MODULE SPECIFICATION

Part 1: Information			
Module Title	Information Technology for Designers		
Module Code	UBLMTV-15-2	Level	Level 5
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:	Project		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: In addition to the Learning Outcomes, the educational experience may explore, develop, and practise but not formally discretely assess the following:
Professional habits of work, time-keeping and punctuality.
Working in groups to demonstrate the concepts of BIM.

Outline Syllabus: CONTEXT AND RECENT HISTORY
Students will gain an understanding of the history of architectural IT, its origins in the 1970s and its rapid development through the 1990s into a set of tools which threatened to eclipse a wide range of long-established analogue tools (such as hand-drawing and physical modelling). Students will understand the changes and challenges triggered by the widespread introduction of IT and CAD into the architectural profession – for example, challenges to design process, client relationships, form making, representation and “mass-customisation”.

PROGRAMME SKILL
Students will develop a working knowledge of a range of design programs (AutoCAD, SketchUp, Rhino and Revit, for example – and image manipulation program Photoshop). By working through digital drawing exercises students learn how to apply these programs to their own projects in the Design Studios. The use of this suite of programmes for the visualisation of design will develop in the following order:

Basic conceptual and photographic and 2-d contextual imaging.

Conceptual 3-d imaging/modelling and 3-d contextual imaging.

2-d CAD approaches for architectural and construction drawings.

3-d 'Building Information Management' approaches for architectural and construction drawings.

Students will be able to consider CAD programs as tools with which they can progress their own design projects (rather than design projects being led by the capabilities and limits of the programs). Students will be encouraged to develop a critical awareness of the capabilities and concomitant restrictions these tools offer their design process and to develop their understand related to:

When each application is most appropriate for use during various stages of project development.

Appropriate strategies and methodologies for organising digital files and project information.

PARAMETERS
Students will understand the principles of parameters and the mechanisms of parametric design. Students will understand the principle of inputting parameters in order to influence the outcomes of automation. This will involve an understanding of spreadsheets and utilising spreadsheets as a design tool and information modelling programmes.

3D MODELLING
Students will be able to construct a digital model, from which can be extracted plans, sections, elevations, perspective views and shadow studies.

BUILDING INFORMATION MANAGEMENT
Students will gain a broad grasp of Building Information Modelling (BIM) and the way in which this emerging practice is encouraging collaboration through the sharing of a digital model, and how that model can be used to increase efficiencies and avoid potential problems.

Teaching and Learning Methods: The module will deliver key information in lecture-based sessions that are supported by workshop and seminars. These taught sessions will prepare students for two extended elements of coursework. Within this teaching model the hours allocated are as follows (total 150 hours):

36 hours contact time that includes lecture based sessions, workshop session exploring practical design issues related to project work and skills workshops led by technical support staff.

52 hours are scheduled for the assimilation and development of knowledge through coursework preparation in the form of the feasibility study and the synopsis.

62 hours are identified for final preparation of the assessed elements.

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; learning; supervised time in studio/workshop.

Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc.

These sessions constitute an average time per level. Scheduled sessions may vary slightly depending on the module choices you make.

Part 3: Assessment

The module has two assessed elements:

A Digital Portfolio - that collects all the exercises, worked examples and demonstrations of programmes undertaken by the student throughout the Module including small problems testing key digital skills (drawing shapes, extracting sectional information, copying a hand drawing in digital form, or projecting plan information into 3-dimensions for example).

A Digital Project – a small discrete design project undertaken in groups (a cladding system, a reception desk, a tree-house or a single-storey folly for example) that tests the student's ability to work in groups, draw and organise information in digital form and their awareness and use of digital manufacturing techniques. The project acts as an introduction to BIM.

Both Elements must be passed separately at a Pass mark of 40% or above.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component A		50 %	Report on digital project (8 A3 pages maximum)
Portfolio - Component A	✓	50 %	Digital portfolio
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component A		50 %	Report on digital project (8 A3 pages maximum)
Portfolio - Component A	✓	50 %	Digital portfolio

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**
Explain the place of digital drawing within the history of architectural representation and identify the changes in architectural production that information technology has engendered	MO1
Discuss and describe a variety of digital visualisation tools commonly used by architectural designers in industry and explain the primary advantages and limitations of each approach, including the situations that are most appropriate for their individual use	MO2
Demonstrate a basic understanding of the application of digital conceptual design and photographic imaging tools commonly used by architectural designers	MO3
Demonstrate a basic understanding of the application of conceptual 3D imaging/modelling techniques commonly used for initial concept design	MO4
Demonstrate knowledge of and ability to apply the basic 2-dimensional CAD-based drawing tools required for the production of industry standard construction drawing documents, including: drawing of primitive elements individually and in combination in order to create comprehensive construction images; editing, modification, dimensioning and layout tools; organisational, grouping and filtering strategies for elements within 2D digital CAD files and broader sets of project documents	MO5
Understand the logic and protocols necessary for efficient file management, including the saving of information as layout, location, assembly and component,	MO6

	and layering within the drawing files in order to produce industry standard design, presentation and construction drawing documents	
	Comprehend, albeit in simple terms, the collaborative process that is supported by 3-dimensional Building Information Modelling software; such that the student can follow the principles by which a 3–dimensional workspace is created for simulation of a building design	MO7

Contact Hours	**Independent Study Hours:**	
	Independent study/self-guided study	114
	Total Independent Study Hours:	114
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	36
	Total Scheduled Learning and Teaching Hours:	36
	Hours to be allocated	150
	Allocated Hours	150
Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/modules/ublmtv-15-2.html	

Part 5: Contributes Towards
This module contributes towards the following programmes of study: