



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

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COURSE BROCHURE

GIS and Spatial Data Analysis

Custom Courses / Environment Monitoring, Evaluation & Research

Unit Standard AATICD-0167 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course equips participants with the skills to collect, manage, analyze, and visualize spatial data using Geographic Information Systems (GIS). It covers fundamental GIS concepts, data acquisition, spatial analysis techniques, and map production to support decision-making in various sectors such as urban planning, environmental management, and logistics.

Category	Custom Courses
Subfield	Environment Monitoring, Evaluation & Research
Unit Standard	AATICD-0167
Accreditation	SAQA Accredited · NQF Level 5 · 10 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply fundamental GIS concepts and data models to capture and store spatial data.
- Analyze spatial relationships and patterns using vector and raster analysis techniques.
- Evaluate data quality and perform geoprocessing operations to prepare data for analysis.
- Design and produce thematic maps and cartographic outputs for reporting and presentation.
- Implement spatial queries and use GIS tools to solve real-world spatial problems.
- Demonstrate the ability to manage and maintain a GIS database including metadata.

WHO SHOULD ATTEND

- This course is designed for professionals and technicians in planning, environmental science, engineering, logistics, and related fields who need to apply GIS and spatial data analysis in their work.

COURSE OUTLINE

Day 1: Introduction to GIS and Spatial Data

- What is GIS? History and applications
- Vector data: points, lines, polygons
- Raster data: grids and imagery
- Coordinate reference systems (CRS) and projections
- Introduction to QGIS: interface, layers, and basic navigation

Day 2: Data Acquisition and Management

- Sources of spatial data: open data portals, field data, remote sensing
- Data formats: Shapefile, GeoJSON, GeoPackage
- Digitizing and editing vector features
- Attribute tables: queries, calculations, and joins
- Data management best practices

Day 3: Spatial Analysis and Querying

- Spatial queries: select by location, select by attribute
- Vector analysis: buffer, clip, intersect, union
- Raster analysis: terrain analysis (DEM), reclassification
- Network analysis: routing and service areas
- Visualizing and interpreting results

Day 4: Cartography and Map Production

- Cartographic design principles: colour, symbology, typography
- Thematic mapping: choropleth, proportional symbols
- Map layout: print composer, adding legends, grids
- Exporting maps: PDF, image, web formats
- Creating map series

Day 5: Advanced Applications and Integration

- Geocoding and reverse geocoding
- Spatial statistics: average nearest neighbour, hot spot analysis
- Automation: batch processing, model builder
- Data integration: importing CSV, KML, GPS data
- Mini-project: problem-solving using GIS

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **10 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 24,200.00	R 24,200.00
1	In-House	R 31,400.00	R 31,400.00
1	On-Campus (Pretoria)	R 36,200.00	R 36,200.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	07 Aug 2026	On-Campus	Pretoria, South Africa
03 Aug 2026	07 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Abu Dhabi, UAE
17 Aug 2026	21 Aug 2026	On-Campus	Harare, Zimbabwe
17 Aug 2026	21 Aug 2026	On-Campus	Shenzhen, China
24 Aug 2026	28 Aug 2026	On-Campus	Bangkok, Thailand
24 Aug 2026	28 Aug 2026	On-Campus	Victoria Falls, Zimbabwe

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

- 1. Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard AATICD-0167) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
- 2. Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
- 3. Apply by phone or WhatsApp:** call +27 12 004 8389 or WhatsApp +27 65 077 6310 and we will prepare your quotation and reserve your seats.
- 4. Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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