GEE 4812:
Principles of Geomatics

Application of Geomatics

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What is Geomatics?

- GEO + MATICS
- GEO = anything on the surface of the earth slightly below or slightly above the earth.
- MATICS = stands for MEASUREMENT.
- Study of the techniques and tools used in the measurement of geographical phenomena.

Geomatics: Disciplines

- Geomatics encompasses many disciplines:

➢ Land Surveying

➢ Photogrammetry

➢ Remote Sensing

➢ GIS (Geographic Information Systems)

Application: Construction

Implement building plans on the ground:

- Absolute: length, width, height, area e.t.c
- Relative: position in relation to other features e.g distance and orientation.

Road Construction:

- Ensures that the road is in the correct path and according to the design.

Application: Mining

Mineral Exploration:

- Identifying potential mineral deposits using Remote Sensing techniques

Production of Mine Plans:

- Open pit and Underground maps.

Quantify Material mined:

- Volume of stockpiled material
- Payment of haulage contractors.

Application: Soil Mapping

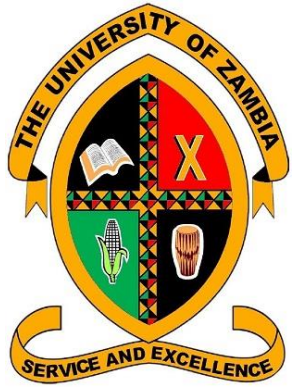
- Determine the location of soil samples
- Production of Soil Maps
- Determine soil moisture content using remote sensing techniques.

Application: Agriculture

- Irrigation systems
- Crop yield estimation
- Using drones to spray pesticides
- Monitoring vegetation health using NDVI (Normalized Difference Vegetation Index)

Other Applications

- Land demarcation
- Water and Sewer Utilities
- Drainage Systems
- Deformation Monitoring
- Dam Capacity
- Health Sector
- Weather Forecasting
- Site Suitability Analysis
- Disaster Management e.t.c



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