

MODULE DESCRIPTOR

Module Title

Building Design and Technology

Reference	SU1053	Version	3
Created	April 2023	SCQF Level	SCQF 7
Approved	July 2018	SCQF Points	30
Amended	June 2023	ECTS Points	15

Aims of Module

To provide the student with the ability to understand and apply the key principles of construction techniques, construction detailing, built asset maintenance, refurbishment, renovation and associated data management.

Learning Outcomes for Module

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

- 1 Name the recommendations on the choice of design and construction solutions for projects recognising the influence of environmental services and strategies for optimising levels of human comfort and building performance involving computer basic learning (CAD)
- 2 Describe the influence of building maintenance and lifecycle cost on building design, components and elements.
- 3 Obtain knowledge and understanding of the structural and construction principles, systems, and methods relating to domestic scale and non-domestic scale buildings.
- 4 Apply sustainable thinking and techniques in relation to design and specification of sustainable materials involving computer basic learning (CAD)
- 5 Recognise the core contents of the module and relate to their application within the work place

Indicative Module Content

Structure and construction principles in contemporary use will be explored, along with a range of materials and new methods of construction. Understanding of 3D modelling and the principle of data management (BIM) are introduced. Building maintenance, refurbishment and rehabilitation requirements will be examined along with the requirements for any temporary works including a brief introduction to conservation issues. Structural materials - properties and environmental impact; timber, steel, reinforced concrete, plain and reinforced masonry, glass; alternative structural systems - simple frames, portal & moment frames and load bearing walls; vertical and lateral loading; lateral stability including diagonal bracing, shear walls and moment connections; integration of structure and architectural design; basic structural theory in relation to tension, compression, bending, shear and deflection; application to the approximate sizing of simple beams, continuous beams, cantilever beams, composite beams, trusses, slabs, columns and walls. Consideration of the interaction between environmental and human factors, which can impact on component, assembly and whole building performance. Basic computer learning will be introduced and applied.

Module Delivery

The module is delivered in Blended Learning mode using structured online learning materials/activities and directed study, facilitated by regular online tutor support. Workplace Mentor support and work-based learning activities will allow students to contextualise this learning to their own workplace. Face-to-face engagement occurs through annual induction sessions, employer work-site visits, and modular on-campus workshops.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	30	N/A
Non-Contact Hours	30	N/A
Placement/Work-Based Learning Experience [Notional] Hours	240	N/A
TOTAL	300	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>	240	

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, 5
Description:	An integrated assignment consisting of illustrated written work to demonstrate understanding and application of the module learning outcomes and reflecting on the learning development throughout the module weeks that involves theory and practice.				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

The overall module grade is based on 100% weighting of Component 1 (assignment). 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.

INDICATIVE BIBLIOGRAPHY

- 1 CHADDERTON, D., 2013. Building Services Engineering. 6th ed. Oxon: Routledge.
- 2 McMullan, R. 2018. Environmental science in building. 8th edition. Palgrave
- 3 PHILP, D. et al, 2015. Building Information Modelling for Dummies. John Wiley.
- 4 FOSTER, J., GREENO, R. and HARINGTON, R., 2007. Structure and Fabric Part 2. 7th ed. Oxon: Routledge.
- 5 SCHITTICH, C., 2003. In Detail: Building in Existing Fabric: Refurbishment, Extensions, New Designs. Germany: Birkhauser.
- 6 Emmitt, S. 2018. Barry's introduction to construction of buildings. 4th ed. Wiley Blackwell: Chichester