Introduction to ArcView® GIS

March 14-15; May 17-18, 2001
Syracuse, NY

Sponsored by—
Continuing Education Program in Community Planning, Faculty of Landscape Architecture and
ESF Continuing Education

Working professionals in many disciplines are now adopting geographic information systems (GIS). GIS is no longer limited to GIS specialists. Anyone who works with information that has geographic components may have applications for GIS. Get ready to put this new technology to work for you with Introduction to ArcView GIS. This two-day course provides participants with the hands-on experience you'll need to start using the many powerful functions and capabilities of ArcView GIS.

Description

This two-day course is the fast track to learning to use ArcView GIS software. After receiving a conceptual overview and hands-on experience using the software, you'll be able to quickly take advantage of ArcView GIS software's powerful display and analysis capabilities. You'll use ArcView GIS Version 3.1 to create, edit, display, query, and analyze geographic and tabular data, and to create presentation maps and charts.

Hands-On Exercises: You'll have your own computer for the intensive hands-on work included in the workshop.
Plus... You'll receive an introductory text for ArcView. This extensive reference will be a valuable resource back on the job.

Who Should Attend: This program is designed for planners, engineers, natural resource managers, social scientists, emergency management personnel, transportation professionals, marketing specialists, economic development staff, real estate professionals and others working with geographic information.

Prerequisites: *Introduction to ArcView GIS* is designed for those with little or no desktop mapping or GIS experience; however, registrants should know how to work with windows software.

Instructors: ***Nicholas Colas*** is an ESRI® Authorized ArcView GIS Instructor. Nick uses ArcView GIS extensively in his work at Cayuga County Planning, and is a visiting instructor at SUNY ESF. ***Allen Lewis*** uses ArcView GIS in land use planning applications, and has been using and teaching GIS at SUNY-ESF for over 15 years.

Introduction to ArcView® GIS

Detailed Program

Contents

1. ArcView basics
2. Getting data into ArcView
3. Displaying themes
4. Working with tables
5. Creating and editing shapefiles
6. Querying and analyzing themes
7. Geocoding addresses
8. Creating layouts

Section 1
ArcView Basics
What is ArcView GIS?
- What you get with ArcView
- What is desktop GIS?
- How desktop GIS works

Exploring the ArcView interface
- ArcView documents
- ArcView projects
- Introducing views and themes
- Common theme operations
- Using ArcView s Help system
- *Exercise 1: An ArcView sampler*

Section 2
Getting data into ArcView
Creating views and themes
- Spatial data sources for themes
- Additional data sources
- Creating a view
- Adding a feature theme to a view
- Data sources with multiple feature types
- Adding an image theme to a view
- Adding a theme from x,y coordinate
- Theme tables
- Saving a project
- *Exercise 2A: Add themes to a view*

Referencing views to the real world
- Understanding distortion
- You need a projection when
- Setting the properties of the view
- Setting the map projection of the view
- *Exercise 2B: Set view properties*

Section 3
Displaying themes
Thematic mapping with the Legend Editor
- Choosing a legend type
- More legend types

Choosing a classification method
- Using natural breaks
- Using quartile, equal interval, and equal area
- Using standard deviation and statistics
- Normalizing your data
- Manipulating classes

Modifying legend elements
- Working with null values
- Changing symbols with the Symbol window
- Scaling symbols
- Saving and loading legends
- *Exercise 3A: Use the Legend Editor*

Managing theme display with Theme Properties
- Defining a theme subset
- Setting a scale threshold
- Labeling theme features
- Using Auto-label
- Hot linking theme features
- Creating hot links
- Locking theme properties
- *Exercise 3B: Set theme display properties*

Section 4

Working with tables

Using ArcView tables
- Adding tables from existing sources
- Creating a new table and file
- Adding fields to a table
- Adding records to a table
- Editing values in a table
- Calculating fields
- *Exercise 4A: Add and edit tables*

Querying tables
- Displaying the selection
- Modifying the selection
- Displaying statistics
- Summarizing tables
- Results of summary statistics
- *Exercise 4B: Select and summarize records*

Building relationships between tables
- Relational database basics
- Table record relationships
- Joining tables
- Results of joining tables
- Linking tables
- *Exercise 4C: Join and link tables*

Creating charts from tables
- Creating a chart
- Changing the chart type
- Modifying chart elements
- Working with tables
- Changing legend properties
- Changing axis properties
- Changing increments and adding and lines
- Switching series and groups
- *Exercise 4D: Create a chart*

