APPROVED

ARCH6074: CTMS - Frames

Module Details

Module Code:	ARCH6074
Title:	CTMS - Frames APPROVED
Long Title:	CTMS - Frames
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 - Frames investigates building technology, construction materials and finish materials, construction, structural systems and components of exterior elements for mixed use developments in detail and explores relevant building regulations

Learning Outcomes

On successful completion of this module the learner will be able to:

#	Learning Outcome Description
LO1	Apply construction and finish systems, building components, structural and non-structural interventions, at a detail level.
LO2	Formulate concepts for structural systems, components and finishes
LO3	Discuss the characteristics of, selection process and application of contemporary materials.
LO4	Determine the effects of actions on floor slabs and roofs and how these can be resisted.
LO5	Illustrate and document compliance with relevant regulations and legislation.

Dependencies

Module Recommendations

Incompatible Modules

No incompatible modules listed

Co-requisite Modules

No Co-requisite modules listed

Requirements

No requirements listed

Indicative Content

Principles
Building systems appropriate for mixed use developments. Components and finishes in detail. Exterior walls, load bearing and non-load bearing. Frame, monolithic, composite, built up systems. Timber, Steel, Concrete, Masonry. Circulation, compliance with technical guidance documents K and M

Technology, Materials
Foundations for Multi-storey Buildings. Concrete Frame Construction, Steel Frame Construction, Timber Post and Beam Construction. Comparison of Systems. Infill, Metal, Masonry, Timber. Simple In-situ Flat Slab and Precast Concrete Floor Systems, Steel Deck Formwork. Formwork for Site Cast Concrete. Plain Concrete, Reinforced Concrete and Types of Reinforcement. Site Cast Concrete; spans, columns, girders, beams, slabs. One-way concrete systems - Solid slab, One-way joist system. Two-way concrete systems. Introduction to Beam and Slab, Trough and Waffle. Concrete Flat Roof Construction, Build-Up, Warm, Cold, Inverted Decks. Achieving Falls, Drainage, Membranes, Roof Coverings, Insulation. Stairs Construction, Precast, Cast-In-Situ, Steel, Building Regulations, Stair Design, Quarter, Half Space Landings, Assembly and Fixing. Cladding Fixing Systems, Rainscreen Cladding - Wood, Stone, Brick, Metal. Multi-story Support Systems, Dissimilar Metals, Corrosion, Specifying Metals. Fibre Cement Cladding, Fire Compartmentation.

Structure
Calculate actions on structural elements. Investigate the different types of floor and roof systems available: eg. reinforced concrete, precast, composite, timber and size the structural members.

Regulations
Demonstrate compliance with the relevant legislation and technical guidance documents.

Module Content & Assessment

Assessment Breakdown	%
Coursework	100.00%

Assessments

Coursework

Assessment Type	Project	**% of Total Mark**	40
Timing	Every Week	**Learning Outcomes**	1,2,3,5

Assessment Description
Complete a booklet of details relating to frame construction and various cladding assemblies.

Assessment Type	Project	**% of Total Mark**	30
Timing	Week 13	**Learning Outcomes**	1,4,5

Assessment Description
Analysis, selection and specification of floor and roof systems using industry guides.

Assessment Type	Short Answer Questions	**% of Total Mark**	30
Timing	Week 13	**Learning Outcomes**	2,3,4

Assessment Description
Complete 2 short answer theory assessments relating to elements/components of 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
Lecturer-Supervised Learning (Contact)	Contact	Integrated Studio Workshop	Every Week	1.00	1
Independent & Directed Learning (Non-contact)	Non Contact	Research, Development and Completion of 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
Lecturer-Supervised Learning (Contact)	Contact	Integrated Studio Workshop	Every Week	1.00	1
Independent & Directed Learning (Non-contact)	Non Contact	Research, Development and Completion of 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, N.J, [ISBN: 1118138910].

Edward Allen; Drawings by Joseph Iano, Edward Allen. (2016), Architectural Detailing, Third. J. Wiley & Sons, Hoboken, NJ, [ISBN: 1118881990].

Brown, Rachel and Farrelly, Lorraine. (2012), Materials and Interior Design, Laurence King Publishing, China, [ISBN: 9781856697590].

Drew Plunkett. (2015), Construction and Detailing for Interior Design, Second. Laurence King Publishing, London, [ISBN: 9781780674773].

Derek Seward. (2014), Understanding Structures, Fifth. Palgrave Macmillan, [ISBN: 9780070432536].

Stephen Emmitt, Christopher Gorse. (2018), Barry's Introduction to Construction of Buildings, Fourth. Wiley-Blackwell, Oxford, [ISBN: 1118977165].

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

Arthur Lyons. (2014), Materials for Architects and Builders, Fifth. Routledge, Glasgow, [ISBN: 9780415704977].

Supplementary Book Resources

Edward Allen and Joseph Iano. (2017), The architect's studio companion, Sixth. Wiley, Hoboken, NJ, [ISBN: 9781119092414].

Francis D. K. Ching and Cassandra Adams]. (2014), Building Construction Illustrated, Fifth. Wiley, New York, [ISBN: 987111845834].

Roy Chudley; Revised by Roger Greeno. (2011), Construction Technology, Eleventh. Pearson Education Ltd., [ISBN: 113890709X].

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