APPROVED

ARCH6073: CTMS - Masonry

Module Details

Module Code:	ARCH6073
Title:	CTMS - Masonry APPROVED
Long Title:	CTMS - Masonry
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 - Masonry provides an introduction to building technology, construction, materials and structure. It investigates construction systems in concrete block, masonry and insulated concrete formwork, exploring the components of solid, composite and cavity wall construction, floor, roof, skin/enclosure, openings, load bearing wall, non-load bearing wall and relevant building regulations.

Learning Outcomes

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

#	Learning Outcome Description
LO1	Discuss the principles of cavity wall, load bearing and non-load bearing elements related to concrete block and masonry construction.
LO2	Discuss the characteristics of and selection process for construction systems in concrete block, masonry and insulated concrete formwork.
LO3	Discuss the historic development of technology related to concrete block and masonry.
LO4	Identify the components of construction systems in concrete block and masonry including frame, floor, roof, skin/ enclosure, openings.
LO5	Illustrate and document compliance with 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
Principles of load-bearing, non-load bearing and load paths. Concrete and masonry construction systems. Characteristics of the materials concrete and masonry. Selection process for materials and construction systems in concrete and masonry. Principles of regulations for masonry and concrete

Technology, Materials
Windows and Doors in Masonry Concrete Block and Brick Construction. Windows, Overview, Detailing and Joinery Terminology. Doors, Overview, Detailing and Joinery Terminology, Corner Windows, Bay Windows. Domestic Scale Masonry Building Construction, Masonry Concrete Block and Brick External Walls. Lightweight Blockwork, Party Walls, Chimneys and Flues. Overall Build Up, Tie-Bars, Cavity Insulation, External Wall Insulation, External Finishes, Render. Brickwork, Clay, Concrete, Calcium Silicate. EN771. Classification of Bricks, Brick Bonding – Strength, Stability, Appearance, Decorative Brickwork and Features. Parapets, Abutments, Cavity Trays, Stepped DPC's. Damp Proof Courses. Internal Finishes, Sand and Cement, Gypsum, Lightweight Plasters, Service Cavities, Dry-lining,Internal Walls, Loadbearing, Non-loadbearing. Forming Openings, Concrete Lintels, Pressed Metal Lintels, RSJ's, Bearing Pads. Mortar, Mixes, Additives, Joint Finishes. Floors, Concrete Ground Bearing, Rising Walls, Accommodation of Services, Suspended Timber, Suspended Beam and Block. Timber Roofs, Flat Roofs, Achieving Falls, Pitched Roofs, Trusses, Slating and Tiling, Characteristics of Concrete, Typical Mixes for Concrete, Foundations, Basic Strip, Pad, Raft, Wide Strip, Stepped. Domestic Timber Stairs Assembly, Terminology, Part K, Access Introduction, Part M. Introduction to Insulated Concrete Formwork, Solid Wall and External Wall Insulation Systems.

Structure
Fundamentals of Structures. Introduction to Concrete Structures. Concrete Forms. Introduction to Loadings. Stability of Concrete Structures. Preliminary Sizing of Concrete Slabs and Beams. Introduction to Masonry Structures. Structural Use of Masonry. Non Structural Use of Masonry. Foundations.

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**	2,4,5

Assessment Description
Complete a booklet of details relating to domestic masonry construction.

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

Assessment Description
Describe, identify and demonstrate the load paths and loads acting on a domestic scaled masonry model in studio

Assessment Type	Short Answer Questions	**% of Total Mark**	30
Timing	Week 13	**Learning Outcomes**	1,3,4,5

Assessment Description
Complete 2 short answer theory assessments relating to elements of domestic masonry 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: 9781119092414].

Edward Allen and Patrick Rand; Drawings by Edward Allen, Joseph Iano, and Patrick Rand 2016. (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].

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

Supplementary Book Resources

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

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

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