Section 5

Creating and editing shapefiles

Working with shapefiles

Converting a theme to a shapefile
Converting selected features to a shapefile

Creating a new shapefile

Adding shape theme features
Snapping features
Setting snapping
Adding attributes

Editing shapefiles

Reshaping features
Splitting lines and polygons
Updating attributes with Split
Merging features with Union
Updating attributes with Union
More editing operations
More editing operations
Undo Edits
Saving your edits
Exercise 5: Create and edit shapefiles

Section 6

Querying and analyzing themes

Analyzing spatial relationships

Theme-on-theme selection
Selecting points near a line
Selecting adjacent polygons
Line-on-po]ygon selection
Point-in-polygon selection
Exercise 6A: Use theme-on-theme selection

Performing spatial join and spatial merge

Spatial join: inside
Spatial analysis example
Spatial join: nearest
Merging features
The merging process
Exercise 6B: Join and merge spatial data

Section 7

Geocoding addresses

What is address geocoding?

The address geocoding process
Setting geocoding theme properties
Geocoding addresses
Matching and scoring address components
The results of geocoding
Using the Geocoding Editor
Using Edit Standardization
Setting geocoding preferences
The geocoded theme
Locating a single address
Exercise 7: Address geocoding

Section 8

Creating layouts

What is a layout?

Designing a map layout
Creating a map layout
Defining the layout page

Defining frames

Creating a frame
Setting view frame properties

- Scaling the view frame
- Controlling scaling and view frame extent
- Redrawing the layout
- Setting legend frame properties
- Setting scale bar frame properties
- Other frame types

Adding graphics

- Modifying graphics
- Using and creating layout templates

Printing a layout

- *Exercise 8: Create a map layout*

Introduction to ArcView® GIS

Topics & Preliminary Program

Topics covered

ArcView GIS overview: capabilities and applications.

ArcView's graphical user interface.

ArcView GIS projects and documents: organizing and managing views, tables, charts, and presentation documents.

The on-line help system.

Views and themes: displaying geographic data; x,y coordinates; projection; manipulating labels, symbology and classification.

Tables: creating and modifying ArcView GIS tables; querying tables; building relationships between tables; creating charts from tables.

Shapefiles: creating and editing ArcView's native GIS files.

Spatial query and analysis: spatial overlay; selecting themes based on relationships with other themes; spatial joins and merges.

Geocoding addresses.

Creating map and presentation documents: maps, charts, tables, and other graphics.

Detailed Program

Workshop Schedule

Day 1
Registration
ArcView basics
Getting data into ArcView GIS
Displaying themes, modifying data display
Working with tables
Day 2
Creating and editing shapefiles
Querying and analyzing themes
Spatial analysis
Geocoding addresses
Creating maps and presentation documents

Hands-On Exercises: You'll have your own computer for the intensive hands-on work included in the workshop.
Plus... You'll receive an introductory text for ArcView. This extensive reference will be a valuable resource back on the job.

Introduction to ArcView® GIS

Registration Information

Simply fill out and mail the registration form with your workshop deposit or fee. To tentatively reserve a space, call ESF Continuing Education at (315) 470-6891, or FAX (315) 470-6890.
Enrollment is limited. Please register early to ensure your place.

Dates: March 14-15; May 17-18, 2001

Location: Syracuse, NY. Directions will be sent with your confirmation.

Workshop Fees, *payable to SUNY ESF:* $650; $595 early registration discount fee. Government and non-profit fees: $550; $495 early registration discount fee.

Early Registration Deadline: Ten days before workshop.
Registration Deadline: One week prior to workshop

Refunds: Participants who wish to withdraw from this program must give written notice 10 days prior to course to receive a full refund. A $45 cancellation fee will be retained after that, however, no refunds will be granted if notice is received the day of the workshop or after. Substitutions are permissible at any time. SUNY ESF reserves the right to cancel this program in the event of insufficient registrations; full refunds will be made in such case.

For information, call Horace Shaw at (315) 470-6891.

Introduction to ArcView® GIS

Registration Form

PLEASE PRINT CLEARLY

Name _____

Organization _____

Address _____

City _____ **State** _____ **Zip** _____

email _____ **Phone** (____)_____ **Fax** (____)_____

Register me for The Introduction to ArcView Workshop on

o March 14-15 o May 17-18. Enclosed is my workshop fee,

Fees: o **If paid** at least ten days in advance: $595. Government and non-profit fee: $495
o **If paid** within ten days of workshop: $650. Government and non-profit: $550

Credit Card Payment: o VISA o Mastercard Expiration Date: _____

Account Number: _____

Signature : _____

Special needs:_____

Mail form to: ESF Continuing Education, SUNY College of Environmental Science & Forestry, Syracuse, NY 13210-2784

FAX: 315-470-6890

Registration Deadline: One week prior to workshop.