

MODULE DESCRIPTOR

Module Title

Digital Construction and Innovative Design

Reference	SU4500	Version	1
Created	August 2023	SCQF Level	SCQF 10
Approved	January 2024	SCQF Points	30
Amended		ECTS Points	15

Aims of Module

To provide the student with the ability to identify and appropriately apply best practice with regard to new and emerging working practices at the conceptual to the detailing stages of a digital design based project.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Critically appraise new and emerging working practices in conceptual and detailed design in architecture, based upon parametric, generative, and digital paradigms.
- 2 Develop understanding in current working practices in research of building information modelling and digital generative design.
- 3 Critically appraise the digital work flow in current and future design processes and to professionally represent the adoption of future digital practice
- 4 justify methodologies and design strategies undertaken.

Indicative Module Content

New and emerging trends in digital conceptual design, theory and practice; architectural conceptual design, including an historical and philosophical background; exploration of digital tools available at the conceptual and detail design stages; parametric modelling at the detail design stage; interoperability; design team collaboration, including a consideration of collaborative and interactive virtual design environments; building information modelling (BIM); project data modelling. Exploration of digital manufacture and construction.

Module Delivery

The module is delivered by lectures, interactive workshops, case study seminars and directed self-study. The delivery is based upon self-directed learning. The delivery of this module will be studio centred discussion, critique and appraisal. Presentations will be used to discuss work completed to staff typically in a Poster format or digitally.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	77	N/A
Non-Contact Hours	223	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4
Description:	The project based individual coursework submitted as a portfolio comprising graphic content, physical and integrated project information models, with the creation of supporting documentation, that illustrates the adoption of digital design techniques to a set problem.				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

The overall module grade is based on 100% weighting of (Coursework). An overall minimum grade D is required to pass the module. Non-submission will result in an NS grade.

Module Grade	Minimum Requirements to achieve Module Grade:
A	A
B	B
C	C
D	D
E	E
F	F
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

ADDITIONAL NOTES

Where appropriate mixed discipline team working will be encouraged.

INDICATIVE BIBLIOGRAPHY

- 1 Cross, N. (2021). Engineering Design Methods, Wiley, 5th Ed.
- 2 Pugh, S. (1995). Total Design, Addison Wesley.
- 3 Roy, R et al. (1995). Product Design & Technological Innovation, Open University.
- 4 Daniotti, B (2020) Digital transformation of the design, construction and management processes of the built environment, Springer