



MODULE SPECIFICATION

Part 1: Information			
Module Title	Mechanical Design		
Module Code	UBLFM9-15-3	Level	Level 6
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Architecture and the Built Environment
Department	FET Dept of Architecture & Built Environ		
Module type:	Standard		
Pre-requisites	Product Design Engineering 2017-18, Product Design Technology Studio 2 2017-18		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Overview: Pre-requisites UBLFGA-45-2 Product Design Technology Studio 2, UBLFN9-30-2 Mechanical Engineering Design</p> <p>Educational Aims: See learning outcomes.</p> <p>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.</p> <p>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:</p> <p>Design Strategies:</p> <p>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.</p> <p>Design Knowledge:</p>

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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.

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.

Part 3: Assessment

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

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First Sit Components	Final Assessment	Element weighting	Description
Project - Component B		50 %	Individual project
Presentation - Component A	✓	50 %	Group presentation and exhibition
Resit Components	Final Assessment	Element weighting	Description
Project - Component B		50 %	Individual project
Presentation - Component A	✓	50 %	Individual presentation

Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	Module Learning Outcomes	Reference
	Drafting Product Design Specification (PDS), design reports and present design ideas in a rational and coherent manner	MO1
	Researching and applying legal and statutory factors, including safety standards	MO2
	Consideration and application of the appropriate mathematical and engineering principles to a particular design problem	MO3
	Selecting and applying appropriate 2D, 3D and CAD techniques	MO4
	Researching, selecting, evaluating, manipulating and managing information relevant to the analysis and synthesis of product design solutions	MO5
	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	MO6
Applying a systematic approach to problem solving using appropriate design tools and techniques	MO7	
Contact Hours	Independent Study Hours:	
	Independent study/self-guided study	64
	Total Independent Study Hours:	64
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	36
	Project work (individual or group)	50
	Total Scheduled Learning and Teaching Hours:	86
Hours to be allocated	150	

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	Allocated Hours	150
Reading List	<i>The reading list for this module can be accessed via the following link:</i> https://uwe.rl.talis.com/modules/ublfm9-15-3.html	

Part 5: Contributes Towards

This module contributes towards the following programmes of study: