

Module Title:	Earthworks Measurement & Surveying
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	3 programme(s)
Teaching & Learning Strategies:	Lectures Projects Practical's Private study Blackboard
Module Aim:	The aims of the subject are: (1) to develop skills in the calculation and quantification of earthworks. (2) to develop practical skills in the use of surveying equipment. (3) to develop skills in the use of surveying and measurement software.

Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	to carry out measurement and calculation of areas and volumes of buildings, earthworks and other construction features.
LO2	to demonstrate knowledge of modern Total Station instruments.
LO3	to identify and address the procedures for setting out construction works.
LO4	to identify and address the standard methods employed for collecting and plotting survey details.
LO5	to demonstrate knowledge of relevant software to aid in the measurement and detailing of construction works

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) Volume Estimation (10 hours lectures, 5 hours practicals)

(a) Calculation of volumes of earthworks by differing methods (b) Mass Haul Calculations (c) Surveying equipment usage

(2) Surveying (14 hours lectures)

(a) Whole circle and reduced bearings (b) Latitudes and departures (c) Sight rails revised (d) Setting-out building works (e) Conduction of a detail Survey

(3) Instrument Instruction (6 hours lectures)

(a) Total Station Instruments (b) Controlling vertically in buildings (c) Use of Instruments in area and volume calculations

(4) Practical Work (15 hours practicals)

n/a

(5) Computer Applications (5 hours lectures, 5 hours practicals)

(a) Mudshark or similar measurement software (b) AutoCAD or similar drafting software

Assessment Breakdown

	%
Continuous Assessment	15.00%
Project	10.00%
Practical	15.00%
End of Module Formal Examination	60.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Examination	10% Classroom Assessment 5% 1 on 1 Demonstration of Instrument Capability	1,2,3,4,5	15.00	n/a

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	n/a	1,4,5	10.00	n/a

Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	3 - 5 External Surveying Practicals	2,3,4,5	15.00	n/a

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	No Description	1,2,3,4	60.00	End-of-Semester

ITCarlow 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	30 Weeks per Stage	1.17
Laboratory	30 Weeks per Stage	0.33
Practicals	30 Weeks per Stage	0.50
Estimated Learner Hours	30 Weeks per Stage	3.00
	Total Hours	150.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMFAC_B	Bachelor of Science (Honours) in Facilities and Building Services Management	3	Mandatory
CW_CMQSU_B	Bachelor of Science (Honours) in Quantity Surveying	3	Mandatory
CW_CMBSE_D	Bachelor of Science in Construction Management with Buildings Services	3	Mandatory