

This hands-on workshop designed for individuals who are new to **GIS (Geographic Information Systems)** and **GPS (Global Positioning System)**. The workshop combines tutorials and practical exercises to provide a strong foundation in both technologies

Schedule

Day 1:

Map Reading (using Sol Toposheets as an example) (9:30 - 11:30)

- What is a Map, Types of maps and Map language
- Structure and components of Sol toposheet, types of Sol toposheets: 1:50k, 1:25k etc; Sol toposheet numbering
- Interpreting symbols, colors, and scales. Types of symbol category - points, lines and polygons
- Locating features using grid references. Grid reference - Latitude and longitude. UTM projections.
- Measure distances, elevations, contour lines - definition, interpretation
- Identify land-use/land-cover, drainage network, human settlements.

Tea Break (11:30 - 12:00)

GPS Basics (12:00 - 13:00)

- Introduction to GPS: What it is and how it works in the field
- Types of GPS devices and mobile apps (e.g: OSMAnd)
- Uploading coordinates in the GPS

Lunch (13:00-14:00)

Field exercise (14:00 - 16:00)

Treasure hunt and data collection: Navigating routes and Making waypoints

Tea Break (16:00 - 16:30)

Interaction (16:30 - 16:45)

Day 2

Introduction to GIS and Importing GPS data into GIS software (09:30 - 11:00)

Introduction to GIS and QGIS

- What is GIS? Concepts and real-world applications
- Understanding spatial and attribute data - connecting it with toposheet/map features
- Overview of free and open-source GIS tools (e.g., QGIS)

Working with GIS Software (QGIS)

- Navigating the QGIS interface
- Loading vector: Importing GPS data as .gpx files and spreadsheet (.csv)
- Visualising the data, adding google base layer (introduction to open layers plugin)
- Attribute table operations and data queries

Tea Break (11:00 - 11:30)

Using GIS tools for analysis, georeferencing and digitising (11:30 - 13:00)

- Measuring area and distance using QGIS tools
- Georeferencing scanned maps/ toposheets
- Updating canned datasets by digitising missing features
- Performing basic spatial analysis (e.g., buffer, Clip, centroid, overlay etc..)

Lunch (13:00 - 14:00)

Map Making (14:00 - 16:30)

- Creating and exporting maps
 - Components of print composer
 - Adding layer
 - Adding map components: legend, scale, north arrow, grids, title, label, labelling features, map-inset
 - Exporting map into PDF/JPG

Interaction (16:30 - 16:45)