Module Definition Form (MDF)

Module code: MOD008162	**Version:** 2 **Date Amended:** 08/Feb/2024

1. Module Title
Technology and Structures

2a. Module Leader
Graham Terry

2b. School
School of Engineering and the Built Environment

2c. Faculty
Faculty of Science and Engineering

3a. Level
4

3b. Module Type
Standard (fine graded)

4a. Credits
30

4b. Study Hours
300

5. Restrictions			
Type	**Module Code**	**Module Name**	**Condition**
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	FdSc Surveying, FdSc Construction Management, BSc (Hons) Building Surveying, BSc (Hons) Construction Management, BSc (Hons) Quantity Surveying, FdSc and BSc (Hons) Architectural Technology.		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module is designed for students of construction and surveying with little and/or no prior knowledge of building construction, services and material properties.

You will learn the common methods of construction of both new and traditional housing, by considering the functional requirements of each of the main elements of the buildings' structure and the materials used in their construction. You will also study the requirements of the internal environment, so as to understand how services installations contribute to user comfort.

You will be introduced to some of the basic analytical concepts and processes involved in the design of structures. You will develop analytical skills which will allow you to carry out basic structural calculations and apply these to basic domestic design solutions.

You will acquire knowledge related to domestic construction and be able to justify why different construction techniques and materials are used in the built environment on the basis of structural performance and sustainability. As well as improving your intellectual skills you will also develop communication skills both written and graphical.

6b. Outline Content

Knowledge and Understanding

- Modern domestic construction, with comparative reference to traditional methods and materials from previous periods.
- Building elements: foundations, floors, external walls, flat and pitched roofs, upper floors, stairs, partition walls, doors and windows.
- Supply and distribution of services installations: below ground drainage, above ground drainage hot and cold water, heating, electricity, gas, telecommunications.
- Introduction to fundamental and derived units; the concepts of mass and force; Newton's laws of motion; Equilibrium; Pressure and stress; Resolution of forces; Loads, shear force and bending moments for simple cases.

Skills Analysis

- Communication by written report, proportional sketches, scale drawings and specifications.
- Correct use of specialised terminology commonly used within the industry.
- Problem-solving in relation to materials, methods of construction and structural recommendations
- Working with others in a small group environment.
- Developing appropriate undergraduate study skills related to the acquisition and use of construction information.

6c. Key Texts/Literature
The reading list to support this module is available at: https://readinglists.aru.ac.uk/

6d. Specialist Learning Resources
None

7. Learning Outcomes (threshold standards)		
No.	**Type**	**On successful completion of this module the student will be expected to be able to:**
1	Knowledge and Understanding	Demonstrate a broad knowledge of how past and present domestic properties are constructed to resist the elements and accommodate their intended use and how services installations contribute to user comfort.
2	Knowledge and Understanding	Explain the primary functional requirements of domestic construction, how structures and materials can achieve these requirements and which factors can lead to material deterioration.
3	Knowledge and Understanding	Demonstrate knowledge and understanding, in principle, to structural behaviour and how this relates to structural design.
4	Knowledge and Understanding	Understand and interpret technical drawings.
5	Intellectual, practical, affective and transferrable skills	Write a formal report including the use of simple annotated sketches and scale drawings.
6	Intellectual, practical, affective and transferrable skills	Tackle and solve structural calculations relating to domestic construction in order to arrive at a design recommendation.

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2025/6	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	48	1-6	4 hours a week
Other teacher managed learning	24	1-6	Practical Exercises - 2 hours a week
Student managed learning	228	1-6	Private Study
TOTAL:	300		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Coursework	1,2,4	40 (%)	Fine Grade	30 (%)
Multiple Choice Quiz (2400 word equivalent)					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
011	Coursework	3,5,6	60 (%)	Fine Grade	30 (%)
Technical Report (3600 word equivalent)					

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]