MAGNA SKILLS DEVELOPMENT INSTITUTE

Capacity Building • Professional Training • Organisational Development

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Course Profile Document

Environmental, Urban and Regional Planning

GIS Remote Sensing and Geospatial Analysis

Prepared as a professional course profile for delegate review, sponsorship approval and organisational training planning.

COURSE CODE	DELIVERY	DURATION	PREPARED FOR
MSD3007	**Online / Face-to-Face**	**Flexible**	**Organisation Approval**

Register for this Course **View Online Course Page**

Course Overview

Magna Skills presents the **GIS Remote Sensing and Geospatial Analysis** course, designed to provide participants with comprehensive skills in using Geographic Information Systems (GIS) and remote sensing technologies for spatial data collection, analysis, and visualization. The course covers fundamental concepts of GIS, remote sensing techniques, and geospatial analysis tools, preparing professionals to make data-driven decisions in various fields such as environmental management, urban planning, agriculture, and disaster management

Course Outcomes

Upon completing this course, participants will:

1. Understand the fundamental principles of GIS and remote sensing technologies.
2. Develop proficiency in spatial data collection, management, and analysis using GIS software.
3. Analyze remote sensing imagery for geospatial data extraction and interpretation.
4. Apply geospatial analysis techniques to real-world scenarios in environmental management, urban planning, and resource management.
5. Create high-quality maps and geospatial visualizations for reporting and decision-making

Course Outline / Curriculum

Module 1: Introduction to GIS and Remote Sensing

- Overview of GIS principles and applications.
- Fundamentals of remote sensing and its significance.
- GIS and remote sensing technologies in geospatial analysis.

Module 2: Spatial Data Collection and Management

- Sources of geospatial data: satellite imagery, GPS, and surveys.
- Data formats, storage, and metadata management.
- Introduction to GIS software (ArcGIS, QGIS).

Module 3: Remote Sensing Image Acquisition and Processing

- Remote sensing platforms: satellites and drones.
- Image acquisition techniques and sensors.
- Preprocessing of remote sensing data: georeferencing, mosaicking, and radiometric correction.

Module 4: GIS Data Analysis and Modeling

- Spatial analysis techniques: buffering, overlay, and network analysis.
- Geospatial modeling and terrain analysis.
- Building spatial models for predictive analysis.

Module 5: Remote Sensing Data Interpretation

- Interpretation of satellite imagery for land cover and land use classification.
- Vegetation indices (NDVI) and their applications.
- Techniques for detecting environmental changes using remote sensing.

Module 6: Geospatial Analysis for Environmental Management

- Applications of GIS and remote sensing in environmental monitoring.
- Using geospatial data for biodiversity conservation, deforestation mapping, and climate change analysis.
- Case studies in environmental management.

Module 7: Urban and Regional Planning with GIS

- GIS applications in urban planning and development.
- Spatial data for infrastructure planning and zoning.
- GIS for disaster risk reduction and emergency response planning.

Module 8: Agriculture and Resource Management with GIS

- Precision agriculture using GIS and remote sensing.
- Soil mapping, crop monitoring, and yield prediction.
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Water resource management through geospatial analysis.

Module 9: Geospatial Data Visualization and Cartography

- Principles of cartographic design.
- Creating professional maps using GIS software.
- Visualization techniques for geospatial data presentation.

Module 10: Advanced GIS Tools and Future Trends

- Introduction to 3D GIS and spatial data.
- Big data and cloud computing in GIS.
- Emerging trends in remote sensing and geospatial technologies (LiDAR, UAVs).

4. Who Can Attend:

- Environmental scientists and researchers.
- Urban planners and civil engineers.
- Agricultural experts and resource managers.
- GIS specialists and data analysts.
- Anyone interested in using GIS and remote sensing for geospatial analysis.

This course will empower participants with the skills to effectively use GIS and remote sensing technologies for data-driven geospatial analysis and decision-making in a wide range of fields. Through hands-on exercises and real-world case studies, learners will gain practical expertise in spatial data management and analysis.

Target Audience

Key Course Benefits

Work-Ready Skills

Delegates leave with practical tools, templates and methods they can apply immediately at work.

Better Institutional Results

The programme supports stronger planning, reporting, compliance, accountability and service delivery.

Sponsor-Friendly

This document is designed to help supervisors, HR units and sponsors approve delegate participation quickly.

Professional Recognition

Delegates receive training documentation and a certificate of completion after successful participation.

Our Training Centres & Delivery Options

Magna Skills offers flexible delivery through face-to-face training centres across Africa and beyond, plus Online / E-Learning for delegates who prefer remote participation.

Southern Africa

Practical training destinations with strong travel access and delegate support.

- Pretoria, South Africa
- Vic Falls, Zimbabwe
- Livingstone, Zambia

East Africa

Popular regional centres for government, NGO and donor-funded project teams.

- Kigali, Rwanda
- Kampala, Uganda
- Nairob
- Zanzibar, Tanzania

West Africa & Islands

Strategic locations for regional networking and executive capacity building.

- Accra, Ghana
- Port Louis, Mauritius

International Executive Venue

Premium destination training for senior teams and international delegates.

- Dubai, United Arab Emirates

Online / E-Learning

Attend from anywhere through live online, blended or self-paced learning options.

- Online, E-Learning
- Remote Teams
- Flexib

Organisation-Based Training

Magna Skills can also arrange dedicated in-house training for ministries, NGOs and companies.

- Onsite
- Custom Dates
- Group Training

Ready to Nominate Delegates?

Use the links below to register, review the live course page or contact Magna Skills for organisation-based training support.

Register / Apply Online | **View Full Course Page**

About Magna Skills

Magna Skills Development Institute provides practical capacity building programmes for government departments, NGOs, public institutions, donor-funded projects and private sector professionals across Africa. Our training approach combines expert facilitation, real workplace case studies, practical tools, post-training support and professional documentation that helps organisations strengthen staff performance and service delivery.

Government Training | NGO Capacity Building | Corporate Workshops | Online Learning | Face-to-Face Training | Certifica

Approval & Authorisation Form

This section may be completed by the organisation, department, HR office, finance office or sponsor approving delegate participation. It can be attached to an internal memo, procurement request or training approval submission.

Organisation / Department	
Delegate Name(s)	
Approved Course	GIS Remote Sensing and Geospatial Analysis
Preferred Delivery Mode	☐ Online ☐ Face-to-Face ☐ Organisation-Based Training
Preferred Training Venue / Date	
Estimated Number of Delegates	
Budget / Vote Number	
Contact Person	
Email / Mobile	

Authorised Name _____ Signature / Stamp _____ Date _____