

Training Catalog

GIS



Training



Solutions

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Welcome to Geo-Information Communication

Your GIS and Remote Sensing Training Solutions Provider...

GIS and RS are rapidly evolving towards becoming standard tools, influencing everyday decision-making particularly among professionals. Even though this has been described as "Geoinformatics" by some of the professionals, at Geo-information Communications (GIC), in addition, we offer instructor-led Courses as per Esri Training Curriculum Classroom Courses in GIS as well as Customized Applications Training Courses with integrated GIS and Remote Sensing as per needs of particular disciplines.

Our training approach also called Ecological Approach-ensures that you not only learn standard GIS as a technology but also enhance the application of GIS Knowledge in your organization staffs to enable Workflows that to meet your goals. Its based on principles of decentralization, bottom up, problem focus, participatory, evolutionary and long-term.

We offer a wide range of training solutions focused on building a smarter and more efficient workforce. We leverage high-quality; high-value applied GIS Technology Courses that are mapped to the specific learning in the users sector

Our GIS Training Specialists are committed to delivering an unrivaled learning experience

Regardless of your background, we can help to meet your personal, organizational goals to fill in those knowledge gaps and let you get on with the job at hand.. We've been working with these technologies for 10 years and can help you ensure success by improving your knowledge and skills

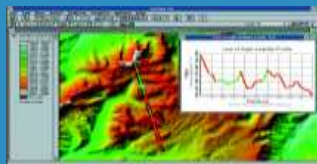
Benefits of adopting Geographic Information System (GIS) at your Organization

Efficiency



The diversity of our training package can inform your staffs on "How To" use that knowledge to reduce costs on the job.

Productivity



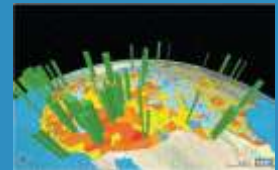
Productivity increases when tasks are completed more quickly, making it possible to complete more tasks in less time.

Knowledge



Knowledge is the synthesis of different concepts and skills learned over time. This enables your staff to recognize and avoid errors, thereby reducing liabilities.

Creativity



Employees who are well trained are far more creative. They can envision new possibilities for products, services and workflows.

Successful organizations know that investing in staff development is an effective strategy to reduce costs, streamline operations, and improve business results. Benefits of GIS training include:

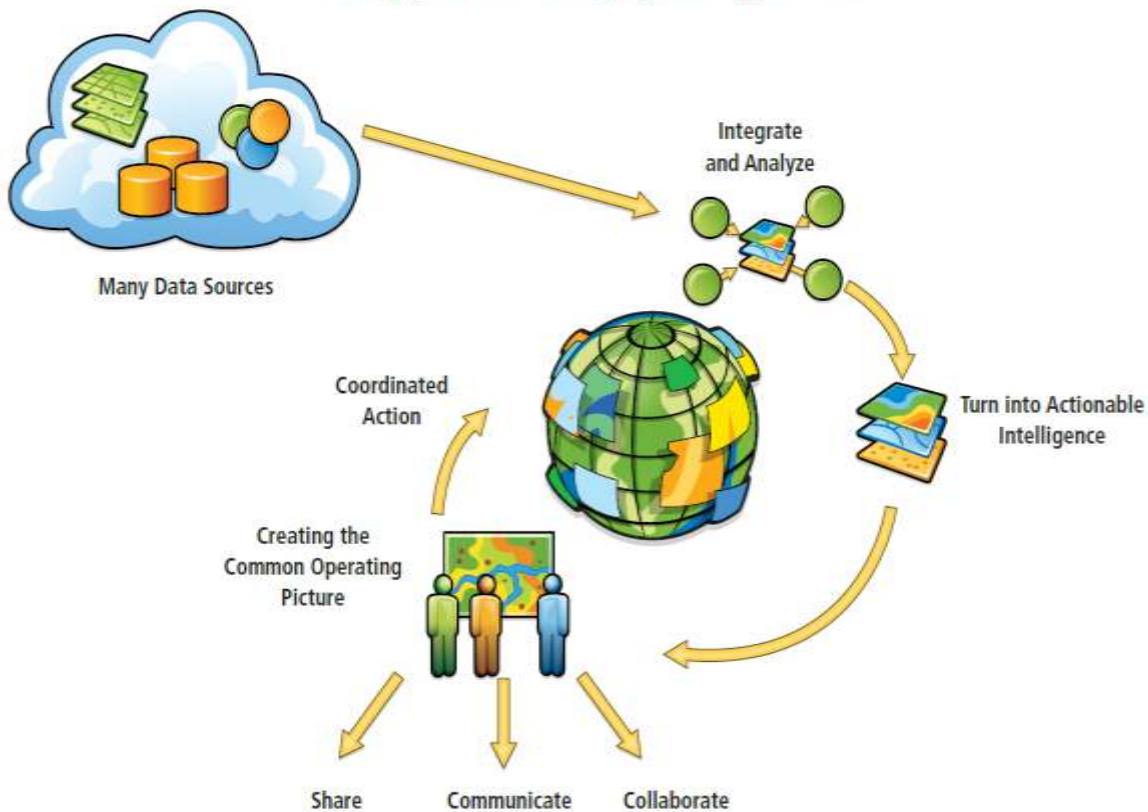
- Increased productivity and efficiencies in GIS operations, allowing staff to accomplish more with fewer resources.
- Prevention of costly mistakes in new GIS implementations and system updates.
- Knowledgeable staff better able to recognize opportunities for GIS to help an organization increase operating efficiencies, build its customer base, stay ahead of the competition, and increase revenue.

Table of Content

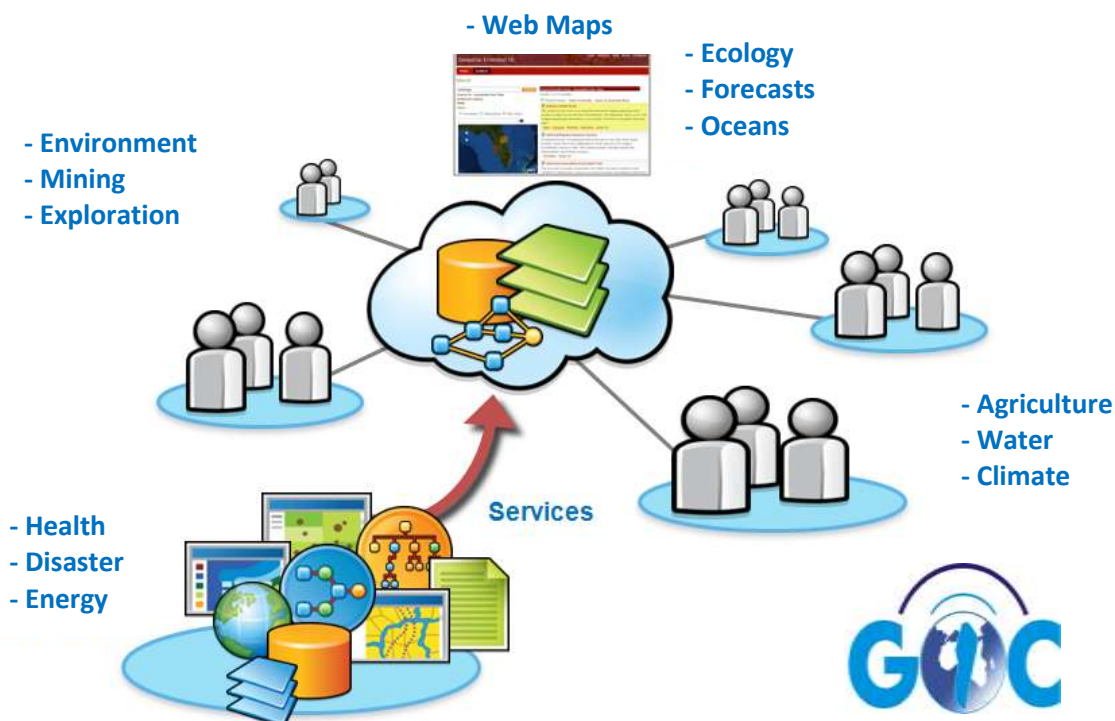
Overview: GIS and Remote Sensing Training Solutions	2
Why Train with GIC?	2
ArcGIS Desktop II: Tools and Functionality	2
ArcGIS Desktop I: Getting Started with GIS.....	2
ArcGIS Desktop III: GIS Workflows and Analysis	2
Creating and Publishing Maps with ArcGIS	2
Geoprocessing scripts using Python	2
Working with 3D GIS Using ArcGIS.....	2
Building Geodatabases.....	2
Introduction to the Multiuser Geodatabase.....	2
Managing, Editing Workflows in a Multiuser GDB	2
Data Management in a Multiuser Geodatabase.....	2
Introduction to ArcGIS Server.....	2
Field Data Collection Using ArcPad and GPS	2
Authoring and Serving Mobile Projects.....	2
Creating Effective Web Applications using	2
ArcGIS Server.....	2
Customized courses in Application of GIS and Remote Sensing in the Society	2
Fundamentals of Geographic Information System	2
Methodologies in Development of GIS & RS applications	2
Remote Sensing and Aerial Photography	2
Database Management Systems.....	2
GPS and its Applications	2
Spatial Analysis and Modelling.....	2
Available Customized Courses on Request	2
Registration Information.....	2

ESRI Instructor Led Courses for GIS (Basic, Intermediate and Advanced Level Courses)

GIS Applies the Geographic Approach



Customized Courses



Overview: GIS and Remote Sensing Training Solutions

Which Organization needs to adopt GIS?

Any organization, that requires technology to exploit environmental and human resources in order to solve societal problems for people needs GIS to deliver mapping solutions in understanding the past, present and future scenarios.

Our Instructor-Led Training

*Traditional Classroom Courses

- Taught by a certified ESRI instructor with expertise in the course subject matter
- Hands-on practice with the latest ESRI software
- Dedicated time away from the office to focus on learning
- Ability to ask questions and get immediate answers
- Class activities and discussions encouraging peer to-peer learning
- Available at GIC Training Centers, Plot 74 Ntinda.

** Customized Training

Geo-information Communication offers customized training to assist organizations in meeting their business and technology needs.

Our Professional Services group will work with your organization to identify customized training opportunities and curriculum design requirements. GIC instructors will customize the course lectures and exercises according to your data and business requirements.

In contrast to a traditional approach to technology transfer, at GIC, we have come to customize what we call the **Ecological Approach** -- one which is focused not on the technology per se, but rather, on the organization which adopts the technology, its role in society, and the manner in which the technology enhances organization's ability to function in a responsible, productive and sustainable fashion



Private Classes

For organizations that would like to train multiple staff, we offer several different private class options including on the weekends (Saturday and Sundays).

On-site Training & Coaching Classes

When you have many employees (Cost-effectiveness) who require training in the same course, we'll happily come to you and train directly on-site in one of your offices.

This mobile lab option is available for all client-site training classes. With this option, GIC provides classroom setup service and while the client provides hardware equipment for each student. Client coaching enhances the learning experience by providing extra time to review and practice course concepts with an instructor's on-site guidance.

GIC as an ESRI Authorized Training Center

If you would prefer to train at one of our facilities, we can hold a private class for your organization at GIC Training Center

Why Train with GIC?

Interactive Instructor-Led Format Improves User Success

With the introduction of ArcGIS 10, GIC made a substantial investment in upgrading course design and instructor skills. Our instructor-led course design creates an immersive, experiential approach to learning that will help students quickly and fully apply new skills and knowledge in their daily work. This redesign incorporates proven adult-learning principles and focuses on interaction and skills application. The course format includes:

- Interactive presentations with students contributing real-world experiences
- Demonstrations
- Hands-on individual exercises
- Facilitated group exercises
- Class discussions that encourage peer-to-peer learning
- Problem-solving scenarios

The result is a more effective and engaging experience that covers the spectrum of learning styles to ensure that students acquire relevant and directly applicable knowledge and skills.

This approach is applied not only in our traditional classrooms but also in our online classrooms. Online, students participate in small group activities through virtual breakout rooms. Students can interact with each other and the instructor during presentations, demonstrations and exercises via polls, chatting and virtual whiteboards. Instructors can even shadow students' computers to monitor student progress during individual exercises or to check in on groups and facilitate discussion.

High-Caliber Instructor Skills

All GIC instructors have achieved ESRI Technical Certification and CompTIA CTT+ certification. CompTIA CTT+ is an international certification that covers core instructor skills including: preparation, presentation, communication, facilitation and evaluation in both a traditional and online classroom environment. GIC instructors have the flexibility to adapt how they present course material based on the composition, skill level and professional interests of each class. This flexibility stretches their creativity and teaching skills in a way that's exciting and beneficial for students.

Training Recommendations

GIC will facilitate the development of a training plan for organizations in conjunction with the deployment and implementation of ESRI technology solutions. A comprehensive training plan contributes to the development of skills and knowledge needed to successfully meet the business requirements of your organization.



Getting Started in GIS with ESRI Software

Esri is an international company that offers an integrated collection of GIS software products for building a complete GIS. ArcGIS is the family of products that enables organizations to deploy GIS functionality wherever it is needed in desktops, servers, or custom applications; over the Web; or in the field. Esri offers a unified system of products ranging from Mobile, Desktop, Server and online GIS.

ArcGIS Desktop is used to discover patterns, relationships, and trends in your data that are not readily apparent in databases, spreadsheets, or statistical packages. ArcGIS Desktop gives you the power to manage and integrate data, perform advanced analysis, model and automate workflows, and display results. If you need to get started with ArcGIS Desktop software, the ArcGIS Desktop Fundamentals track consisting of the following courses is recommended.

ArcGIS Desktop I: Getting Started with GIS

Overview

This course teaches the fundamental concepts and basic functions of GIS, the properties of GIS maps and the structure of a GIS database. In course exercises, you will develop basic software skills by working with ArcGIS Desktop tools to visualize geographic data, create maps, query a GIS database and analyze data using common analysis tools.

Who Should Attend

- Individuals who do not have any prior GIS education or workplace experience.
- Managers and GIS support staff who use ArcGIS infrequently and need to understand how GIS fits into their organization.

Goals

After completing this course, you will be able to:

- Understand what GIS is, what it can do and how others are using it
- See how your organization can benefit from GIS
- Create a basic GIS map
- Work with different types of geographic data
- Access information about geographic datasets and features
- Apply a systematic approach to analyzing data in order to find patterns and relationships

Prerequisites & Recommendations

Knowledge of Windows-based software for basic file management and browsing is required.

Duration 3 days | Hands-on

ArcGIS Desktop II: Tools and Functionality

Overview

This course introduces the fundamental concepts of ArcGIS Desktop software and shows you how to use it to visualize, create, manage and analyze geographic data. In course exercises, you will use ArcGIS tools to perform common GIS tasks and workflows. By the end of the course, you will understand the range of ArcGIS Desktop functionality and be prepared to work with the software on your own to create GIS maps, work with geographic data and perform GIS analysis.

Who Should Attend

GIS professionals and others who have GIS knowledge but no ArcGIS software experience

Goals

After completing this course, you will be able to:

- Create a file geodatabase to store and manage geographic data.
- Create and edit geographic data to accurately represent real-world objects.
- Explore geographic data in ArcMap.
- Classify, symbolize and label map features to improve map visualization and interpretation.
- Create data by geocoding addresses.
- Query and analyze GIS data to support decision making.
- Create presentation-quality maps.

Prerequisites & Recommendations

This course assumes knowledge of GIS concepts. Completion of ArcGIS Desktop I: Getting Started with GIS or equivalent knowledge is required.

Duration 4 days | Hands-on

ArcGIS Desktop III: GIS Workflows and Analysis

Creating and Publishing Maps with ArcGIS

Overview

Advance your ArcGIS Desktop skills in this course that teaches you how and when to apply ArcGIS tools to create an efficient workflow that supports GIS analysis. Working with data stored in a geodatabase, you will organize and prepare data for analysis, create geoprocessing models and work through a challenging analysis project. By the end of the course, you will be able to determine which ArcGIS tools and functions to use in a given situation and apply them to your analyses. The skills taught in this course are applicable to all types of GIS analysis.

Who Should Attend

GIS analysts, GIS specialists and other experienced ArcGIS users who want to extend their basic ArcGIS skills in the areas of data creation and editing, geoprocessing models and GIS analysis.

Goals

After completing this course, you will be able to:

- Add data from different sources to a geodatabase
- Create and use geodatabase components that maintain data integrity and prevent errors during data creation and editing
- Solve common spatial data alignment problems
- Use a variety of geoprocessing tools to perform an analysis that supports decision making
- Build a complex model to automate an analysis workflow

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality or equivalent knowledge is required.

Duration 3 days | Hands-on

Overview

Focusing on fundamental cartographic design principles, this course teaches how to create attractive maps that are easy to interpret and properly designed for their audience and delivery medium. You will learn to produce high-quality, database-driven maps by applying a standard cartographic workflow. Some course exercises use tools provided in ArcGIS Spatial Analyst and Maplex for ArcGIS.

Who Should Attend

- Experienced ArcGIS users with little or no cartographic experience.
- Experienced cartographers with limited ArcGIS experience who want to create database-driven maps

Goals

After completing this course, you will be able to:

- Plan a cartographic project
- Evaluate data for cartographic purposes
- Create appropriate symbology, map elements and layout designs for different types of maps
- Create labels and annotation that are easy to read by the map's intended audience
- Apply a standard cartographic workflow to create maps efficiently using ArcGIS
- Produce maps for a variety of delivery media, including a Web mapping application

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality or equivalent knowledge is required.

Duration 3 days | Hands-on



Working with 3D GIS Using ArcGIS

Overview

At version 10, ArcGIS 3D Analyst supports a complete solution for 3D GIS. This course teaches fundamental concepts of 3D GIS as you learn how to visualize, edit, model and analyze GIS data within a 3D context.

Who Should Attend

GIS analysts, planning professionals, geospatial intelligence analysts and other experienced ArcGIS users who want to create, manage, analyze and share 3D data.

Goals

After completing this course, you will be able to:

- Visualize GIS data in 3D globes and local perspectives
- Create and import 3D data
- Edit and maintain 3D vector data in a 3D environment
- Perform 3D analyses including viewshed, visibility, volumetric and terrain analyses on vector and raster data
- Use best practices to optimize 3D views for use on the desktop
- Visualize temporal data in 3D by enabling time and creating 3D animations

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality or equivalent knowledge is required.

Duration 3 days | Hands-on

Geoprocessing scripts using Python

Overview

Automating complex or time-consuming processes using scripts can increase efficiencies in your GIS workflows and data management. The ArcGIS geoprocessing framework includes the scripting environment Python, which is the scripting language included with ArcGIS. This course introduces Python scripting syntax and shows how to use scripts to access and automate geoprocessing tasks. You will also work with ArcPy, an ESRI-developed site package for Python that integrates Python scripts into ArcGIS Desktop.

Who Should Attend

GIS specialists, analysts, data processors and other experienced ArcGIS Desktop users who want to automate GIS workflows.

Goals

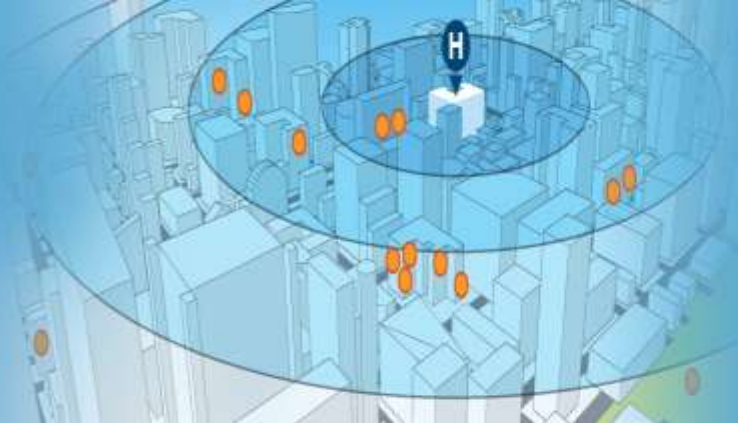
After completing this course, you will be able to:

- Write Python scripts using proper syntax
- Understand commonly used ArcPy classes and functions
- Access geoprocessing tools and specify environment settings
- Debug scripts and write code to handle errors
- Attach a script to a custom tool
- Use ArcPy classes and geometry objects to create and update features and perform geoprocessing operations
- Automate the production and exporting of a map series using the ArcPy mapping module

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality and ArcGIS Desktop III: GIS Workflows and Analysis or equivalent knowledge. Basic programming skills, such as using loops and conditional statements.

Duration 3 days | Hands-on



Building Geodatabases

Overview

This course teaches the essential concepts and skills you need to centrally store, manage and maintain the quality of your GIS data. You will learn how to create a geodatabase, migrate existing data to a geodatabase, and edit data stored in a geodatabase. In course exercises, you will create advanced geodatabase elements that maintain spatial relationships between features and automatically locate and fix errors according to rules and behaviors you set. This course is taught using an ArcInfo license of ArcGIS.

Who Should Attend

GIS data managers, analysts, specialists, data technicians, database administrators and other experienced ArcGIS users who need to store and manage data in a GDB.

Note: Those working with a multiuser ArcSDE geodatabase should also enroll in Introduction to the Multi user Geodatabase.

Goals

After completing this course, you will be able to:

- Create a file geodatabase
- Migrate shapefiles, CAD files, coverages and Excel spreadsheets to a file geodatabase
- Store and manage raster data in a file geodatabase
- Create and apply attribute domains, subtypes, topology and relationship classes to model data and ensure data integrity
- Create annotation to store and reuse text and graphics
- Create a geometric network to model and analyze a directed flow network such as a utility network
- Define a schema to efficiently model and store data

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality or equivalent knowledge is required.

Duration 4 days | Hands-on

Introduction to the Multiuser Geodatabase

Overview

Organizations using ArcGIS Server can deploy a multiuser ArcSDE geodatabase to provide data access and editing capabilities to many users while ensuring the integrity of their central GIS database. This course prepares you to load, access and edit data stored in a multiuser geodatabase. You will learn fundamental multiuser geodatabase concepts, editing options that support different multiuser workflows and techniques to optimize application performance. Course concepts apply to desktop, workgroup and enterprise ArcSDE geodatabases.

Who Should Attend

- GIS analysts, specialists, data technicians and others who need to view and edit data stored in a multiuser GDB.
- GIS managers who need to understand the capabilities of a multiuser geodatabase

Note: Those who need to learn how to create the structure of a geodatabase and add advanced features such as subtypes, domains and relationship classes should enroll in Building Geodatabases, which complements this course.

Goals

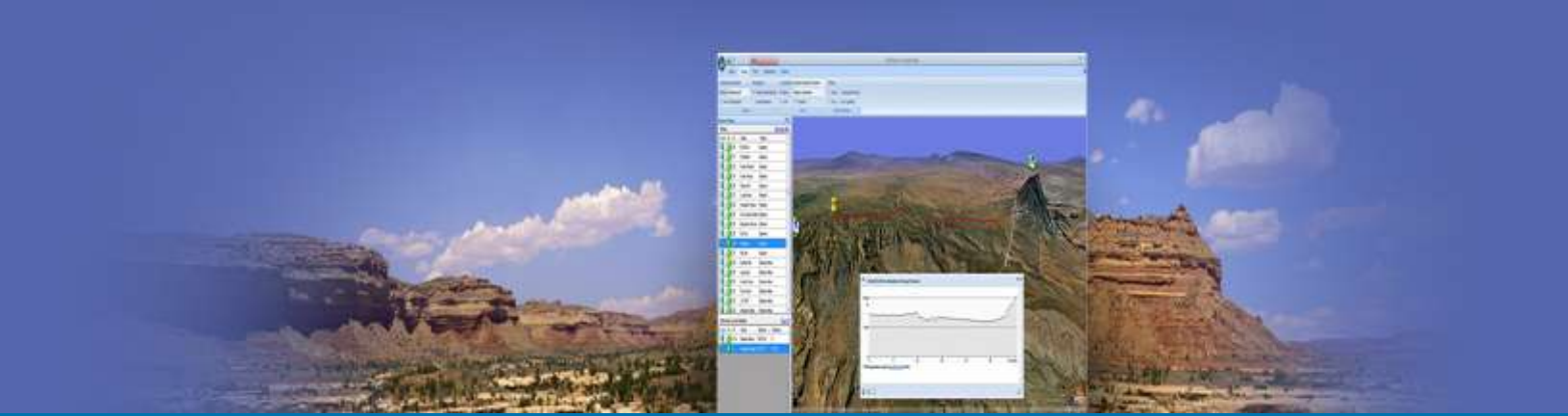
After completing this course, you will be able to:

- Connect to a multiuser geodatabase
- Understand how the multiuser editing options support specific workflows
- Edit data using versioned and non-versioned procedures
- View and resolve conflicts during versioned editing and synchronize edits across geodatabases
- Perform two-way geodatabase replication

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality and ArcGIS Desktop III: GIS Workflows and Analysis or equivalent knowledge is required.

Duration 2 days | Hands-on



Managing, Editing Workflows in a Multiuser GDB | Data Management in a Multiuser Geodatabase

Overview

When deploying a multiuser ArcSDE geodatabase, organizations need to design an editing workflow that ensures the integrity of their valuable GIS data and integrates well with existing business workflows. In this course, you will learn about the available multiuser editing environments and options and explore considerations for deciding which editing workflow will best meet the needs of your organization. This course is suitable for those working with desktop, workgroup and enterprise ArcSDE geodatabases.

Who Should Attend

GIS data managers and experienced ArcGIS users who need to manage their editing environment in a multiuser geodatabase

Goals

After completing this course, you will be able to:

- Design and implement various multiuser editing workflows
- Edit data in a non-versioned and versioned environment
- Manage multiple geodatabase versions
- Use geodatabase archiving to track changes to data over time
- Use geodatabase replication to support data collection, updates and sharing
- Create and use multi-versioned views
- Monitor versioned geodatabase performance
- Implement techniques to maintain performance

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality or equivalent knowledge is required. Familiarity with ArcSDE architecture and working on a Windows platform is also required.

Overview

Organizations using ArcGIS Server can deploy a multiuser ArcSDE geodatabase to centrally manage their GIS data, improve its security and integrity, and deliver editing capabilities to many users. This course teaches database administrators how to successfully load and manage data for a multiuser geodatabase implementation.

You will learn best practices for designing, interacting with, and maintaining the performance of a multiuser geodatabase and explore multiuser editing workflows and options, including versioning. While this course focuses primarily on the enterprise ArcSDE geodatabase, course concepts apply to both workgroup and enterprise geodatabases.

Who Should Attend

GIS and database administrators who need to implement a workgroup or enterprise ArcSDE geodatabase.

Note: Database administrators who need to install and configure ArcSDE should also enroll in ArcGIS Server Enterprise Configuration and Tuning for Oracle or ArcGIS Server Enterprise Configuration and Tuning for SQL Server.

Goals

After completing this course, you will be able to:

- Understand the architecture of a multiuser geodatabase
- Create connections to an ArcSDE geodatabase
- Set and manage user permissions
- Create an efficient data storage design to support a multiuser editing workflow
- Load and manage vector and raster data
- Apply client optimization techniques

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality or equivalent knowledge is required. Familiarity with basic RDBMS concepts is also required.

Duration 4 days | Hands-on

Duration 4 days | Hands-on



Introduction to ArcGIS Server

Overview

In this course, you will acquire the skills needed to share GIS content on the Web or across the enterprise. You will learn a workflow to publish maps, imagery, geoprocessing models and feature templates for use in Web applications that support visualization, analysis and editing of GIS resources.

Who Should Attend

- GIS analysts, specialists and other experienced ArcGIS Desktop users who want to share their GIS content in a Web mapping application
- Developers who need to understand ArcGIS Server functionality in order to incorporate GIS services into custom applications

Goals

After completing this course, you will be able to:

- Author and publish dynamic and cached map services
- Design and generate a map cache to maximize map service performance
- Configure a geoprocessing model and publish it as a geoprocessing service
- Publish an image service from a mosaic dataset to visualize change over time
- Publish a feature service to enable editing in a Web application
- Extend a Web mapping application using sample code and the ArcGIS API for JavaScript

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality or equivalent knowledge is required.

Duration 3 days | Hands-on

Field Data Collection Using ArcPad and GPS

Overview

This course teaches the complete mobile GIS workflow and participants learn the basic skills that will prepare them for using ArcPad in their daily work. You will use ArcMap for the preparation of data and maps for field work, capture and edit data in the field using ArcPad, and transfer field edits to an existing GIS database using ArcMap.

Who Should Attend

- This course is designed for those who are interested in deploying mobile GIS solutions in their organization.
- All professionals who collect and update spatial data in the field will find the course of particular interest.

Goals

Participants completing this course will be able to effectively collect, update, analyze, and process GIS data using Esri's ArcGIS and ArcPad software with Trimble GPS receivers, and other supported devices.

Prerequisites and Recommendations

Experience with Windows mobile devices, GIS and GPS use will have an added advantage. Knowledge of coordinate systems, datums, projections and ArcMap is highly recommended.

Duration 3 days | Hands-on



Creating Effective Web Applications using ArcGIS Server

Authoring and Serving Mobile Projects

Overview

This course teaches basic design principles for creating Web mapping applications that are attractive, fast and easy to use by their intended audience. In course exercises, you will work with the lightweight ArcGIS Web Mapping APIs to create a focused application that utilizes internal and external ArcGIS Server Web services. Students may choose to complete some course exercises using the ArcGIS API for Flex, the ArcGIS API for JavaScript or the ArcGIS API for Microsoft Silverlight/WPF.

Who Should Attend

GIS analysts and others who want to create Web mapping applications to extend the use of GIS data to non-GIS departments within an organization or to the general public via the Internet. No Web development experience is required.

Goals

After completing this course, you will be able to:

- Choose an application development environment that meets your needs
- Author high-performing basemap and operational layers for a map service
- Design an application for efficient querying and editing
- Build an application that includes geoprocessing functionality
- Configure ESRI templates and out-of-the-box viewers to quickly build a Web application

Prerequisites & Recommendations

Completion of ArcGIS Desktop II: Tools and Functionality and Introduction to ArcGIS Server or equivalent knowledge is required.

Duration 3 days | Hands-on

Overview

This course teaches a recommended workflow to successfully create a ready-to-deploy ArcGIS Mobile project for the Windows Mobile platform. Beginning at the planning phase and working through the project deployment process, you will learn how to optimize existing data, maps and workflows to support GIS data inspection and collection in the field. This course does not cover the ArcGIS Mobile Software Development Kit (SDK).

Note: This course covers ArcGIS Mobile projects that will be deployed on the Windows Mobile and Windows operating systems.

Who Should Attend

- GIS analysts and others who want to create mobile GIS projects using ready-to-deploy ArcGIS Mobile functionality
- Developers who want to understand ready-to-deploy ArcGIS Mobile functionality

Goals

After completing this course, you will be able to:

- Plan a mobile project for use within an enterprise system
- Choose appropriate data management and transaction models to support real-time data collection
- Create mobile map services that are optimized for use in the field
- Assess security needs and options for a mobile project
- Quickly configure and deploy a mobile project
- Synchronize data collected in the field with a geodatabase optimized for your mobile project
- Update and maintain a mobile project over time

Prerequisites & Recommendations

Students are expected to be familiar with GIS, programming and Web application concepts.

