



Title:	Practical Land Surveying APPROVED
Long Title:	Practical Field Surveying and Processing
Module Code:	CIVL7025
Duration:	1 Semester
Credits:	5
NFQ Level:	Intermediate
Field of Study:	Civil Engineering
Valid From:	Semester 1 - 2011/12 (September 2011)
Module Delivered in	5 programme(s)
Module Coordinator:	DES WALSH
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Module Description:	This model develops the previous knowledge of surveying. The student will develop the ability to use specialist equipment to complete engineering surveys and setting out exercises. Advanced Levelling equipment, Total Stations and Global Positioning Systems will be used. The emphasis in this module is on the practical, field use of equipment for surveying and setting out.
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Organise resources, record and process survey data using specialised equipment (eg Total Station, GPS, Digital Level)
LO2	Use computer applications to process and manipulate survey data
LO3	Use specialised equipment (eg Total Station, GPS, Digital Level) to set out construction works
LO4	Process and present in an appropriate format the outcomes of survey or setting out exercises
LO5	Work as the leader in a team carrying our surveying exercises
Pre-requisite learning	
Module Recommendations <i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>	
Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</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. You may not enrol on this module if you have not acquired the learning specified in this section.</i>	
The learner is expected to be familiar with surveying theory and procedures. The learner must have achieved the learning outcomes of 'Introductory Land Surveying' or equivalent.	

Module Content & Assessment

Indicative Content

Electromagnetic Distance Measurement

Construction and use of equipment. Sources of error and accuracy. Checking adjustment. Field procedures.

Total Stations

Data capture. Setup data. Feature codes, strings and digital ground modelling. Coordinate systems. Software and hardware requirements.

Setting out

Accuracy specification. Stages in setting out. Generation of setting out data. Methods of marking and referencing.

Data Processing

Data formats. Software systems. Digital Terrain Modelling. Data presentation, plans, sections and models. Calculation of volumes.

Global Positioning Systems

Introduction to practical Applications of Global Positioning Systems. Principles of operation. Space, control and user segments. Differential GPS.

Assessment Breakdown

	%
Course Work	100.00%

Course Work

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Detail Survey and Assessment - Fieldwork, processing and report	1,2,4,5	40.0	Week 5
Practical/Skills Evaluation	Processing and Presentation of Survey Data - Fieldwork, Laboratory, Report and assessment	2,4,5	35.0	Week 10
Written Report	Set out construction works using Total Station, GPS or Level - Processing, Fieldwork and Report	1,2,3,4,5	25.0	Sem End

No End of Module Formal Examination

Reassessment Requirement

Repeat the module

The assessment of this module is inextricably linked to the delivery. The student must reattend the module in its entirety in order to be reassessed.

The institute reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Delivery of instruction for practical work	1.5	Every Week	1.50
Lab	Practical field or laboratory work	2.0	Every Week	2.00
Tutorial	Instruction and practice in use of equipment and computer applications	1.0	Every Week	1.00
Independent & Directed Learning (Non-contact)	Revision of theory, Preparation for fieldwork and Report generation	2.5	Every Week	2.50
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.50

Workload: Part Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Delivery of instruction for practical work	1.0	Every Week	1.00
Lab	Practical field or laboratory work	4.0	Every Second Week	2.00
Tutorial	Instruction and practice in use of equipment and computer applications	2.0	Every Second Week	1.00
Independent & Directed Learning (Non-contact)	Revision of theory, Preparation for fieldwork and Report generation	3.0	Every Week	3.00
Total Hours				10.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

Module Resources

Recommended Book Resources

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

Supplementary Book Resources

- Prendergast, P 2004, *Best Practice Guidelines for Precise Surveying in Ireland*, The Irish Institution of Surveyors Dublin

This module does not have any article/paper resources

Other Resources

- website: www.osi.ie
- website: www.cices.org
- Website: www.irish-surveyors.ie

Module Delivered in

Programme Code	Programme	Semester	Delivery
CR_CCNMG_8	<u>Bachelor of Science (Honours) in Construction Management</u>	4	Elective
CR_CQTSU_8	<u>Bachelor of Science (Honours) in Quantity Surveying</u>	4	Elective
CR_CMNGT_7	<u>Bachelor of Science in Construction Management</u>	4	Elective
CR_CCECO_7	<u>Bachelor of Science in Quantity Surveying</u>	4	Elective
CR_CCONS_6	<u>Higher Certificate in Science in Construction</u>	4	Elective