PHOTOGRAMMETRY AND REMOTE SENSING

UNIT CODE: LSM/CU/LM/CC/04/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: apply principles of photogrammetry and remote sensing

Duration of Unit: 120 hours

Unit Description

This unit describes the competencies required by a Photogrammetrist to collect data, pre-process data, process data, present data, and store and archive data.

Summary of Learning Outcomes

1. Collect data
2. Pre-process
3. Process data
4. Present data
5. Store and archive data

Learning Outcomes, Content and Suggested Assessment Methods

Learning outcome	Content	Suggested Assessment Methods

1. Collect data	❑ Principles of photogrammetric data collection
	   o Electromagnetic spectrum
	   o Types of sensors and platforms
	❑ Types of survey data
	   o Raster
	   o Vector
	❑ Sources of photogrammetric data
	   • Aerial photographs
	   • Ground coordinates
	   • Satellite Imagery
	   • Drone Imagery
	❑ Methods of data collection
	   • Aerial photography
		❑ Observation
		❑ Oral Questioning
		❑ Written Tests
		❑ Projects

	• Download satellite imagery • Drone technology • Land survey ❑ Tools and equipment for data collection • Aircraft • Drone • Satellite • Cameras and Sensors • Storage equipment ❑ Data collection procedures ❑ Data storage	
2. Pre-process data	❑ Tools for data pre-processing • Computers • Digital Photogrammetric Workstations (DPWs) • Software ❑ Orientations • Inner orientation • Relative orientation • Absolute orientation ❑ Aerial triangulation	❑ Observation ❑ Oral Questioning ❑ Written Tests ❑ Projects
3. Process data	❑ Data Extraction Processes • Features • Digital Terrain Models (DTM) • Digital Elevation Models (DEM) • Digital Surface Models (DSM) • Contours • Data editing and cleaning of models • Orthophoto maps ❑ Data management • format • export • import	❑ Observation ❑ Oral Questioning ❑ Written Tests ❑ Projects

4. Present data	❑ Data presentation methods • softcopy • hardcopy • 3D models	❑ Observation ❑ Oral Questioning ❑ Written Tests ❑ Projects
5. Store and archive data	Data archival procedures • Hard copy • Softcopy • Filing • Security ❑ Data retrieval • Sharing • Access rights ❑ Creation of Metadata • Components • Data source	❑ Observation ❑ Oral Questioning ❑ Written Tests ❑ Projects

Suggested Delivery Methods
- Lecturing
- Group discussions
- Demonstration by trainer
- Exercises by trainee
- Video clips

Recommended Resources

- Data
- Computers with Photogrammetric software.
- Plotters and printers
- Projectors
- Smart boards
- Data collection equipment
- Photogrammetric Scanners
- Servers