

APPROVED**ARCH6071: CTMS - Wood**

Module Details	
Module Code:	ARCH6071
Title:	CTMS - Wood APPROVED
Long Title:	CTMS - Wood
NFQ Level:	Fundamental
Valid From:	Semester 1 - 2020/21 (September 2020)
Duration:	1 Semester
Credits:	5
Field of Study:	5810 - Architecture & Urban Environment
Module Delivered in:	2 programme(s)
Module Description:	CTMS Construction Technology Materials and Structure - Wood provides an introduction to building technology, construction materials and structure. It investigates site and foundations, and construction systems in timber and in light gauge steel, exploring the components of frame, floor, roof, skin/enclosure openings, and relevant building regulations.

Learning Outcomes	
On successful completion of this module the learner will be able to:	
#	Learning Outcome Description
LO1	Distinguish between the characteristics, selection process, and construction systems of timber and light gauge steel in frame, floor, roof, skin/enclosure.
LO2	Describe the principles of timber and light gauge steel frame construction, load bearing and non-load bearing structural components.
LO3	Evaluate the historic development of technology related to timber and light gauge steel structures
LO4	Describe the principles of foundation design to satisfy building requirements
LO5	Describe basic regulations and legislation related to steel, timber and skin.
Dependencies	
Module Recommendations	
Incompatible Modules	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
No requirements listed	

Indicative Content
Principles Principles of load-bearing, non-load bearing and load paths. Timber and light gauge steel frame construction systems. Characteristics of the materials timber and steel. Selection process for materials and construction systems in timber and steel. Principles of regulations for timber and steel.
Technology, Materials Introduction to wood. Brief history of wood materials and construction systems. Properties and characteristics of wood. Basic Timber Frame Structures, Introduction to Modulated Building Materials, Platform Timber Frame Construction, Timber Frame Components, Timber Strength Class, Timber Floors, Suspended Ground, Suspended Upper, Joist Sizing, Decking Materials. Internal Stud Partitions, Loadbearing, Non-loadbearing Timber Roofs, Pitched Roofs, Timber Roof Components, Member Sizing and Detailing. Timber Frame Envelope, Suspended Ground Floors. Timber Frame External Walls, Overall Build Up, Cladding Types, Species, Profiles, Detailing, Insulation, Membranes. Cut Pitched Roofs, Warm, Cold Inverted Roofs, Standing Seam Metal Roof Coverings, Insulation, Membranes. Foundations, Basic Strip, Pad, Raft, Sizing and Detailing. Windows and Doors, Overview and Detailing. Roof Windows, Dormer Windows, Basic Detailing. Introduction to Light Gauge Steel Frame Construction, External Wall Build-Up, Corner Detailing, Stud Arrangement, Openings in LGSF.
Structure What is a structure. Structural Form. Timber Structures and Foundations. Load Paths, Load-Bearing, Non-Load bearing. Stability of Structures. Steel Structures. Support conditions - pinned, roller and fixed supports Beam types - simply supported, continuous and cantilever. Internal reactions of structural members - tension, compression and bending. Foundation Design. Foundations: basic building foundation types, shallow foundation, deep foundation. Roof Systems.
Regulations Introduction to related regulations, technical guidance documents, Part A Structure, Part B Fire, Part C Site, Part D Materials, Part L Conservation of Fuel and Energy.

Module Content & Assessment	
Assessment Breakdown	%
Coursework	100.00%

Assessments

Coursework			
Assessment Type	Project	% of Total Mark	40
Timing	Every Week	Learning Outcomes	1,3,4,5
Assessment Description Complete a booklet of details relating to timber frame and light gauge steel frame construction.			
Assessment Type	Critique	% of Total Mark	30
Timing	Week 13	Learning Outcomes	1,2
Assessment Description Describe, Identify and Demonstrate the load paths and loads acting on a timber frame model in studio			
Assessment Type	Short Answer Questions	% of Total Mark	30
Timing	Week 13	Learning Outcomes	1,2,4,5
Assessment Description Complete 2 short answer theory assessments relating to elements of timber frame and light gauge steel frame construction.			
No End of Module Formal Examination			
Reassessment Requirement			
Coursework Only This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.			

Module Workload

Workload: Full Time					
Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Lecture Based Learning	Every Week	2.00	2
Lecture	Contact	Lecture and Studio Based Learning	Every Week	1.00	1
Independent & Directed Learning (Non-contact)	Non Contact	Completion of Project Assignment	Every Week	4.00	4
Total Hours					7.00
Total Weekly Learner Workload					7.00
Total Weekly Contact Hours					3.00

Workload: Part Time					
Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Lecture Based Learning	Every Week	2.00	2
Lecture	Contact	Lecture and Studio Based Learning	Every Week	1.00	1
Independent & Directed Learning (Non-contact)	Non Contact	Completion of Project Assignment	Every Week	4.00	4
Total Hours					7.00
Total Weekly Learner Workload					7.00
Total Weekly Contact Hours					3.00

Module Resources

Recommended Book Resources

Edward Allen and Joseph Iano. (2014), Fundamentals of Building Construction, Sixth. J. Wiley & Sons, Hoboken, NJ, [ISBN: 1118138910].

Edward Allen and Joseph Iano. (2017), The Architect's Studio Companion, Sixth. J. Wiley & Sons, Hoboken, NJ, [ISBN: 0470641916].

Edward Allen and Patrick Rand: Drawings by Edward Allen, Joseph Iano, and Patrick Rand. (2016), Architectural Detailing, Third. J. Wiley & Sons, Hoboken, NJ, [ISBN: 9781118881996].

Francis D. K. Ching and Cassandra Adams. (2014), Building Construction Illustrated., Fifth. Wiley, New York, [ISBN: 1118458346].

Derek Seward. (2014), Understanding Structures, Fifth. Palgrave Macmillan, [ISBN: 1137376562].

Supplementary Book Resources

Virginia McLeod. (2015), Detail in Contemporary Timber Architecture, Laurence King Publishing Ltd., China, [ISBN: 9781780676555].

Robin Lancashire and Lewis Taylor. (2011), Timber Frame Construction, Fifth. TRADA, [ISBN: 9781900510820].

Georgina Foley. (2009), Houses of Steel, Australia, [ISBN: 9781864703665].

Andrea Deplazes (Editor), G. H. Söffker (Translator). (2018), Constructing Architecture, Fourth. [ISBN: 9783035616699].

Stephen Emmitt. (2010), Barry's Introduction to Construction of Buildings, Second. Wiley Blackwell, Oxford, [ISBN: 9781405188548].

Eugene Farrell, John A Mc Carthy, Anthony Feely. (2012), Homebond House Building Manual, Seventh. Homebond Technical Services, Dublin, [ISBN: 9780952361480].

This module does not have any article/paper resources

This module does not have any other resources

Module Delivered in

Programme Code	Programme	Semester	Delivery
CR_CARCT_8	Bachelor of Science (Honours) in Architectural Technology	-1	Mandatory
CR_TARCH_7	Bachelor of Science in Architectural Technology	-1	Mandatory