



UNIVERSITI TEKNOLOGI MARA

AAR563: ENGINEERING SURVEY

Course Name (English)	ENGINEERING SURVEY APPROVED
Course Code	AAR563
MQF Credit	2
Course Description	This course covers on the general aspects on land surveying. The topics are prismatic compass, leveling, traverse control (theodolite), tachometry, setting out, area and volume measurements and calculations.
Transferable Skills	Systematically Inquisitive Expert in Field
Teaching Methodologies	Lectures, Tutorial
CLO	CLO1 Describe the basic theory of engineering surveying and its related equipment. CLO2 Illustrate the understanding of various measurement techniques and surveying procedures involved in land surveying.
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction to land surveying 1.1) Branching of surveying - Topographic Surveys, Geodetic survey, Engineering Surveys, Cadastral Surveys and Hydrographic Survey 1.2) Photogrammetry, Geographical Information Systems (GIS) and Global Positioning System (GPS)	
2. Linear measurement 2.1) Chain surveying and prismatic compass	
3. Leveling 3.1) Procedure in leveling and uses of leveling (theory and field works)	
4. Theodolite Survey (traverse control, theory and field works) 4.1) Principle, handling and adjustment of equipment, measurement of distances and angles. 4.2) Observation, booking technique, data reduction, adjustment of errors and plotting for second class traverse.	
5. Tachometry (theory and field works) 5.1) Introduction to tachometry; optical principle and basic equation. 5.2) Detail collection and traverse control; observation and booking, data analysis and plotting.	
6. Setting out in building construction 6.1) Introduction to setting out. 6.2) Control survey for building construction line. 6.3) As built drawing.	
7. Measurement (Area and Volume) 7.1) Introduction to area and volume. 7.2) Area enclosed by straight lines. 7.3) Irregular figures, Trapezoidal rule and Simpsons's rule. 7.4) Volumes – earthwork calculations from contour line and spot levels.	

Assessment Breakdown	%
Continuous Assessment	40.00%
Final Assessment	60.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Test	TEST 1	20%	CLO1
	Test	TEST 2	20%	CLO2

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> • P.Glover 2009, <i>Building Surveys</i>, Butterworth-Heinemann • E.A. Noy & J. Douglas 2005, <i>Building Surveys and report</i>, Wiley- Blackwell • Hollis,M. 2002, <i>Pocket Surveying Buildings</i>, Coventry, RICS Books. • Clarke, David, Constable and Co. LTD 1977, <i>Plane and Geodetics For Engineers</i>, 6 Ed., London • Kennie., T.J.M 1991, <i>Engineering Surveying Technology</i> , London, E. & F.N. Spoon • Saidgrove,B. 1990, <i>Setting-out Procedures</i>, London, Butterworth • Williams,A. 1992, <i>Domestics Building Surveying</i>, London, E. & F.N. Spoon

Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources