



Basics of ArcGIS 9.x

ArcGIS 9.x Refresher

*Introduction to SketchUp,
Google Earth and ArcGIS*

Basics of Internet Mapping

Introduction to GPS with GIS

*CommunityViz 3:
Scenario 360 and SiteBuilder 3D*

Landscape Site Suitability Modeling

GIS Geospatial Technology Training Program

GIS Short Courses

October 2006 – July 2007

College of Design

IOWA STATE UNIVERSITY
University Extension

GIS Short Courses • October 2006 – July 2007 College of Design • GIS Geospatial Technology Training Program

The ISU Extension GIS Geospatial Technology Program will offer a series of hands-on short courses in geographic information systems in fall 2006 and spring 2007. All courses will be held at the GIS Graduate Laboratory, located in room 526 of the College of Design building on the west side of the Iowa State University campus.

Fees include course tutorials, handouts, snacks and beverages. Lodging and meals are not included. Participants are eligible to receive continuing education units (CEUs), noncredit units awarded at a rate of one CEU for every 10 hours of classroom time. There is an additional \$10 fee per course for CEUs.

Advance registration is required, and enrollment is limited to 12 participants per course. Enrollment is not guaranteed unless registration is accompanied by payment in full. Individuals receive a 10 percent discount if enrolled in two or more courses. If two or more people from the same organization register for the same course(s) in this series, each registrant also will receive a 10 percent discount. (Two or more people from the same organization enrolled in two or more courses receive a 20 percent discount.) An organization may reserve all 12 seats for a particular course at a 15 percent discount.

Customized Courses

We offer customized training at your site or ours. If your organization has a group that could benefit from our training (either customized or our standard classes), please contact Alan Jensen to discuss options.

For More Information

Alan Jensen

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E-mail ldoering@iastate.edu

Basics of ArcGIS 9.x

This two-day course will explore the new, easy-to-use features in ArcGIS 9.x: ArcMap, ArcToolbox and ArcCatalog. ArcMap is a map-centric application for the editing, display, query and analysis of map data as well as map layout tasks. ArcToolbox is an application for performing geoprocessing operations such as data conversion, overlay processing, buffer creation and map transformation. ArcCatalog is a data-centric application that locates, browses and manages spatial data.

Topics covered

- Displaying, projecting and editing data
- Working with tables
- Working with georeferenced data
- Querying your database and selecting features by location
- Making good maps from the data

This course is intended for both new and experienced users of geographic information systems. Experience using Windows-based applications is recommended.

ArcGIS 9.x Refresher

This intensive one-day course is for those who have already taken basic instruction in ArcGIS 8.x or 9.x but may not have had the opportunity to use the software regularly, and now wish to “catch up” and become more skilled. The course covers the same topics as Basics of ArcGIS 9.x (listed above), but in half the time.

Completion of a basic or introductory course in ArcGIS is recommended prior to enrolling in this course.

Introduction to 3D GIS Using SketchUp, Google Earth and ArcGIS

In this two-day introductory course, you will learn how to create 3D models in SketchUp and integrate those models into your ArcGIS 9.x system and Google Earth. Three-dimensional modeling provides an easy way to demonstrate how a design proposal will fit into an existing site and allows the client to better visualize the design. A brief overview of displaying and navigating 3D data in ArcScene also will be provided.

Topics covered

- 2D and 3D drawing in SketchUp
- 3D modeling basics
- Digital terrain modeling with SketchUp's Sandbox
- Materials and rendering
- Working with components
- Importing/exporting attributed GIS data
- Navigating SketchUp models in ArcGIS (ArcScene)
- Exporting SketchUp/ArcGIS data to Google Earth
- Mashup overview (Google Earth)

A basic familiarity with ArcGIS 9 is required for this course.

Course Descriptions

Basics of Internet Mapping

This one-day course will focus on the basics of publishing an Internet-based mapping application.

Topics covered

- Overview of several Internet-based mapping technologies
- Various map APIs (Google, Yahoo)
- Internet mapping server software

Participants will get the most out of this course if they have had prior experience in developing Web pages using HTML.

