Surveying and CAD

Module Information

2022.01, Approved

Summary Information

Module Code	4503CVQR
Formal Module Title	Surveying and CAD
Owning School	Civil Engineering and Built Environment
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Oryx Universal College WLL

Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	20
Workshop	22

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-PAR	PAR	January	12 Weeks

Aims and Outcomes

Aims	To provide an introduction to basic techniques for land surveying and setting out. It includes methods of obtaining field measurements for the purpose of producing site drawings, and setting out points using line-of sight.To develop an understanding of the use and application of Computer Aided Design in the Built Environment and the development of 2-dimensional drafting techniques and conventions.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Carry out a field exercise to illustrate methods of levelling and angular measurement: booking, calculation and application.
MLO2	2	Use measured values to compute and draw site plans, longitudinal and cross sections.
MLO3	3	Produce completed booking sheets showing all calculations in the areas of levelling and angular measurement.
MLO4	4	Identify and calculate data necessary for setting out of civil engineering works.
MLO5	5	Demonstrate proficient use of CAD software to produce 2D engineering drawings using standard construction industry conventions.

Module Content

Outline Syllabus	Vertical control: Set up, use and adjustment of the level. Ordnance Bench Marks.Levelling techniques. Accuracy checks.Horizontal control: Set up, use and adjustment of Total Station. Traverse surveys and their adjustment.Application of digital instruments and the use of computer packages in surveying.Setting Out: Procedure for co-ordinated setting out, procedures and practices for setting out ground works, road construction and drainage works.Applications: Computation and drawing of site plans, longitudinal sections and cross-sections. Introduction to CAD and applications of the software in practice. Creating, opening and saving CAD files using the current industry standard CAD software.Setting up system preferences, drawing scales, drawing sheet size, borders, title block. Use of view, zoom and pan commands, layers, line types, text styles, and dimension styles.Drawing and modifying 2D objects using standard construction industry conventions.Editing, enhancing, annotating and setting up drawings for plotting.Production of site plans, longitudinal sections, cross-sections, and detail drawings.Use of format, draw, tools and modify commands. Use of layers, line type and weight, lock, freeze and thaw. Creating and editing text and dimensions
Module Overview	
Additional Information	This module introduces students to land surveying techniques and to CAD drawing, as required for a Civil Engineer working either on site or in a design context.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Practice	SURVEYING AND CAD DRAWINGS	50	0	MLO1, MLO3, MLO5
Exam	Examination	50	2	MLO2, MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Ziad Abdeldayem	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings