiques and one-to-one tutoring throughout the project.

Feedback: Peer and tutor feedback throughout the module and at exhibition critiques. Self-assessment at the exhibition. Written feedback on completion of the projects.

Assessment components:

Presentation - Component A (First Sit)
Description: Group presentation and exhibition
Weighting: 50 %
Final assessment: Yes
Group work: Yes
Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7

Project - Component B (First Sit)
Description: Individual project
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7

Presentation - Component A (Resit)

Description: Individual presentation
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested:

Project - Component B (Resit)
Description: Individual project
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Product Design Technology [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Product Design Technology [Sep][SW][Frenchay][4yrs] BSc (Hons) 2019-20

Product Design Technology {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20

Product Design Technology {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19