

Higher National Certificate/Diploma in Construction and the Built Environment(RQF)

Unit Ref No.:

7

Surveying, Measuring & Setting Out

Unit Code

H/615/1393

Candidate's Name: (LARGE CAPITALS PLEASE)			
Assessor's Name:	Angelo Filomeno	Verifier's Name:	
Date Assignment brief Internally Verified & Released for distribution:			
Issue Date:	September 2017	Due Date:	See Scheme of Work
Assignments	Submission Format		
One assignment of an ongoing nature to cover all aspects of the unit.	The submission is in the form of an individual report which includes all the field booking -in sheets, and site sketches. Completed survey plan and topographic details including sections. All calculations and programming aids. All research, critical analysis and justification for work done. And any other statements/reviews required to further explain the submission. Photographic evidence of practical work including witness statements should also be available..		
Important Information: Where there is evidence of plagiarism the assignment will be rejected and the candidate will not have an opportunity to re-submit the work. This will, inevitably, jeopardise your chances of completing the unit. Work that is not handed in on time will <u>not</u> be assessed without an appropriate mitigating circumstances form. Missing a Practical session will jeopardise your chance of achieving. It will be up to the student to organise alternative practical sessions. Meeting the requirements of your tasks will achieve a Pass grade in that particular criteria. Higher grades can be achieved by displaying higher grade characteristics across most of your work. Further some tasks are more likely to attract higher grades and others must be completed to achieve higher grade.			
FINAL SUMMARY OF ACHIEVEMENT			
criteria	Date achieved	Assessors Signature and relevant comments:	
P1			
P2			
P3			
P4			
P5			
P6			
P7			
P8			
P9			
MERIT			
DISTINCTION			
Candidate's Signature signifying own work		Date and verifier's Initials if candidate's work has been internally verified	
Dates of Submissions			
The completed tasks are to be submitted by hand to your tutor. (angelo filomeno)			
Hand completed work is to be scanned into pdf format and kept as a secure backup.			

Incomplete or substandard work will attract a Referral Grade (R). You will have one week to rectify the submission.(Higher grades are not allowed on resubmitted work)

Surveying Assignment:	
<p>Throughout the year you will be given practical sessions to enable you to become competent with surveying instruments. These sessions should be seen as the backbone to producing the other written/calculation work required.</p> <p>Due to the uncertain nature of the British weather submission dates relating to practical work are not given. <u>You must hand in all your work two weeks before the end of the academic year.</u> Please note that all practical work has also an element of written work associated with it but shown in different sections due to the nature of the unit specification.</p>	
<p><u>Scenario</u></p> <p>Consider yourself as Site Surveyor for a new greenfield site and are tasked to conduct an initial survey followed by a more detailed survey to produce a map of the area, then using Secondary points previously determined to set out various buildings and road centrelines.</p> <p>The stages should be as follows;</p> <ul style="list-style-type: none">• Conduct a linear survey of the area and produce a simple plan to delineate main features.• Transfer an OBM level to the site (from a TBM) for subsequent levelling procedures and Vertical Control during building operation.• Conduct a traverse survey for the area, identifying Primary and Secondary control points.• Conduct a detailed survey of the area based on the traverse conducted earlier using radial tacheometry or other methods.• Produce a survey map of the area to an appropriate scale on A3 paper.• Determine the topography of the site by taking ground levels and forming a contour map.• Set out Horizontal control (Corner Pegs) using predetermined Secondary control points for a building. Take appropriate checks to ensure the setting out is correct.• Produce a report to accompany the detailed survey plan explaining the purpose of the survey and the steps taken to minimise errors both in the survey and the subsequent staking out operations.	
<p><i>ENSURE YOU REFER TO THE ASSIGNMENT CRITERIA THAT FOLLOWS TO DETERMINE THE EXACT NATURE OF YOUR SUBMISSION</i></p>	
<p>Answers to the tasks should be based on the scenario given above.</p>	
<p>Exact area of work will be as confirmed by you tutor. Further information to enable you to complete your tasks will be provided by your tutor throughout the year.</p>	
<p><i>A relevant Primary Control Point will be indicated on site by your tutor. The Coordinate of which are:</i></p> <p><i>521763.5mE, 185192.0m. OBM level: 38.350m AOD</i></p>	

PASS Assessment Criteria	Feedback/markings /comments
P1 Describe the types of control networks that are available for surveying, including examples of local and national stations.	
P2 Carry-out a closed traverse survey of a network, including at least five stations.	
P3 Calculate corrected co- ordinates and heights for the stations and explain the stages used.	
P4 Explain the process of conducting a topographic survey for a given plot of land, including initial control.	
P5 Describe, with examples, common coding systems and data exchange processes, including communicating final outcomes.	
P6 Extract and transfer the required data from a given project to a total station in order to allow setting out to commence.	
P7 Complete a full setting out operation on a given project by utilising a total station free station programme, including both horizontal and vertical control.	
P8 Prepare a report on the common causes of errors in both setting out and surveying.	
P9 Compare the accuracy of setting out data to national standards.	

HIGHER GRADES Assessment Criteria	Feedback/markings /comments
M1 Calculate and compare the accuracy achieved in a closed traverse survey.	
M2 Review the content of a topographic survey, including analysis of its suitability to assist the design team in completing the design.	
M3 Analyse the accuracy achieved from a setting out operation from tie distances recorded, total station stored data and another means.	
M4 Evaluate the causes of errors in surveying, setting out and data transfer.	
D1 Assess the accuracy of a network in the production of a topographic survey.	
D2 Analyse both the accuracy achieved and the techniques used during the practical exercise.	
D3 Analyse the techniques used to improve accuracy, including the implication of setting out errors and the application of industry standard technology/ software.	

Reference Material:

Irvine W – *Surveying for Construction* – 5th Ed (McGraw-Hill, 2005)

Brighty, S.G.- *Setting Out a guide for engineers -2nd Ed.(Blackwell Scientific Publications, 1992)*

Sadgrove, B.M – *Setting out Procedures* – (CIRIA publ. 145, 2007)

BS 5964

The student is expected to research further using the internet (ensure you quote all references)

WWW.ciria.org.uk/ciria/ WWW.mapzone.co.uk www.ordnancesurvey.co.uk/gisfiles

[www.angelifilomeno.com/surveying IV](http://www.angelifilomeno.com/surveying_IV)

www.ice.uk , tsa-uk.org.uk

Ensure you quote and acknowledge all sources of references