CENG E7011: Surveying 3 (prog rev 2013)

Full Title:	Surveying 3 (prog rev 2013)
Language of Instruction:	English

Module Code:	CENG E7011

Credits:	5

Valid From:	Semester 1 - 2014/15 (September 2014)

Module Delivered in	1 programme(s)

Module Description:	The purpose of this module is to provide the student with practical topographical surveying and processing experience using relevant modern industry standard surveying equipment and software.

Learning Outcomes:

On successful completion of this module the learner should be able to

1. Recognise, operate and apply the use of modern surveying equipment and techniques in the area of topographical surveying on an individual and group basis.
2. Use relevant technologies to process and analyse topographical survey data for the production of fully annotated drawings and terrain models.
3. Use collected data and appropriate software technology in the detail design and analysis of infrastructural works.

Module Content & Assessment

Indicative Content
Instrument Familiarisation Practical exercises and demonstrations to enable familiarisation in the use of both Total station and Real Time Kinematic GPS surveying equipment. GPS base and rover setup and resection set up.
Ground Control Establishment Establishment and adjustment of accurate ground control.
Topographical Surveying Practicalities of large scale topographical surveying. Methodology of topographical surveying, use of strings and point features, code establishment, data recording, downloading and editing raw survey data.
Survey Data Processing Practical use and familiarisation of CivilCAD 3D. Marker symbol production. Template setup including, point and label style settings, marker alignment, Key description set, figure line styles, figure prefix databse, linework code set. Importing of edited survey data, editing of survey features, production of terrain model and earthwork volumetric calculations.
Infrastructure Design Use of CivilCAD 3D design features in conjunction with produced terrain models i.e. road alignment design including, horizontal alignment design, vertical surface profiling, vertical alignment design, assembly creation, corridor modeling, sample lines and cross section generation.

Assessment Breakdown	%
Course Work	100.00%

Full Time

Course Work

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Marks Out Of*	*Pass Marks*	*Assessment Date*	*Duration*
Practical/Skills Evaluation	Assessment of practical topographical skills, use of equipment, methodology, relevance and quality of data captured	1	40.00	0	0	n/a	0
Performance Evaluation	Use of relevant software processing captured data in the production of 3D terrain model. Includes symbol design, final CAD plots and template setup.	1,2	30.00	0	0	n/a	0
Performance Evaluation	Infrastructural design exercise using relevant design application software in conjunction with produced terrain models.	2,3	30.00	0	0	n/a	0

No Project

No Practical

No End of Module Formal Examination

Reassessment Requirement

No repeat examination
Reassessment of this module will be offered solely on the basis of coursework and a repeat examination will not be offered.

DKIT reserves the right to alter the nature and timings of assessment

Module Workload & Resources

Workload: Full Time

Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Practical	Computer lab based data processing	2.00	Every Week	2.00
Practical	Surveying practical	2.00	Every Week	2.00
Independent Study	Application of Skills demonstrated during practical sessions	3.00	Every Week	3.00
Directed Reading	Assimilation of relevant software user quides	2.00	Every Week	2.00
			Total Weekly Learner Workload	9.00
			Total Weekly Contact Hours	4.00

This course has no Part Time workload.

Resources

Supplementary Book Resources

William Irvine & Finlay Maclennan 2006, *Surveying for Construction*, 5th Ed., McGraw-Hill London [ISBN: 0-07-711114-1]

Eric Chappell 2012, *AutoCAD Civil 3D 2013 essentials*, 1st Ed., Wiley Hoboken, NJ, USA [ISBN: 9781118333235]

James Wedding, Dane Probert 2008, *Introducing AutoCAD Civil 3D 2009*, 1st Ed., Wiley Hoboken, NJ, USA [ISBN: 9780470431696]

Richard Graham, Louisa Holland 2011, *Mastering AutoCAD Civil 3D 2012*, 1st Ed., Sybex Hoboken, NJ, USA [ISBN: 9781118016817]

This module does not have any article/paper resources

Other Resources

website: Amicus technology*Civil Engineering Community*, Autodesk, Link to AutoDesk
http://www.Amicustec.ie

Module Delivered in

Programme Code	Programme	Semester	Delivery
DK_ECIVL_7	Bachelor of Engineering in Civil Engineering	5	Mandatory