esri Eastern Africa | WORKING GIS SOLUTIONS

Course Catalog 2011

Hands-on training for GIS professionals

Esri Eastern Africa

course catalog 2011

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Esri Eastern Africa Training Solutions

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.

Esri Eastern Africa offers instructor-led and self-paced training solutions that teach fundamental GIS technology skills and best practices to accomplish GIS workflows. Esri Eastern Africa closely monitors new training technologies to offer creative and cost-effective solutions to our users.

The table below shows the training solutions we offer, their format, description and benefits:

	Training Format	Description	Benefits
Instructor-Led	Traditional Classroom Course	Presentations, demonstrations, group activities and hands-on exercises are presented in a classroom at an Esri learning center or a client site	• Instructor available for questions and guidance throughout the class. • Interaction with other students • Focused time to learn in a classroom setting
Self-Paced	Web Course	Concepts and hands-on exercises are completed by students over the Internet at the students' own pace. Some courses require a broadband connection. Access to the software needed for course exercises is required	• Available 24/7 • Rich, in-depth training • Independent study
	Training Seminar	A free, hour long recorded presentation is delivered by an Esri subject matter expert over the Internet. A broadband connection is required	• No cost • Available 24/7 • Focused technical training
	Instructional Series Podcast	A free, short audio recording on a specific topic is delivered by an Esri subject matter expert. Podcasts can be listened to online or downloaded	• No cost • Available 24/7 • Short, focused training

Visit www.esriea.co.ke/index.php/trainingoverview to learn more about Esri training solutions, find available self-paced web courses, training seminars and podcasts.

Getting Started with Esri Software

Esri 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 1: Getting Started with GIS** – for those with no prior GIS education or workplace experience with GIS who want to learn fundamental GIS concepts and basic ArcGIS skills.

- **ArcGIS Desktop 2: Tools and Functionality** – for those who have an education in GIS or workplace experience with GIS but no ArcGIS software experience and who want to learn the range of ArcGIS functionality and basic ArcGIS skills.

- **ArcGIS Desktop 3: Workflows and Analysis** – for those who want to extend their basic ArcGIS skills in the areas of data creation and editing, geoprocessing models, and GIS analysis.

Building on the fundamentals one could proceed with the following courses:

- **Field Data Collection Using ArcPad and ArcGIS Desktop** – for those who want to collect and update data in the field using ArcPad and GPS and have to integrate these data with ArcGIS Desktop in the office in a seamless manner.

- **Building Geodatabases** – for those who want to take advantage of Esri's geodatabase model which provides rich content & rules and behavior for easier data management and improved data validation.

- **Creating and Publishing Maps with ArcGIS** – for GIS professionals who want to create maps that are easy to interpret and properly designed for their audience and delivery medium.

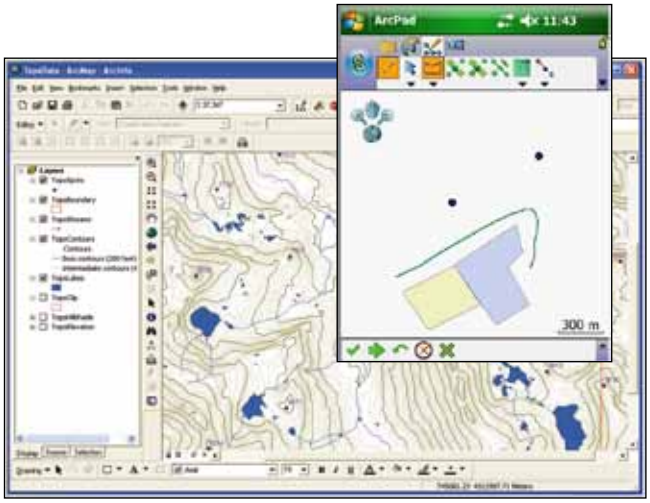
- **Performing Analysis with ArcGIS Desktop** – for GIS analysts who want to learn strategies for planning an analysis project and for solving spatial problems.

ArcGIS Server software allows GIS professionals to author maps, globes, and geoprocessing tasks on their desktops and publish them via a server using integrated tools. GIS functions can then be delivered as services throughout the enterprise. If you need to get started with ArcGIS Server, the following course is recommended:

- **Introduction to ArcGIS Server** – for GIS professionals who are experienced with ArcGIS Desktop software and want to share their work as maps, globes, or geoprocessing tasks.

ArcGIS Server and Desktop have capabilities for managing multiuser geodatabases in a number of DBMSs. When you need a large multiuser geodatabase that can be edited and used simultaneously by many users, the geodatabase provides a good solution. If you need to get started with multiuser geodatabase, the following course is recommended:

- **Introduction to the Multiuser Geodatabase** – for administrators and managers who are familiar with the geodatabase data model and are migrating to a multi-user geodatabase environment.



Esri Certification

Introduction

Esri has set the industry standard for GIS technology and is now establishing benchmark standards for individuals who use Esri software with the recently launched Esri Technical Certification Program. The Esri Technical Certification Program recognizes qualified individuals who are proficient in best practices for using Esri software and are awarded in different areas of expertise at both an Associate and Professional level. The program is open to Esri users worldwide and consists of 13 certifications recognizing expertise in desktop, developer, or enterprise use of ArcGIS. Users achieve certification by successfully completing computer-based examinations at their preferred PeasonVue test centre. Beginning in January 2011, users will be able to test for five certifications. The remaining eight are still in development and will be available later in the year.

Establishing an industry recognized benchmark of expertise in using Esri software will:

- Improve success with GIS by creating a community of professionals proficient in using Esri software.
- Help organizations maximize their investment in Esri products by employing a workforce certified in using best practices.
- Create professional development opportunities by sharpening your skills and proficiency in the use of Esri software.
- Provide an opportunity for individuals, partners, consultants, and other organizations to distinguish themselves among their peers.
- Assist hiring organizations in assessing candidate skills and abilities.

Desktop	ArcGIS Desktop	Associate | Professional
Developer	ArcGIS Desktop Developer	Associate* | Professional*
	Web Application Developer	Associate | Professional*
	Mobile Developer	Associate* | Professional*
Enterprise	Enterprise Geodatabase Management	Associate | Professional*
	Enterprise System Design	Associate* | Professional*
	Enterprise Administration	Associate

* Certification is in development.

How was the Certification Established?

Developing criteria for examinations and scoring has been a research-intensive, multiyear process involving Esri staff and outside consultancies that have helped create similar programs for other IT and software providers. A roundtable of GIS professionals and Esri subject matter experts recommended skills to be measured for each certification. These were then vetted through extensive online surveys completed by Esri partners, international distributors, employees, and selected users. Survey responses drove development of the examinations, which were beta tested with recruits from the same audience. Beta testing of exams verified that the appropriate questions were being asked, determined the optimal number of questions for each exam, and established final scoring models. This process will continue for the eight certifications still in development.

Preparation for the Examinations

Esri training and GIS education, combined with workplace experience, are the best preparation. The Esri Technical Certification Web site lists specific skills that will be assessed in each exam, as well as training courses that aid in acquiring and improving these skills. We are available to advise you on the best training for a particular certification and also offer you the training that you need to prepare for your certification. For more information, visit esri.com/certification or email training@esriea.co.ke To register, visit pearsonvue.com/esri

ArcGIS Desktop Fundamentals

ArcGIS Desktop 1: Getting Started with GIS
Three days • $300

Overview
This course teaches the fundamental concepts and basic functions of a GIS, the properties of GIS maps, and the structure of a GIS database. You will work with ArcGIS to visualize geographic data, create maps, query a GIS database, analyze data, and solve geographic problems using a systematic approach.

Audience
This course is designed for those who are new to GIS and ArcGIS.

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

Goals
After completing this course, you will be able to:
- Explain what a GIS is and what it can do.
- Work with and create GIS maps in ArcMap.
- Access and query a GIS database.
- Describe two common GIS data structures.
- Explain what geographic data is, how it is made and where to get it.
- Explain what spatial analysis is.
- Solve geographic problems using ArcGIS analysis tools.

ArcGIS Desktop 2: Tools and Functionality
Four days • $400

Overview
This course teaches the essential ArcGIS Desktop tools used to visualize, create, manage, and analyze geographic data. You will practice common GIS tasks and get prepared to work with the software on your own. This course prepares you for ArcGIS Desktop 3: GIS Workflows and Analysis and other ArcGIS courses.

Audience
This course is designed for those with an education in or workplace experience with GIS but no ArcGIS software experience. This course assumes knowledge of basic GIS concepts.

Prerequisites and Recommendations
Participants should know how to use windowing software. This course provides the fundamental ArcGIS knowledge and experience needed to enroll in ArcGIS Desktop 3: Analysis and Workflows.

Goals
After completing this course, you will be able to:
- Display data on maps in different ways.
- Combine and analyze data to discover patterns and relationships.
- Create and manage geographic data.
- Access and query feature information.
- Build a model to automate a GIS analysis workflow.
- Create presentation-quality maps and graphs.

ArcGIS Desktop 3: Workflows and Analysis
Three days • $300

Overview
Understanding how and when to apply ArcGIS tools and functions is the key to creating an efficient GIS workflow. Building on the skills and knowledge taught in ArcGIS Desktop 2: Tools and Functionality, this course shows how to apply ArcGIS tools in a workflow context with a focus on working with data stored in a Geodatabase and performing geoprocessing and analysis. In the course exercises, you organize and edit data stored in a geodatabase, prepare data for analysis, create and edit geoprocessing models using ModelBuilder, and work through a challenging analysis project.

Audience
This course is designed for experienced ArcGIS users who want to learn more about the ArcGIS tools for creating and editing data and GIS analysis.

Prerequisites and Recommendations
Students should have completed *ArcGIS Desktop 2: Tools and Functionality.*

Goals
After completing this course, you will be able to:
- Add data from different sources to a geodatabase.
- Work with subtypes to edit data.
- Edit and validate feature geometry and attributes using geodatabase topology.
- Run analysis tools using dialog boxes and models.
- Build a complex model using ModelBuilder.

"The instructors are well learned and know how to pass on the information."
(Winniefred A. Baraza - USAID, Kenya)

Data and Map Production

Field Data Collection Using ArcPad and ArcGIS Desktop

Three days • $300

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.

Audience

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.

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.

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.

Building Geodatabases

Four days • $400

Overview

This course teaches the range of functionality that the geodatabase offers and how to create one on your own. You will create a file Geodatabase and add data to it, then create geodatabase components that ensure data integrity. This course is taught using an ArcInfo license of ArcGIS.

Audience

This course is for experienced ArcGIS users and data managers who want to take advantage of geodatabase functionality to model features.

Prerequisites and Recommendations

Students should have completed *ArcGIS Desktop 2: Tools and Functionality* or *Learning ArcGIS Desktop* or have equivalent knowledge.

Goals

After completing this course, you will be able to:

- Create a file geodatabase, load vector and raster data.
- Create and apply attribute domains, subtypes, and relationship classes.
- Create a geodatabase topology and apply topology rules during feature editing.
- Create and edit geodatabase annotation.
- Edit a geometric network and perform network tracing.
- Build a geodatabase schema.

Working with Geometric Networks for Utilities

Two days • $250

Overview

This course teaches geometric network concepts with a focus on utility examples. You will learn the components of a geometric network and the workflow for creating one. In course exercises, you will work with realistic utilities data and gain experience working with the ArcGIS Schematics extension, which is used to visualize networks as schematic representations. Attendees of this course will receive a complimentary copy of the Esri Press book "Empowering Electric and Gas Utilities with GIS."

Audience

This course is for experienced ArcGIS users who want to model and manage utilities data using geometric networks. Spatial data managers and GIS technicians who work in the electric, gas, and water/wastewater industries will find the course of benefit.

Prerequisites

Completion of *ArcGIS Desktop 2: Tools and Functionality* and *ArcGIS Desktop 3: GIS Workflows and Analysis* are required. Completion of *Building Geodatabases* is recommended.

Goals

After completing this course, you will be able to:

- Build a geometric network in ArcCatalog.
- Create network rules and assign network weights.
- Validate network connectivity.
- Perform analysis on geometric networks.
- Edit network features.
- Display a geometric network as a schematic.

Creating and Publishing Maps with ArcGIS

Three days • $400

Overview

This course teaches how to apply sound cartographic principles and a standard cartographic process to create maps that communicate effectively. You will learn to create maps that are easy to interpret and properly designed for their audience and delivery medium.

Audience

This course is designed for experienced ArcGIS users with no cartographic experience and experienced cartographers with limited ArcGIS experience who want to create database-driven maps.

Prerequisites

Completion of *ArcGIS Desktop 2: Tools and Functionality* is required

Goals

After completing this course, you will be able to:

- Plan a cartographic project.
- Evaluate data for cartographic purposes.
- Apply fundamental cartographic design principles.
- Create effective map labels and annotation.
- Produce maps for different mediums, including a Web mapping application.

Geoprocessing and Analysis

Introduction to Geoprocessing Scripts Using Python
Three days • $300

Overview
By automating complex or time-consuming processes using scripts, you can streamline GIS workflows and data management. Python® is the scripting language included with ArcGIS. This course introduces Python syntax and shows how to use scripts to automate geoprocessing tasks. You will also work with ArcPy™, an Esri-developed site package that integrates Python scripts into ArcGIS Desktop.

Audience
GIS specialists, analysts, and other experienced ArcGIS Desktop users who want to automate GIS workflows

Prerequisites and Recommendations
Completion of *ArcGIS Desktop 2: Tools and Functionality* and *ArcGIS Desktop 3: GIS Workflows and Analysis* is required. Basic programming skills, such as using loops and conditional statements, are also required.

Goals
After completing this course, you will be able to:
- Write Python scripts using proper syntax.
- Use cursors, describe objects, and list objects to manage data.
- Understand commonly used ArcPy classes and functions.
- Access geoprocessing tools and environment settings in scripts.
- Debug scripts and write code to handle errors.
- Attach a script to a custom tool.
- Automate map series production using the ArcPy mapping module.

Performing Analysis with ArcGIS Desktop
Four days • $400

Overview
In this course, you will acquire or improve skills to generate reliable results from different types of GIS analyses. The course teaches a proven process you can use to solve a variety of spatial problems including site selection, line-of-sight (visibility) analysis, and hot spot analysis. You will also learn regression analysis techniques for determining why a spatial pattern exists. Some course exercises use tools provided in the ArcGIS Spatial Analyst extension.

Audience
GIS analysts, specialists, and other experienced ArcGIS Desktop users who manage or conduct GIS analysis projects

Prerequisites and Recommendations
Students should have completed *ArcGIS Desktop 2: Tools and Functionality* and *ArcGIS Desktop 3: GIS Workflows and Analysis.*

Goals
After completing this course, you will be able to:
- Apply best practices to choose appropriate data, analysis methods, and GIS tools for a given project.
- Prepare vector and raster data for analysis.
- Build and modify a geoprocessing model to automate analysis tasks, examine what-if scenarios, and compare results.
- Create a weighted suitability model to select the best location for a new site.
- Apply spatial statistics to analyze, interpret, and quantify geographic data.
- Build a regression model to help determine why a spatial pattern exists.
- Evaluate analysis results and present them to decision makers.

Working with 3D GIS Using ArcGIS
Three days • $300

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.

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

Prerequisites and Recommendations
Completion of *ArcGIS Desktop 2: Tools and Functionality* is required.

Goals
After completing this course, you will be able to:
- Visualize GIS data in 3D globe 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.

"Met my expectation in relation to field challenges and even more above my expectation."
(Simon Warui - Ministry of Fisheries Development)

Introduction to ArcGIS Server

Three days • $300

Overview

This course introduces ArcGIS Server and teaches a workflow for creating and sharing GIS content. You will learn to publish maps, globes, and geoprocessing models that are optimized for performance and to quickly create out-of-the-box Web applications using ArcGIS Server Manager. Installation and some configuration techniques for ArcGIS Server are covered, but administration is not the focus of this course.

