TECH C1501: Civil Engineering Technology I

Module Title:	Civil Engineering Technology I
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	2 programme(s)

Teaching & Learning Strategies:	Lectures Project Work Continuous Assessments Private study

Module Aim:	The aims of this module are: (1)to teach students the techniques and processes involved in the general area of civil engineering construction; (2)to help students appreciate the capabilities and limitations of the various types of plant and equipment that are used in the construction industry.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	to describe temporary works systems used on civil engineering sites and identify health and safety issues associated with these systems;
LO2	to describe how steel structures are fabricated and erected;
LO3	to describe the details of in-situ and pre-cast concrete structures and how they are manufactured and erected;
LO4	(a) to work with others on team projects (b) to carry out research into simple civil engineering manufacturing and construction methods (c) to write reports (d) present projects and research in a class room environment.
LO5	to introduce sustainability and describe the importance of sustainability in civil engineering. Describe materials/resources use and water use in civil engineering. Introduction to embodied and operational carbon calculations and climate change.

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is recommended before enrolment in this module.*
No recommendations listed
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*
No requirements listed

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Module Content & Assessment

Indicative Content
(1) Temporary Structures a) Access and support scaffolding b) Basic formwork design procedures and construction c) Use of proprietary formwork systems d) Calculations: Formwork Wall ties, Formwork Props. e) Create a risk assessment for temporary works case study f) Cranes and hoists - types and application
(2) Steelwork Structures a) Steel manufacture b) Steel Fabrication c) Portal Frame structures d) Bolting & Welding e) Methods of erection f) New technologies and Sustainable construction g) Handling and Transportation
(3) In-situ and Precast Concrete Structures a) In-situ Concrete b) Steel Reinforcement – types and fixing methods c) Placing, finishing, curing concrete d) Manufacture of precast units, handling and erection procedures e) Prestressed Concrete f) Prestressed concrete bridge beams g) Calculations: concrete pour volumes and rates.
(4) Sketching of Construction Details Students will be required to submit sketches. The sketches will illustrate a variety of civil engineering construction details and will require appropriate annotation. The assignments will include isometric and orthogonal sketches.
(5) Sustainability in Civil Engineering Understand the importance of sustainability in civil engineering. Consider the Social important that all civil engineering projects have. Consider materials/resources use, water use, carbon and climate change. Consider economic sustainability of construction projects

Assessment Breakdown	%
Continuous Assessment	30.00%
Project	70.00%

Continuous Assessment

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Multiple Choice Questions	In class assessment of MCQ and calculations	1,2,3,5	30.00	n/a

Project

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	Various Projects with student self-assessment required.	1,2,3,4,5	50.00	n/a
Project	Construction Detail Sketch Submissions - student self assessment required	1,2,3	20.00	n/a

No Practical

No End of Module Formal Examination

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	15 Weeks per Stage	5.13
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering	1	Mandatory
CW_CMCIV_D	Bachelor of Engineering in Civil Engineering	1	Mandatory