

Module Title:	Surveying and Setting Out II
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	1 programme(s)
Teaching & Learning Strategies:	Lectures Demonstrations Project work Private study Blackboard
Module Aim:	The aims of the module are: (1) to introduce students to modern day surveying equipment; (2) to teach students the basic principles relating to this equipment. Students must participate in class work, practical work & project work and must achieve a minimum of 50% in these elements of continuous assessment in order to have satisfied the module learning outcomes.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	to understand & operate modern electronic distance measurement instruments (i.e. Leica, Pentax, Topcon, Trimble);
LO2	to understand & use these instruments to set out buildings & roads;
LO3	to understand & use these instruments to produce a detail survey of an area, a contour map of an area, longitudinal sections;
LO4	to understand & apply relevant computer software to obtain the output drawings in Learning Outcome (3).

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) Traversing (6 hours lectures) (a) Bearings and Coordinates (b) Traversing Field Work (c) Traversing Calculations
(2) Optical And Electromagnetic Distance Measurement (9 hours lectures, 20 hours application) (a) Total Station instrument characteristics (b) Applications of the instruments (c) Factors affecting accuracy
(3) Curve Ranging (5 hours lectures, 2 hours practicals) (a) Circular curves and setting out principles (b) Transition curves and setting out principles (c) Vertical curves and setting out principles
(4) Volume Computation (5 hours lectures) (a) Volumes from cross sections, contour lines and spot levels (b) Mass haul diagrams
(5) Setting Out For Construction Work (3 hours lectures, 3 hours practicals) (a) Setting out of Buildings (b) Setting out of Roads
(6) Computer Applications (3 hours practicals) (a) Software Package SCC (b) Software Package Pythagoras (c) Software Package AutoCAD (d) Software Package AutoCAD Civil 3D
(7) Excavation Control (2 hours lectures, 2 hours practicals) (a) Sight rails revised (b) Pipe laser

Assessment Breakdown	%
Continuous Assessment	10.00%
Practical	30.00%
End of Module Formal Examination	60.00%

Continuous Assessment				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Examination	1 on 1 Demonstration of Instrument Use Capability	1,2,3,4	10.00	n/a

No Project

Practical				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	3 - 5 external surveying practicals	1,2,3,4	30.00	n/a

End of Module Formal Examination				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	No Description	1,2,3	60.00	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	30 Weeks per Stage	1.00
Practicals	30 Weeks per Stage	0.83
Laboratory	30 Weeks per Stage	0.17
Estimated Learner Hours	30 Weeks per Stage	3.00
Total Hours		150.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering - Ab Initio	3	Mandatory