Audience

This course is designed for experienced ArcGIS Desktop users who are new to ArcGIS Server and want to share their GIS content in a Web mapping application.

Prerequisites and Recommendations

Students should have completed *ArcGIS Desktop 2: Tools and Functionality* or *Learning ArcGIS Desktop* or have equivalent knowledge

Goals

After completing this course, you will be able to:

- Describe the types of ArcGIS Server services available and the options related to each.
- Author and publish map services and geoprocessing tasks that are optimized for performance.
- Publish a geodata service for data replication and extraction.
- Access services using a variety of clients (ArcMap, ArcGIS Explorer, and Web applications).
- Build Web mapping applications that use GIS services.

Creating Effective Web Applications using ArcGIS Server

Three days • $300

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.

Audience

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

Prerequisites and Recommendations

Completion of *ArcGIS Desktop 2: Tools and Functionality* and *Introduction to ArcGIS Server* are required.

Goals

Those completing this course 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.

Authoring and Serving ArcGIS Mobile Projects

Three days • $300

Overview

This course teaches a recommended workflow for successfully creating and deploying an out-of-the-box ArcGIS Mobile project. By starting at the planning phase and working all the way through the project deployment process, you will learn to adapt existing data, maps, and GIS workflows to the mobile environment. This course does not cover the ArcGIS Mobile Software Development Kit (SDK).

Audience

This course is designed for GIS analysts and others who want to deploy mobile GIS projects using out-of-the-box ArcGIS Mobile functionality. Developers who want to understand core ArcGIS Mobile functionality will also benefit from the course.

Prerequisites and Recommendations

Completion of *ArcGIS Desktop 2: Tools and Functionality* or *Learning ArcGIS Desktop*, *Introduction to ArcGIS Server,* and *Introduction to the Multiuser Geodatabase* are required. Completion of *ArcGIS Desktop 3: GIS Workflows and Analysis* and knowledge of Internet security concepts are recommended

Goals

After completing this course, you will be able to:

- Plan a mobile project for use within an enterprise system.
- Choose an appropriate data transaction model for a mobile project.
- Create optimized map services for use in the field.
- Assess security needs and options for a mobile project.
- Configure and deploy a mobile project using ArcGIS Server Manager.
- Synchronize data collected in the field with a parent geodatabase.
- Apply techniques for maintaining a mobile project over time.

"ArcGIS Server is the thing!! The fact that you are able to use it and can get feedback."
(Mary Ndinda Mutinda - Institute of Education in Democracy)

Introduction to the Multi–user Geodatabase

Two days • $200

Overview

This course shows how to access and edit GIS data in a multiuser environment and teaches fundamental editing workflow procedures and client-side performance considerations. This course does not focus on a specific relational database management system (RDBMS) and is suitable for those working with desktop, workgroup, and enterprise ArcSDE geodatabases.

Audience

This course is designed for GIS analysts, specialists, data technicians, and others who are migrating to an ArcSDE geodatabase environment. GIS managers will find the course a useful introduction to the capabilities of a multiuser geodatabase. No database administration experience is required.

Prerequisites and Recommendations

Students should have completed *ArcGIS Desktop 2: Tools and Functionality* or *Learning ArcGIS Desktop* and *ArcGIS Desktop 3: Workflows and Analysis* or have equivalent knowledge. Database administration experience is not required.

Goals

After completing this course, you will be able to:

- Understand basic ArcSDE and RDBMS software architecture.
- Create and manage desktop and workgroup ArcSDE geodatabases.
- Examine vector and raster data in a multiuser geodatabase.
- Edit data stored in a multiuser geodatabase.
- Understand fundamental concepts of versioning.
- Perform one-way geodatabase replication for editing.
- Optimize the performance of client applications.

Data Management in a Multi–user Geodatabase

Four days • $400

Overview

This course prepares GIS and database administrators to implement an ArcSDE geodatabase by teaching how to load and manage ArcSDE data. The course presents concepts applicable to both workgroup and enterprise ArcSDE geodatabases but focuses primarily on the enterprise ArcSDE geodatabase. You will learn best practices for interacting with a multiuser geodatabase and explore multiuser geodatabase design strategies.