Duration 3 days | Hands-on

Customized courses in Application of GIS and Remote Sensing in the Society

Overview on Application Courses

For the applied GIS Programmes, the trainees are to put into practice the GIS and Remote Sensing in their respective operation cycle of activities at organization level. As a multi-disciplinary programme, it includes courses in Geographical Information System, Remote sensing, Best Practice methods in RS and GIS, Digital photogrammetry, GPS and its applications, digital image processing.

The Customized Courses ensures application of GIS in Data Acquisition, Data Management, Decision Support Systems (DSS), Field Planning, Cartography and Map making for disciplines such as Environmental Impact Assessment, Natural resources Management, Agriculture, Water distribution and supply, Forestry, Wild life, Landuse Planning, Disaster Management, Transportation and supply net work, Transmission and Telecommunication network, Epidemiology and Health Sciences, GIS for business planning and managements is also included.

Aims and Objectives

This applied GIS programmes aims at developing human resources in the fields of GIS and Remote Sensing. The objectives of the programme are;

- To train personnel in the fields of remote Sensing and Geographic Information Systems and the related aspects at professional level.
- To Provide an opportunity to improve existing skills in GIS and RS for better Decision Making
- To provide a necessary background knowledge for research in Remote Sensing and GIS applications in various professional disciplines.
- To provide necessary skills for use of GIS and Remote Sensing in Planning and management of projects.

Course Outline for Customized GIS Courses

- I. **Pre-amble; Overview of day-to-day challenges in the professional disciplines**
- II. **Concepts of Geospatial Information Systems**
 - Introduction to GIS
 - Introduction to building geodatabases
 - Spatial Analysis and Modelling
- III. **Concepts of Remote Sensing and Aerial Photography**
 - Introduction to Remote sensing
 - Image feature extraction(Object -based Classification)
 - Data Fusion, Color Transforms and mosaicking.
 - Digital Image Processing using Supervised and Unsupervised Image Multi-spectral Classification Methods
 - Principal Components Analysis
 - Hyper spectral and Vegetation Analysis
 - Change Analysis for Change Detection Mapping
- IV. **Global Positioning Systems (GPS) and its Applications**
- V. **Project Planning, Management and Implementation in the Multi-Criteria/Multi-Objective Decision Making Process in a Specific Sector/Discipline**
- VI. **Data Collection using GPS/ArcGIS Mobile**
- VII. **Practical demonstration of Methodologies useful in trainees organization sector as per ESRI Best Practices**
- VIII. **Deploying GIS information over Google maps and internet mapping using KML as My Places.**
- IX. **Video Presentation of Case Studies**



Fundamentals of Geographic Information System

Course Outline

Introduction to GIS, Definition, Overview, History and Concepts of GIS, Scope and Application areas, Purpose and Benefits of GIS, Functional elements of GIS, Required hardware and software for GIS, Required functions of GIS software, Mapping Concept – Map Elements, Map scales and representations, Map Projection, Geometric rectification, Data Structure – raster and Vector Data Structures, Input of geospatial data, Sources of data and input devices, Spatial database – concept of spatial database, Data Acquisition and Management Techniques, Data Manipulation and Analysis, Map Output Generation.

Laboratory Sessions

Spatial database development, Data input, Linking non-spatial and spatial database, database editing and updating, GPS data integration in GIS, Data manipulation and pre-processing, Spatial analysis, Map generation, Charting and tabular representation. Mini-project for GIS application.

Remote Sensing and Aerial Photography

Course Outline

Overview and concepts of Remote Sensing technology, practical uses of aerial photographs/satellite photographs in various disciplines, fundamental characteristics of electromagnetic radiation, interaction of radiation with matter refraction, absorption, diffusion, emission, concepts of spectral resolution and detection, Remote Sensing platforms, Satellite System and sensors, active and passive sensing systems, visual-digital interpretation, Scanning of topographical maps and Image feature extraction, Manipulate images using Data Fusion, Color Transforms and mosaicking. Introduction to RS image processing (Image enhancement, Geometric correction), RS Image Multi-spectral Classifications methods using Supervised and Non supervised methods

Laboratory Sessions

Visual interpretation of aerial photographs for land use, land pattern analysis, geological and structural analysis as well as manipulation and analysis of remote sensing images,

Database Management Systems

Course Outline

Introduction to databases, database management systems, hierarchical model, relational database, and object oriented database, Concept of spatial database, design of spatial database.

GPS and its Applications

Course Outline

The Spherical Earth, Rotations of the Axis of the Earth, True North, Positioning, Introduction to GPS, Map Projections and Coordinate Transformations, GPS Basic Concepts, GPS Accuracy and Precision, GPS data Management, Navigation with GPS, GPS/GIS Applications.

Laboratory Sessions

Hands on sessions with GPS equipments, Real-life case studies, location of a ground point with different coordinate systems, navigation, GPS survey, GPS data downloading, conversion of GPS data to GIS.

Spatial Analysis and Modelling

Course Outline

Use of GIS in attribute and spatial queries, single and multilayer operations, model building, point pattern analysis, reclassification and coverage building, surface analysis, raster grid analysis, various types of overlay operations and spatial operations in GIS, Buffer analysis, Basic geostatistical components for spatial analysis, proximity analysis, establishment of objectives and criteria for analysis, data preparation for spatial operations, evaluation and interpretation of results.