Landscape Modeling for Site Suitability

In this two-day course, you will use raster data and the Spatial Analyst extension with ArcGIS 9.x to spatially model regional landscapes and their suitability for a specific use (such as transportation, housing, agriculture or recreation). You will apply concepts of landscape suitability analysis, spatial multicriteria decision making, measurement scales, and weighted overlay functions to locate suitable sites, evaluate proposed uses on a selected site, or assess potential impacts of development.

By the end of the course, you will be able to (1) apply Map Algebra and ModelBuilder to site suitability modeling, (2) analyze and compare alternative suitability models spatially and quantitatively, and (3) evaluate modeling results in terms of suitability decision criteria.

Topics covered

- Suitability criteria, site selection, route selection
- Impact assessment, environmental impacts
- Landscape suitability analysis
- Databases and data sources
- Decision support systems (DSS), spatial multicriteria decision making
- Ranking and weighting
- Spatial Analyst extension, ModelBuilder
- Developing scenarios and alternatives
- Thematic maps, composite maps, cartographic design
- Evaluating alternatives

Familiarity with ArcGIS 9 is strongly recommended for this course.

Introduction to GPS with GIS

This one-day course teaches the basics of the Global Positioning System (GPS), how to collect data using handheld GPS equipment and how to download and manipulate the data in ArcGIS 9.x.

Topics covered

- GPS fundamentals
- Configuring GPS equipment
- Field data collection techniques
- Field data collection session including downloading collected data to your computer
- Using GPS data in ArcGIS 9.x

Familiarity with ArcGIS 9 is strongly recommended for this course.

CommunityViz 3: Scenario 360 and SiteBuilder 3D

This two-day course offers an in-depth exploration of CommunityViz's Scenario 360 and SiteBuilder 3D. Scenario 360 is an interactive decision-making tool that works as an extension to ESRI ArcMap. This software encourages participation and collaboration by engaging users and public audiences through two-dimensional visualization and interactive analysis.

Scenario 360 helps you view, project, analyze and understand potential alternatives and impacts via visual exploration and alternative scenario construction and analysis. It allows you to experiment with hypothetical scenarios, challenge assumptions on the fly, and view impacts of changes. Proposals, assumptions and impacts can be viewed side by side to illustrate the choices that need to be made.

SiteBuilder 3D can be used to provide real-time exploration of photo-realistic 3D landscapes using your existing data or elements from the 3D model library. Three-dimensional scenes can be exported in a portable format that can be used on other computers, thus allowing friends and colleagues the ability to digitally fly through and explore your scenes at no charge and without installing any special software.

Topics covered

- Setting up a scenario (analysis) from scratch
- Adding data
- Defining variables and formulas
- Creating dynamic attributes
- Working with assumptions, indicators, charts and alerts
- Presenting data through maps
- Working with SiteBuilder 3D
- Creating terrain
- Adding images as textures
- Navigating in 3D
- Planting features on the terrain
- Creating virtual tours (i.e., making movies)

Familiarity with ArcGIS 9 is strongly recommended for this course.

GIS Short Courses • October 2006 – July 2007

Program Faculty

Paul Anderson is a professor of landscape architecture and agronomy at Iowa State University. Among the courses he teaches are landscape resource planning and GIS landscape modeling. His outreach and research activities involve studio courses and graduate student research in GIS applications for land-use planning and natural resource management, the application of GIS technology to landscape inventories, site/route selection studies, suitability studies, and environmental impact studies. He is the author of *Regional Landscape Analysis* (Environmental Design Press, 1980).

Patrick Brown is a GIS analyst at the Iowa State University GIS Support and Research Facility. He has taught several GIS and Internet mapping workshops for the Iowa Geographic Information Council's (IGIC) biennial conference and is a member of the IGIC Board of Directors. He has taught GIS short courses for ISU for over five years. His experience in developing interactive mapping sites includes the use of MapServer and ESRI ArcIMS.