Audience

This course is designed for GIS and database administrators who want to implement a workgroup or enterprise ArcSDE geodatabase.

Prerequisites and Recommendations

Completion of *ArcGIS Desktop 2: Tools and Functionality* is required. Familiarity with basic RDBMS concepts is also required.

Goals

After completing this course, you will be able to:

- Describe the multiuser geodatabase architecture.
- Create connections to an enterprise ArcSDE geodatabase.
- Understand and manage user permissions.
- Design, load, and manage vector and raster data.
- Describe client optimization practices.
- Understand editing options in a multiuser geodatabase including versioning.
- Understand the basic architecture and workflow of multiuser editing.

Managing Editing Workflows in a Multi–user Geodatabase

Four days • $400

Overview

This course provides an insider's look at how to manage editing workflows in a multiuser geodatabase. You will learn to use the different editing environments and integrate these environments into your business workflow. This course teaches how to perform both nonversioned and versioned editing. Solid strategies for maintaining multiuser geodatabase performance are explored.

Audience

This course is designed for ArcSDE users and experienced ArcGIS users who want to manage their editing environment in a multiuser geodatabase. This course is suitable for those working with desktop, workgroup, and enterprise ArcSDE geodatabases.

Prerequisites and Recommendations

Completion of *ArcGIS Desktop 2: Tools and Functionality* is required. Familiarity with ArcSDE architecture and working on a Windows platform is also required.

Goals

After completing this course, you will be able to:

- Discuss and implement various editing workflows.
- Manage and edit data in nonversioned and versioned environments.
- Understand ArcSDE system tables and user delta tables.
- Use geodatabase archiving.
- Describe geodatabase replication.
- Create and use multiversioned views.
- Implement techniques for maintaining performance.

"Well designed, real time examples and situations, the lecturer is knowledgeable and provided good assistance."
(Alvin Alcindor - Centre for GIS, Seychelles)

Introduction to Remote Sensing with ENVI

Three days • $300

Overview

Go beyond the spatial dimension! Learn how to exploit the rich spectral information in your multispectral imagery using the power of ENVI. The class is ideal for beginners, and consists of lectures that cover the basics of multispectral remote sensing, coupled with exercises that reinforce concepts and introduce the student to image visualization and analysis with ENVI.

Audience

This course is designed for those with little or no experience working with multi-band data.

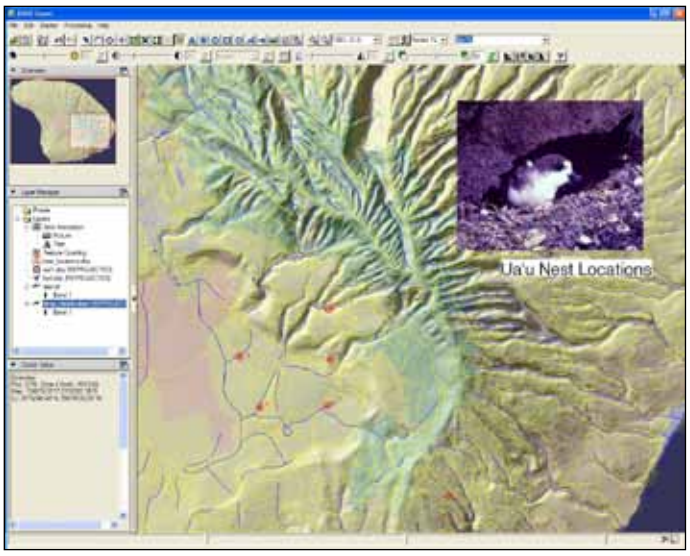
Prerequisites and Recommendations

Prospective students having experience with Windows based software and GIS use will have an added advantage. Knowledge of coordinate systems, datums, projections and ArcMap is highly recommended.

Goals

After completing this course, you will be able to:

- Explain the basics of Remote Sensing
- Introduce the Student to ENVI and how it can be used to visualize, analyze and present digital imagery
- Introduce the concept of the Electromagnetic spectrum and concepts of multispectral imagery
- Learn the importance of Spatial, Temporal and Radiometric resolution
- Learn about Instrument calibration and
- Atmospheric correction
- Understand the concept of Multi-spectral analysis and how the spectral properties of a material can be used to create a band ratio image
- Use multispectral classification to map material locations in a sample image
- Introduce the Student to ENVI Zoom



ENVI for GIS

Three days • $300

Overview

This concentrated two-day class will introduce ENVI as an ideal platform for creating and updating Geographic Information Systems (GIS) from imagery. Students will learn the basics of image visualization, and then move on to the advanced vector data analysis functionality in ENVI. Topics include image registration for transferring geographic coordinates from one image to another (including automatic ground control point selection), image to map registration, vector overlay and vector creation and update.

Audience

This course is designed for GIS users who would like to create and update their spatial data using imagery.

Prerequisites and Recommendations

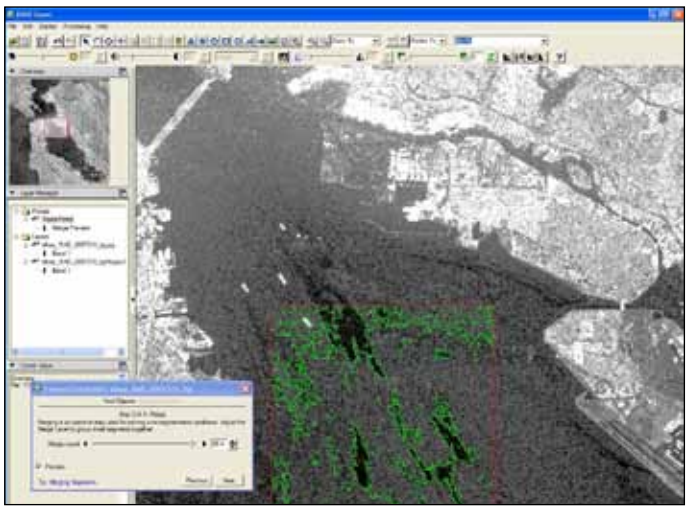
Prospective students having experience working with GIS and some basic theoretical knowledge in image analysis will have an added advantage.

Goals

After completing this course, you will be able to:

- Learn how to read virtually any type of raster image into ENVI
- Learn the difference between Vector and Raster data and how to work with Vectors in ENVI
- Learn how to use ENVI's image registration and geometric correction tools to reference images to geographic coordinates and/or correct them to match base image geometry.
- Learn how to use ENVI Zoom to display multispectral images
- Learn to use Feature extraction to extract features from a multispectral dataset

"The course is purely practical with little theory."
(Lorongoi Lawrence Lolele
- Geothermal Development Company)



CLASS INFORMATION

Class Schedule

Popular courses are scheduled in advance, while other courses are scheduled on request. For a current class schedule contact training@esriea.co.ke 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.

Pricing

Training is charged on an individual or group rate and payable in Ksh. or US$. The current individual rate is US$100 per day and applies to training conducted at our Esri Authorized Learning Centre at our offices in Upper Hill, Nairobi. Volume Discount is offered as per the following table:

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 16%) will be added to any training conducted within Kenya.

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.

Transfers and Substitutions

Students may transfer to another class up to two times at no charge, after which a US$100 fee will be charged for each subsequent transfer. Student substitutions (a student's place in class is filled by another person from the same organization) are allowed, provided that timely notice is given.

Travel

Transportation to the training site is the student's responsibility. Classes will be held between 9.00am and 5.00pm and students need to ensure that they attend training sessions on time.

Accommodation

Students are responsible for making their arrangements for accommodation for the duration of the training, but may contact training@esriea.co.ke in case they need assistance with their booking and reservations.

Meals

Lunch and refreshments will be provided at no charge for training conducted at our Esri Authorized Learning Centre in Upper Hill, Nairobi.

Course Materials

All course materials consisting of a workbook, training data and software licenses for the duration of the course will be provided at the training site.

