

## CIVL6028: Introductory Land Surveying

Module Details	
Module Code:	CIVL6028
Title:	Introductory Land Surveying <b>APPROVED</b>
Long Title:	Introductory Land Surveying
NFQ Level:	Fundamental
Valid From:	Semester 1 - 2020/21 ( September 2020 )
Duration:	1 Semester
Credits:	5
Field of Study:	5822 - Civil Engineering
Module Delivered in:	<a href="#">11 programme(s)</a>
Module Description:	This module introduces students to Land Surveying. The student will study both the theory and practical application of Levelling, Linear Measuring, Angle Measurement and the Measurement of Buildings. In addition the student will develop the knowledge to use specialist surveying equipment to complete land surveying and building measurement tasks.

Learning Outcomes	
On successful completion of this module the learner will be able to:	
#	Learning Outcome Description
LO1	Apply the principles of linear measuring used to measure buildings, complete topographic mapping and to solve practical survey problems.
LO2	Execute computations for levelling applications such as flying levelling, longitudinal sectioning and contouring.
LO3	Detail the procedures and typical applications of distance and angle measurement captured with surveying instruments
LO4	Complete a pre-survey field plan for a typical land surveying field survey operation
LO5	Understand and interpret surveying data on maps and plans
LO6	Produce a written report detailing procedures, typical observations, calculations and results for practical surveying applications.
Dependencies	
Module Recommendations	
Incompatible Modules	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
No requirements listed	

Indicative Content	
<b>Maps and Plans</b> Understanding symbols. Coordinate Systems Northings and Eastings. Spot levels and gradients. Introduction to the Ordnance Survey. Internet resources for land surveying applications.	
<b>Linear measuring</b> Principles and techniques of linear surveying. Errors in measurement. Recording field detail. Obstructions to measurement. Plotting the survey. Measuring areas in plan. Measurement of buildings. Introduction to measurement of property boundaries.	
<b>Levelling</b> Setting up levelling instruments. Permanent adjustment of levelling instruments. Levelling procedure. Errors in levelling. Contouring. Longitudinal and Cross Sections. Setting out levels. Calculation of areas and volumes	
<b>Total Station or Theodolite</b> Instrument construction. Setting up procedure. Checking permanent adjustments. Measuring horizontal and vertical angles. Applied trigonometry.	
<b>Health and Safety</b> Health and Safety aspects of Surveying Fieldwork. Requirements for surveyors operating on roads and public spaces.	

Module Content & Assessment	
Assessment Breakdown	%
Coursework	100.00%

## Assessments

Coursework			
Assessment Type	Practical/Skills Evaluation	% of Total Mark	20
Timing	Week 4	Learning Outcomes	1,4,5,6
Assessment Description Linear measuring - report and assessment (with or without fieldwork).			
Assessment Type	Practical/Skills Evaluation	% of Total Mark	40
Timing	Week 9	Learning Outcomes	2,4,5,6
Assessment Description Levelling procedures and levelling applications - report and assessment (with or without fieldwork).			
Assessment Type	Practical/Skills Evaluation	% of Total Mark	20
Timing	Week 11	Learning Outcomes	4,5,6
Assessment Description Data capture or angular measurement - report and assessment (with or without fieldwork).			
Assessment Type	Multiple Choice Questions	% of Total Mark	20
Timing	Sem End	Learning Outcomes	1,2,3,5
Assessment Description MCQ			
No End of Module Formal Examination			
Reassessment Requirement			

**Repeat examination**

Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.

**Module Workload****Workload: Full Time**

Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Delivery of module content	Every Week	1.00	1
Tutorial	Contact	Planning for fieldwork; surveying operations and computations	Every Week	1.00	1
Lab	Contact	Familiarization with land surveying instruments and practical applications (with /without fieldwork)	Every Week	2.00	2
Independent & Directed Learning (Non-contact)	Non Contact	Review of lecture material; preparation of reports	Every Week	3.00	3
Total Hours					7.00
Total Weekly Learner Workload					7.00
Total Weekly Contact Hours					4.00

**Workload: Part Time**

Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Delivery of module content	Every Week	1.00	1
Tutorial	Contact	Planning for fieldwork; surveying operations and computations	Every Second Week	0.50	1
Lab	Contact	Familiarization with land surveying instruments and practical applications (with /without fieldwork)	Every Second Week	1.00	2
Independent & Directed Learning (Non-contact)	Non Contact	Revision of lecture material; preparation of reports	Every Week	4.50	4.5
Total Hours					8.50
Total Weekly Learner Workload					7.00
Total Weekly Contact Hours					2.50

**Module Resources****Recommended Book Resources**

J.Uren and W.F.Price. (2010), Surveying for Engineers, 5th. Palgrave Macmillan, [ISBN: 0230221572].  
W. Schofield, M. Breach. (2007), Engineering surveying, 6th. Butterworth-Heinemann, Oxford, [ISBN: 0-7506-6949-7].  
William Irvine and Finlay Maclellan. (2006), Surveying for Construction, 5th. McGraw-Hill, London, [ISBN: 0-07-711114-1].

**Supplementary Book Resources**

Prendergast, P. (2004), Best Practice Guidelines for Precise Surveying in Ireland, The Irish Institution of Surveyors, Dublin, [ISBN: 0-9533154-2-8].

*This module does not have any article/paper resources*

**Other Resources**

Website, Ordnance Survey Ireland,  
<http://www.osi.ie>  
Website, Property Registration Authority of Ireland,  
<http://www.prai.ie>

**Module Delivered in**

Programme Code	Programme	Semester	Delivery
CR_CCIVL_7	<a href="#">Bachelor of Engineering in Civil Engineering</a>	-1	Mandatory
CR_CENVL_7	<a href="#">Bachelor of Engineering in Environmental Engineering</a>	-1	Mandatory
CR_CARCT_8	<a href="#">Bachelor of Science (Honours) in Architectural Technology</a>	-1	Elective
CR_CCNMG_8	<a href="#">Bachelor of Science (Honours) in Construction Management</a>	-1	Mandatory
CR_CQTSU_8	<a href="#">Bachelor of Science (Honours) in Quantity Surveying</a>	-1	Mandatory
CR_TARCH_7	<a href="#">Bachelor of Science in Architectural Technology</a>	-1	Elective
CR_CMNGT_7	<a href="#">Bachelor of Science in Construction Management</a>	-1	Mandatory
CR_ECTWB_7	<a href="#">Bachelor of Science in Craft Technology (Wood) with Business</a>	-1	Elective
CR_CCECO_7	<a href="#">Bachelor of Science in Quantity Surveying</a>	-1	Mandatory
CR_CCIVL_6	<a href="#">Higher Certificate in Engineering in Civil Engineering</a>	-1	Mandatory
CR_CCONS_6	<a href="#">Higher Certificate in Science in Construction</a>	-1	Mandatory