

MODULE DESCRIPTOR

Module Title

Building Structure and Technology

Reference	SU2502	Version	1
Created	August 2023	SCQF Level	SCQF 8
Approved	January 2024	SCQF Points	30
Amended		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 3D modelling and associated data management.

Learning Outcomes for Module

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

- 1 Apply the principles of construction detailing and relate them to medium size buildings and associated legislation.
- 2 Distinguish the sources and causes of decay in buildings and apply the appropriate maintenance, refurbishment and rehabilitation process.
- 3 Apply the knowledge on building maintenance and pathology on building design, components and elements.
- 4 Analyse the structure and construction of moderately complex buildings with the view to practice the knowledge, understanding and application of the structural and construction details of moderately complex buildings.

Indicative Module Content

This module will cover two key areas developing the knowledge on technical design and construction developed in stage 1. It will firstly investigate the current structure and construction principles in contemporary use and this will be explored and applied in details, along with a range of materials and new methods of construction. Secondly, it will look to establish an understanding of historic buildings, their maintenance, structure and refurbishment. This understanding will be applied through ideas and practice around retrofit and improving fabric and buildings for future and sustainable use. The first section will investigate and develop student knowledge of structural materials for medium to high rise buildings including their properties and environmental impact. The student will develop an understanding of construction and structural systems of moderately complex buildings and how tectonics plays a role in architectural design. The second section will develop knowledge around existing buildings by investigating building maintenance, refurbishment and rehabilitation requirements along with the requirements for any temporary works including a brief introduction to conservation issues. The module also introduces the reasons for deterioration and defects in buildings and will explore the relevant legislation relating to this topic. Remediation and retrofit processes and development will be covered together with the relevant legislation relating to the topics will be identified and reviewed.

Module Delivery

This is a module predominantly involving practical work in relation to a project supported by lectures, practical workshops, directed student research and online activities, and where appropriate site visits. Directed study to core texts and resource material will be encouraged.

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:	Project based coursework based on group and individual work. Coursework submitted as a portfolio comprising graphic content, virtual models and/or physical models illustrating detailing and digital resolution of current and existing buildings.				

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

This module is intended to give students an introduction to the fundamentals of law and procurement studies in a built environment context, a topic which supports almost all of the other course modules. The entrance requirements to this course identify that the students already possess analytical and critical skills and it is not intended to test these here where the focus is upon the acquisition and understanding of law and procurement studies basics.

INDICATIVE BIBLIOGRAPHY

- 1 Macdonald, A.J., 2019. Structure and Architecture. 3rd ed. London: Routledge
- 2 Ching, F., 2020. Building Construction Illustrated. 6th ed. Wiley
- 3 Silver, P. & McLean, W., 2013, Introduction to Architectural Technology, 2nd Edition, London: Laurence King.
- 4 Megson, T. H. G., (2019), Structural and stress analysis, Butterworth-Heinemann.
- 5 Yeomans, D. T., 2015, How structures work : design and behaviour from bridges to buildings, 2nd edition, Wiley Blackwell.
- 6 Silver, P., (2013), Structural engineering for architects : a handbook, London Laurence King.