cooperative governance
Department:
Cooperative Governance
REPUBLIC OF SOUTH AFRICA

MUNICIPAL INFRASTRUCTURE SUPPORT AGENT (MISA)

MISA
MUNICIPAL INFRASTRUCTURE SUPPORT AGENT
Today, Creating a Better Tomorrow

CPD (SAGC)

Introduction to Geographic Information Systems (GIS) in Local Government

The Municipal Infrastructure Support Agent (MISA) in partnership with SAICE Professional Development & Projects (SAICE-PDP) invites you to attend this 2-day course which aimed at achieving simplified data management in ArcGIS.

This course uses existing data management workflows to perform a variety of common tasks such as creating a project space, assigning coordinate systems, georeferencing, and designing maps in GIS.

Whether you work in the Roads, Stormwater, Water Works, Electricity, or Asset Management departments, you will almost certainly come across CAD Data. Integrating CAD data with your GIS can be a difficult and time-consuming process.

This course is designed to teach professionals in local government best practices for handling and managing CAD data in a GIS environment. You will learn how to load, analyze, and share data while maintaining data integrity and accuracy.

The course is taught using ArcGIS Pro.

Presenters:

Basil Rabophala (Geospatial Lecturer)
Malwande Galada (ArcGIS Desktop Professional)
Tendai Dupwa (ArcGIS Desktop Professional)

COURSE SCHEDULE

Venue:
Dates:
Time:

REGISTRATION

To register, visit www.saicepdp.org

For more details contact Nompumelelo Nyaba:
Email nompumelelo@saicepdp.org /
Tel: 011 476 4100

WHO SHOULD ATTEND

The course helps municipal attendees to apply their theoretical training in practice.

It is therefore recommended for:

- GIS practitioners
- Planners
- Infrastructure asset managers
- Anyone wishing to map municipal features and data

COURSE OUTLINE – DAY 1

LESSON 1: CAD AND GIS

- Discussing the history of CAD and GIS
- Benefits of using CAD and/or GIS
- CAD terminology vs GIS terminology
- Exercise 1: Exploring the ArcGIS Pro interface

LESSON 2: DATA CAPTURING

- Understanding GIS data models
- Looking at the way data is typically captured in CAD
- Precision and accuracy in CAD and GIS
- Exercise 2: Capturing data in GIS

LESSON 3: PROJECTIONS AND COORDINATE SYSTEMS

- Introducing Coordinate systems
- Discussing Geographic and Projected coordinate systems
- Distortion and spatial properties
- Measurements of drawing linear units
- Georeferencing and Spatial adjustment
- Exercise 3A: Georeferencing CAD drawings
- Exercise 3B: Defining projections

LESSON 4: UNDERSTANDING DATABASES

- Discussing Database concepts
- Managing your GIS data
- Advantages of using geodatabases
- Organizing your data in a feature dataset
- Creating a geodatabase
- Using feature class properties
- Exercise 4: Importing and exporting data

COURSE OUTLINE – DAY 2

LESSON 5: IMPORTING DATA FROM CAD TO GIS

- CAD data formats and using CAD data in GIS
- Understanding CAD data structure in ArcGIS
- Working with CAD layers in ArcGIS
- Converting CAD files into GIS
- Ensuring data integrity and alignment
- Exercise 5A: Converting CAD data into GIS data
- Exercise 5B: Convert GIS data to CAD data

LESSON 6: EDITING

- Editing CAD data
- Editing in ArcGIS Pro and learning what you can edit
- Configuring ArcGIS Pro and your project for editing
- Layer symbology for editing
- Feature creation workflow
- Exercise 6A: Prepare Map for Editing
- Exercise 6B: Editing and modifying features

LESSON 7: MAPPING AND VISUALIZING DRAWINGS IN ARCGIS

- Symbolizing layers
- Labelling and annotation
- Exercise 7A: Perform visualization methods
- Exercise 7B: Working with labels
- Exercise 7C: Create annotation features

LESSON 8: PERFORMING SPATIAL ANALYSIS

- What is spatial analysis
- Select by attribute and location
- Exercise 8A: Select by attribute and location
- Exercise 8B: Simple spatial analysis

LESSON 9: SHARING DATA

- Overview of sharing in ArcGIS Pro
- What is a map layout?
- Exercise 9A: Share items using ArcGIS Pro
- Exercise 9B: Create a Map layout

THE PARTNERS

esri South Africa – THE SCIENCE OF WHERE

SAGI – South African Geomatics Institute

SAGC – South African Geomatics Council

GISSA – Geo-Information Society of South Africa

saice professional development & projects – A Non-Profit Company (NPC)

This course is presented in collaboration with Esri South Africa – proud suppliers of the world's most powerful mapping and analytics software

SAGI – South African Geomatics Institute | SAGC – South African Geomatics Council | GISSA – Geo-Information Society of South Africa

SAICE-PDP's Municipal Academy was established to support practitioners employed in local government with applying theoretical knowledge and relevant legislation in practice.

municipal academy – the road to service delivery

MISA – MUNICIPAL INFRASTRUCTURE SUPPORT AGENT – Today, Creating a Better Tomorrow

MISA's mandate is to provide technical support and advice to municipalities, whilst strengthening their capacity, for effective infrastructure planning, delivery, operations and maintenance.