"I advise all our clients to invest in the know-how and skills of their workers through quality training."
- Willy Simons, Managing Director

esri Eastern Africa

PIN No. P051159888W
VAT No. 0165201B

REGISTRATION FORM FOR INSTRUCTOR-LED TRAINING

Registration Procedure
Step 1: Photocopy this page
Step 2: Contact training@esriea.co.ke OR call us to check on course availability
Step 3: Complete all the details below
Step 4: Fax this form to 254 (0) 20 2713633 OR E-mail it to training@esriea.co.ke

PARTICIPANT NAME AND ORGANISATION ADDRESS (one registration form per person, please)

Participant Name.....Position.....

Organisation & Department .....

Postal Address & code.....Town/City.....Country.....

Tel. No.....Fax No.....

E-mail.....Signature.....

Is it your first time to train with us? (tick as appropriate) ☐ Yes ☐ No

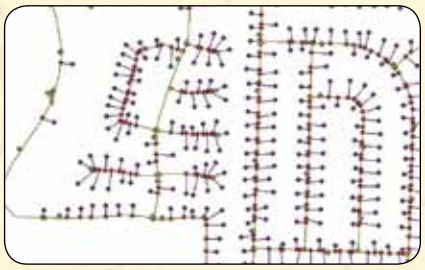
COURSE BOOKING (fill out the dates and the total price)

Training Course	Duration (Days)	Price in US$ (Excl. VAT)	Price in Ksh. (Excl. VAT)	Start Date
ArcGIS Desktop Fundamentals				
ArcGIS Desktop 1: Getting Started with GIS	3	300	24,000	
ArcGIS Desktop 2: Tools and Functionality	4	400	32,000	
ArcGIS Desktop 3: GIS Workflows and Analysis	3	300	24,000	
Data and Map Production				
Field Data Collection Using ArcPad and ArcGIS Desktop	3	300	24,000	
Building Geodatabases	4	400	32,000	
Working with Geometric Networks for Utilities	2	250	20,000	
Creating and Publishing Maps with ArcGIS	4	400	32,000	
Geoprocessing and Analysis				
Introduction to Geoprocessing Scripts Using Python	3	300	24,000	
Performing Analysis with ArcGIS Desktop	4	400	32,000	
Working with 3D GIS Using ArcGIS	3	300	24,000	
Enterprise GIS				
Introduction to ArcGIS Server	3	300	24,000	
Creating Effective Web Applications Using ArcGIS Server	3	300	24,000	
Authoring and Serving ArcGIS Mobile Projects	3	300	24,000	
Multi-user Geodatabases				
Introduction to a Multi–user Geodatabase	2	200	16,000	
Data Management in a Multi–user Geodatabase	4	400	32,000	
Managing Editing Workflows in a Multi–user Geodatabase	4	400	32,000	
Remote Sensing				
Introduction to Remote Sensing with ENVI	3	300	24,000	
ENVI for GIS	3	300	24,000	

PAYMENT INFORMATION

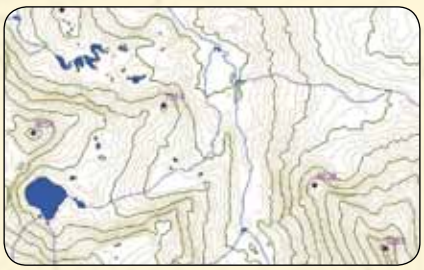
Class reservations are served on a first-come, first-served basis and are not confirmed until a 50% down-payment is received or alternative payment conditions are mutually agreed on. Payment should be made to Esri Eastern Africa by cheque or bank transfer as per the following details:

Account Name	Esri Eastern Africa Ltd	Bank Name	Commercial Bank of Africa
Account Number	0182570508 (US$) / 0182570001 (Ksh)	Branch	Upper Hill
SWIFT Code	CBAFKENX	Bank Address	P.O. Box 30437-00100, Nairobi, KENYA



Esri EA

GIS TRAINING SOLUTIONS



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3rd Floor KUSCCO Centre, Upper Hill, P. O. Box 57783 – 00200, Nairobi, KENYA
Tel: 254 (0) 20 2713630/1/2 Fax: 254 (0) 20 2713633
Mobile: 254 (0) 722 521341, 733 568381
Email: training@esriea.co.ke

www.esriea.co.ke