	Reference SUM205
Module Title **Digital Design** **Keywords** Parametric Modelling, Interoperability, Design Team Collaboration, , Building Information Modelling (BIM), Project Data Modelling	SCQF SCQF Level 11 SCQF Points 15 ECTS Points 7.5 Created September 2004 Approved June 2012 Amended August 2009 Version No. 1

This Version is No Longer Current

The latest version of this module is available here

Prerequisites for Module

None, in addition to course entry requirements.

Corequisite Modules

None.

Precluded Modules

None.

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 and detailing stages of a digital design based project.

Mode of Delivery

This module is delivered in 2 modes:
Distance learning mode (ODL). The delivery is based upon self-directed learning from web-based materials. The delivery of this module will be backed by online support in the form of online topical workshops, case studies, moderated discussion forums and live chat sessions.
Taught Mode (T). The module is delivered in taught mode by lectures, interactive workshops, case study seminars and directed self-study.

Assessment Plan

Learning Outcomes for Module

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

1. Appraise new and emerging working practices in conceptual and detailed project design in Architecture based upon the digital paradigm.
2. Apply current working practices and understand how such practices are likely to develop in the near future.
3. Explore and evaluate innovative methods of procurement, specification and manufacturing using digital modelling.

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.

Indicative Student Workload

	Full	Distance

	Learning Outcomes Assessed
Component 1	2
Component 2	1,3

Component 2: will comprise of a report based upon a student centred problem related to learning outcomes one and three.

Component 1: will comprise of personal research and an essay into a relevant topic identified during the presentation of the module relating to learning outcome 2.

Indicative Bibliography

1. Tedeschi, A. 2014, AAD Algorithms-Aided Design: Parametric Strategies using Grasshopper, Le Penseur; First Edition edition (1 Oct. 2014), 978-8895315300
2. Retsin, G. 2019, Discrete-reappraising the digital in architecture, John Wiley & Sons (22 Mar. 2019), 978-1119500346
3. Tibbits, S. 2017, Autonomous Assembly: Designing for a New Era of Collective Construction: 87. John Wiley & Sons, 978-1119102359
4. Carpo, M. 2017. The second digital turn, MIT press, 978-0262534024

Contact Hours	Time	Learning
Assessment	10	10
Lectures/ Seminars	24	0
Directed Study		
Directed Study	66	100
Private Study		
Private Study	50	40

5. Carpo, M. The Alphabet and the algorithm, MIT press, 978-0262515801
6. Steenson, MW. 2017, Architectural Intelligence: How Designers and Architects Created the Digital Landscape, MIT press, 978-0262037068
7. Agkathidis, A. 2017, Biomorphic structures, Architecture inspired by Nature, (form + technique), Laurence King Publishing, 978-1780679471
8. Figliola, A. Battisti, A. 2020, Post industrial robotics: Exploring informed architecture