

**Summary Information**

<b>Module Code</b>	5219BEUG
<b>Formal Module Title</b>	Geomatics
<b>Owning School</b>	Civil Engineering and Built Environment
<b>Career</b>	Undergraduate
<b>Credits</b>	20
<b>Academic level</b>	FHEQ Level 5
<b>Grading Schema</b>	40

**Module Contacts**

**Module Leader**

Contact Name	Applies to all offerings	Offerings
Layth Kraidi	Yes	N/A

**Module Team Member**

Contact Name	Applies to all offerings	Offerings
Volkan Ezcan	Yes	N/A
Fiona Borthwick	Yes	N/A

**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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**Teaching Responsibility**

<b>LJMU Schools involved in Delivery</b>
Civil Engineering and Built Environment

## Learning Methods

Learning Method Type	Hours
Lecture	10
Practical	20
Workshop	20

## Module Offering(s)

Offering Code	Location	Start Month	Duration
JAN-CTY	CTY	January	12 Weeks

## Aims and Outcomes

<b>Aims</b>	To introduce the principles and techniques involved in land surveying and setting out on site and demonstrate the use of Imaging and Unmanned Aerial Systems for the surveying, inspection and monitoring of construction works including data output integration with digital terrain models and BIM.
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## Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Carry out practical surveys and setting out procedures using equipment including tapes, levels, total stations, GNSS receivers and imaging systems.
MLO2	Undertake relevant surveying calculations using gathered field data.
MLO3	Undertake setting out calculations using construction drawings.
MLO4	Use relevant data processing, drawing and modelling software with gathered field data.

## Module Content

Outline Syllabus
Linear measurement, units and the use of OS maps. Errors. Levelling, use of level and staff, levelling procedures and applications. Angle measurement, use of conventional and robotic total stations. Survey controller instruments, onboard software and data to pc transfer. Traverse surveying calculations. Topographic surveys. GNSS RTK, point cloud and aerial imagery data. Post-processing of total station, GNSS, Imaging and UAS output data. Topographic CAD survey and digital terrain modelling software packages. Setting out techniques and procedures for horizontal and vertical control on site. Safety and Risk Assessment in surveying operations.

### Module Overview

Geomatics is the collection, processing, analysis, presentation and management of spatial information which you will develop a knowledge and skill of during this module. In this module you will be introduced to the principles and techniques involved in land surveying and setting out on site. You will learn to demonstrate the use of Imaging and Unmanned Aerial Systems for the surveying, inspection and monitoring of construction works including data output integration with digital terrain models and BIM.

### Additional Information

Geomatics is the collection, processing, analysis, presentation and management of spatial information which the student will have developed a knowledge and skill of during this module with a particular focus on the construction process.

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Report	Scenario Based	60	0	MLO4, MLO2, MLO3
Report	Surveying Practical	40	0	MLO1, MLO2, MLO3