

# An Introduction to Geospatial Workflows (G510)



## Tutor(s)

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## Overview

This course provides a broad overview of geoinformatics and the practical application of geospatial technologies to tackle key challenges of the GeoEnergy Transition.

## Duration and Logistics

**Classroom version:** A 1.5-day course comprising a mix of lectures, case studies and exercises. The manual will be provided in digital format and participants will be required to bring a laptop or tablet computer to follow the lectures and exercises.

**Virtual version:** Three 3.5-hour interactive online sessions presented over 3 days. A digital manual and exercise materials will be distributed to participants before the course. Some reading and exercises are to be completed by participants off-line.

## Level and Audience

**Fundamental.** The course is intended for any geoscientists looking to increase their understanding and practical experience of spatial data and workflows.

## Objectives

You will learn to:

1. Recognise different types of spatial data, and how they can be represented and stored in Geographic Information Systems (GIS) and related software.
2. Describe the pros and cons of 2-D and 3-D geospatial user interfaces as a primary way to organize and access data.
3. Understand spatial resolution, precision and accuracy.
4. Assess different approaches to evaluating spatial data, including geostatistics and geospatial analysis.
5. Download and process earth observation satellite imagery.
6. Acquire and process Global Navigation Satellite System (GNSS) data for high precision spatial positioning.
7. Evaluate current trends in the GeoEnergy Transition.

## Course Content

## Overview

As an overview of geoinformatics and the practical application of geospatial technologies, the course will include:

- Introduction and overview
- Spatial data and GIS fundamentals
- Geostatistics
- Geospatial data analysis in GIS
- Satellite navigation systems – GNSS
- Imaging and monitoring Earth from space
- Industry trends, digitalization, cloud storage, edge computing and artificial intelligence (AI)