

TECH: Building Technology, Materials and Structures 3

Module Tit	le: Building Tech	nology, Materials and Structures 3
Language	of Instruction: English	
Credits:	5	
orcuits.	0	
NFQ Level:	6	
Module De	livered In 2 programme	<u>(s)</u>
Teaching & Strategies:	 Lecture delivery – 4 hours per week total, varying between Technology, Structures & Materials. delivery may be in Studio 2 • Projects – typically one each for technology, structures & materials, into Studio 3 • Lab Experiments • Model Making • Tutorials • The key teaching & learning strategy integration/'feeding-in', through content & timing, of Technology, Structures & Materials instruction Studio 3 projects, including projects, to allow application of Technology, Structures & Materials th formative feedback 	
Module Air	to detail and a external build learners with structures bot affect archited characteristic to medium sc To develop le	the theoretical and technical background in construction, materials and structures for learners apply in Studio 3 projects, through introducing them to the characteristics of the main internal & ling materials/finishes used in small to medium scale non-domestic construction • To familiarize the construction principles of sustainable site development & ground-works and timber th pre-cast & cast in-situ and including primary, secondary and tertiary structures, as they ctural technology • To familiarize learners with the technologies, principles, materials, span s, support requirements and typical details required for the non-structural completion of small ale non-domestic buildings, including glazing, rainscreen cladding, roofing and partitioning • earners' understanding of specification • To develop learners' understanding of the application egulations requirements to the design and detailing of small to medium scale non-domestic
Learning C	Dutcomes	learner should be able to:
LO1		ural & constructional principles of timber construction and materials to small to medium scale
LO2		ological & material principles of non-structural completions, including glazing, rainscreen oning to small to medium scale timber construction projects, including specification
LO3		of different types of structures and structural frames and have how the loads and load paths tructural imposed and permanent loading to the foundations (Timber)
LO4	Apply Building Regulations req	uirements to a small to medium scale timber building
Pre-requisi	ite learning	
Module Re	commendations	is recommended before enrolment in this module.
No recomm	nendations listed	
Incompatik These are r	ble Modules modules which have learning outc	omes that are too similar to the learning outcomes of this module.
No incompa	atible modules listed	
Co-requisi	te Modules	
No Co-regu	lisite modules listed	
Requireme		is mandatory before enrolment in this module is allowed.



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Module Content & Assessment

Indicative Content

Technology

Detailing for Part L compliance including insulation, airtightness, thermal bridging, moisture management (vapour barrier, breather membrane, DPM, DPC), Timber structures & construction: framed & panel timber structures, timber partitions, timber cladding, highperformance timber & composite windows, internal timber doors, rooflights, engineered timber, fire-retardant finishes, services integration Framed building envelope, characteristics & concepts of cladding, cladding types, rainscreen cladding, Flat roofing types, membranes.

Materials

Non-domestic building materials both internal and external: Glass: Manufacture, properties, treatment, types and uses Materials: Nondomestic building materials both internal and external: Glass: Manufacture, properties, treatment, types and uses Timber: Moisture contents, stress grading, connections, preservative treatment, sheets and engineered timber products; Moisture & creep movements. Thermal Insulating materials: Conduction, Convection, Radiation, Thermal properties of materials, Forms of insulation, Materials, Factors in selection, How insulation works and aging factors. Bituminous Sheets – manufacture, sheet classification, performance, construction, finishes. Polymeric Single Ply Roof Membranes. Plastics and products; polymers, sheeting, fittings and paint systems Metal and products; ferrous and non ferrous, use in building

Structures

Framing Arrangements • Lateral Stability • Framing around opening • Column base details Cladding • Structural Support Details for cladding systems to meet requirements of projects. Overall Structural Behaviour Building Load Paths Lateral Stability of Buildings, Shear Walls, Bracing Structural Timber • Timber Frame structural systems • Approx Sizing timber members for scheming stage • Lateral stability systems in timber frame buildings Material Laboratory Sessions • Timber – density, moisture content, examination of timber slides under microscope, examination of timber samples

Assessment Breakdown	%
Project	40.00%
End of Module Formal Examination	60.00%

No Continuous Assessment

Project				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Construction specifications linked to Studio 2 project Materials project Structures project Or as appropriate	1,2,4	40.00	n/a

No Practical

End of Module Formal Examin	ation			
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	3 hour formal exam	1,2,3	60.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



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Module Workload

Workload: Full Time		
Workload Type	Frequency	Average Weekly Learner Workload
Lecture	12 Weeks per Stage	4.00
Estimated Learner Hours	12 Weeks per Stage	6.42
	Total Hours	125.00

Module Delivered In			
Programme Code	Programme	Semester	Delivery
CW_CMARC_B	Bachelor of Science (Honours) in Architectural Technology	3	Mandatory
CW_CMART_D	Bachelor of Science in Architectural Technology	3	Mandatory