

Module Title:	Civil Engineering Technology II
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	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	to describe how foundations are constructed and assess emerging sustainable foundation technologies;
LO2	to describe how shoring and retaining walls are designed and constructed and compare carbon footprints of competing retaining wall types;
LO3	to describe how pipelines and drains are constructed and tested;
LO4	to describe the type of plant and equipment used in the industry, identify health and safety issues on site and discuss the contribution of plant/equipment to carbon emissions in construction projects
LO5	(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
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

Module Content & Assessment

Indicative Content

(1) Foundations

a) Shallow foundations b) Deep Foundations c) Rising walls d) Calculations: Bearing Pressure, Foundation Quantities e) Emerging sustainable foundation technologies

(2) Excavation, de-watering and shoring

a) Revise scaffolding and Formwork b) Excavating and earth moving equipment c) Excavation support and shoring d) De-watering methods e) Calculations: excavation quantities and rates.

(3) Retaining Walls

a) Gravity, Basement, Buttress and Counterfort walls. b) Sheet Pile, Secant, Contiguous and Diaphragm walls. c) Mechanical Stabilized Earth walls c) Drainage of walls d) Methods of Failure e) Relative carbon footprints of each type of retaining wall

(4) Pipe Laying

a) Types and laying of pipework b) Excavation, bedding and backfilling c) Manhole construction d) Surface drain systems: yard gullies, road gullies, access and inspection chambers, oil interceptors e) Testing procedures f) Calculations: Pipe Gradients, Manholes quantities and buoyancy calculations.

(5) Health and Safety

a) Construction Environment - Generic risks b) Hazard Identification b) Risk Analysis and Control

(6) Construction Plant

Earth moving, excavation and compaction plant. Carbon emissions associated with this type of work.

Assessment Breakdown	%
Continuous Assessment	20.00%
Project	40.00%
End of Module Formal Examination	40.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Other	Construction Detail Sketch Submissions or Multiple Choice Quiz	1,2,3,4	20.00	n/a

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Various Projects - student self-assessment required.	1,2,3,4,5	40.00	n/a

No Practical

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	Final Examination	1,2,3,4	40.00	End-of-Semester

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

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
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	2	Mandatory
CW_CMCIV_D	Bachelor of Engineering in Civil Engineering	2	Mandatory