

<b>Module Title:</b>	Surveying and Setting Out II
<b>Language of Instruction:</b>	English
<b>Credits:</b>	5
<b>NFQ Level:</b>	6
<b>Module Delivered In</b>	<a href="#">1 programme(s)</a>
<b>Teaching &amp; Learning Strategies:</b>	Lectures Demonstrations Project work Private study Blackboard
<b>Module Aim:</b>	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	
<b>Module Recommendations</b> <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
<b>Incompatible Modules</b> <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b> <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**

<b>Workload: Full Time</b>		
<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	<a href="#">Bachelor of Engineering (Honours) in Civil Engineering - Ab Initio</a>	3	Mandatory