



## Applied Geographical Information Systems

Presented by the Centre for Geoinformation Science, University of Pretoria

4–6 February 2019 | 20–22 May 2019

Geographical Information Systems (GIS) can play a key role in helping scientists, decision-makers, and the public develop collaborative solutions to real-world problems. GIS mapping tools have become imperative for many fields, such as epidemiology, veterinary science, urban planning and environmental assessment. The **Applied Geographical Information Systems** short course is an introduction to a range of geospatial techniques used in the analysis of spatial data. Practical case studies are employed to help you confront real world problems and design a solution using GIS. The software package ArcGIS is used to visualise, explore, analyse and map the solution.

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*Shifting knowledge to insight*



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## Course content

### Theoretical content

- What is special about spatial data?
- Spatial autocorrelation
- Spatial analysis of points
- Spatial analysis of lines and areas
- Hot spot analysis
- Regression modelling
- Issues when analysing spatial data

### Practical content

- Stepping through the spatial analysis process
- Descriptive statistics
- Exploratory spatial data analysis (ESDA)
- Spatial autocorrelation
- Spatial analysis
- Case study one: Solving a real world problem in public health
- Case study two: Solving a real world problem in crime
- Case study three: Solving a real world problem in the environmental sciences

## Learning outcomes

After successfully completing this course, you will

- understand what spatial methods are appropriate for varying data types
- be aware of some of the societal problems and critiques associated with GIS
- be able to carry out an advanced GIS or spatial analysis research project using GIS
- be a competent user of mainstream GIS software, gaining skills employers require, and
- have the knowledge to critically appraise spatial analysis in published work.

## Who should enrol?

This course is suitable for anyone with a basic knowledge and understanding of GIS, ethics and professionalism. This is not an introduction to GIS course.

## Course fees

**R7 050.00 per delegate (VAT incl.)**

Course fees include all course notes, text books and refreshments during contact days.

**Course fees must be paid in full 14 days prior to course start dates. Proof of payment can be submitted to [enrolments@enterprises.up.ac.za](mailto:enrolments@enterprises.up.ac.za).**

## Admission requirements

Prospective delegates should ideally have a basic knowledge of GIS and/or geographic data, but is not a prerequisite.

## Accreditation and certification

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## Registration and enquiries

### Course coordinator

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### Course leader

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