Methodologies in Development of GIS & RS applications

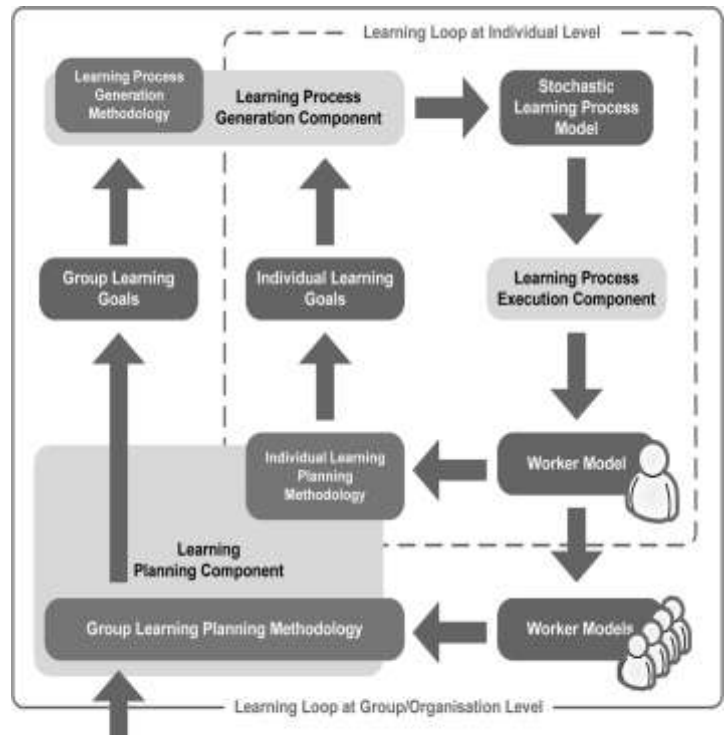
Instructors to liaise with the relevant bodies, institutions and potential trainees in order to compile GIS data useful for a mini project demonstration on the application of GIS & RS in any selected discipline.

Available Customized Courses on Request

1. Applied GIS & RS in Visual Environmental Impact Assessment processes,
2. Applied GIS & RS in Natural Resources Management,
3. Applied GIS & RS in Agriculture & Food Security,
4. Earth Observations and GIS Applications in Integrated Water Resource Management,
5. Applied GIS & RS in Water Utility Management
6. Application of GIS & RS in Climate Change Vulnerability Analysis and Adaptation Preparedness
7. Applied GIS & RS in Land Use/land cover Assessments& Urban Planning,
8. Application of GIS & RS in Project Planning, Monitoring & Evaluation
9. Applied GIS & RS in Disaster Risk Management & Multi-hazard Assessments
10. Applied GIS & RS in Transportation, Transmission and Telecommunication network Management,
11. Applied GIS & RS in Epidemiology Assessments and Health Sciences,
12. Earth Observations & GIS in Oil Explorations & Mining

N/B: GIS stands for Geospatial Information Systems, While RS stands for Remote Sensing

Ecological Approach of Transferring GIS technology:



Institution interests are taken into consideration during the design of customized courses

Course Duration 5 days | Costing per participant to be quoted upon request

Registration Information

Registration & Payment

A completed class registration form signed by an authorized signatory is required for each student. Class reservations are processed on a first-come, first-served basis once we have received a 50% down-payment, or alternative payment conditions have been agreed on. Full payment needs to be made once training has been completed.

The most convenient way to register is to a mail to training@gic.co.ug or check our website at www.gic.co.ug. The online registration system contains the most up-to-date class schedule and seating information. Online registrations will be acknowledged via email along with additional course information. You will receive an acknowledgment letter confirming your payment and seating status.

Cancellation Policy

- Cancellations received 14 calendar days or more before the course start date will be refunded in full, can be transferred or can be used as a credit*
- Cancellations received 6-13 calendar days before the course start date will be subject to the course fee; however, the registration is transferable or can be used as a credit*
- Cancellations received 5 calendar days before the course start date will be subject to the full course fee and are not transferable

Course Fees and Taxes

Training is charged on an individual or group rate and payable in UGX. or US\$. The current individual rate is as indicated per course in US\$ and applies to training conducted at our Esri Authorized Learning Centre at our offices locate at Plot 74 Ntinda, Kampala.

Course Materials

For traditional classroom training, all course materials are provided on site. Materials for online classroom training will be available for download.

See table below for offers on Volume Discount:

No. of student days	Discount offered
0 – 25	0%
26 – 50	5%
51 – 75	10%
76 – 100	15%
101 – 125	20%
> 125	25%

Any group that wants to be trained at a client's site is charged US\$ 1,200 per day. The recommended maximum size of a group is 12 – 16 persons. VAT (currently at 18%) will be added to any training conducted within Uganda.

Travel

Travel is the registrant's responsibility. GIC assumes no responsibility for non-refundable travel arrangement losses resulting from course scheduling changes or cancellations.

Accommodation and Meals

Participants travelling from far are responsible for making their own lodging arrangements. However, our fees covers for daily 3 course meals to be provided at our center.

Class Schedule

Popular courses are scheduled in advance, while other courses are scheduled on request. For a current class schedule contact training@gic.co.ug or visit our Website. Scheduled classes may be cancelled if the number of registrations does not meet our requirement for minimum number of students. In this case the affected students will be contacted in advance and transferred to a future class by mutual agreement.

Geo-Information Communication Ltd

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P.O. Box 29414, Kampala, Uganda

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Mobile: +256-772-445-011

Website: www.gic.co.ug

Training Coordinator

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