Alan Jensen is the ISU Extension geospatial technology program specialist. He directs the Extension GIS Geospatial Technology Training Program. He recently served as the statewide coordinator for IGIC from 2001 to 2005, and he is a 12-year member of the American Institute of Certified Planners (AICP). Alan has developed and delivered GIS training sessions for multiple agencies around Iowa, including Roadside Vegetation Managers, the Councils of Government (COGs) and Regional Planning Agencies (RPAs), and the Iowa Department of Transportation.

Nora Ladjahasan is an assistant scientist with the Institute for Design Research and Outreach (IDRO) at Iowa State University. Her areas of expertise are in GIS applications, specifically CommunityViz, economic development, rural planning, community studies and housing planning. She recently worked on the Fort Madison CommunityViz project, helping create a 3D visualization of the downtown area and an economic analysis or projection of the city using PolicySim and Scenario Constructor modules of CommunityViz.

Neha Mehrotra is a lecturer in the community and regional planning department at Iowa State University. She has used geographic data standards and GIS technology in the collection, exchange and analysis of information in support of UN humanitarian relief in developing nations. She also worked on a team developing geospatially-referenced digital data models to support an environmental sustainability study program. Her areas of interest include GIS-based analysis and real-world 3D modeling to envision land-use alternatives and understand their environmental, economic and social impacts.

Christopher Seeger is an assistant professor of landscape architecture and the Extension landscape architect at Iowa State University. His research involves the use of spatial technologies such as geographic information systems and global positioning systems to identify how the design of a community may impact a resident's physical activity and health. He has taught GIS courses and workshops for four years and specializes in public-participation GIS, 3D GIS visualization and multimedia-enriched Web-based GIS. He is a board member of IGIC and the Iowa Chapter of the American Society of Landscape Architects.

How to Register

Register online at www.ucs.iastate.edu
If paying by credit card, include your card information online to complete registration.
If paying by purchase order or check, registering online will temporarily hold a space for you in the desired course(s); however, enrollment will not be guaranteed until full payment has been received.

Return this registration form with full payment to:

GIS Short Course Registration
Iowa State University
University Conference Services
102 Scheman Building
Ames, IA 50011-1112

Registration Information

Registration Deadlines

Registrations must be received five working days prior to the start of each course. Registrations must be accompanied by payment in full. Your enrollment confirmation will include parking information.

Refund and Cancellation Policy

If you are unable to attend a course for which you have registered, please notify us immediately. Your prompt notification may make it possible for another person to register. If you cancel at least five days before the start of a registered course, we will refund the full prepaid fee minus a \$25 processing fee. For cancellations received fewer than five days in advance, there will be no refunds, although substitutions are welcome at any time. In case of cancellation due to insufficient enrollment, a full refund will be made.

... and justice for all

The US Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Many materials can be made available in alternative formats for ADA clients. To file a complaint of discrimination, write USDA, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410, or call 202-720-5964. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the US Department of Agriculture. Jack M. Payne, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

2006 – 2007 GIS Short Courses • It's easy to register!

Mail University Conference Services **Fax** (515) 294-6223 **Online** www.ucs.iastate.edu/mnet/arcgis/home.html
 Iowa State University, 102 Scheman Building, Ames, IA 50011-1112

Photocopy this form or download it from the Web site for additional registrations: www.design.iastate.edu/GIS/shortcourseform.php

Iowa State University requests this information to preregister you in a short course. No one outside the university is routinely provided this information. If you fail to provide the required information, we cannot promise accurate registration. (Reference: Iowa Code, Chapter 22:11; Iowa Fair Information Practices Act.)

NAME First	Middle	Last
E-MAIL	PHONE Daytime	Evening
		Cell
		Fax

Home or Business ADDRESS _____ in care of/attention _____

Address line 2 _____

City/State/Zip _____ Country _____

GIS Short Courses

CEUs?

Basics of ArcGIS 9.x	<input type="checkbox"/> October 26-27	\$500	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> February 15-16	\$500	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> April 5-6	\$500	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> July 12-13	\$500	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
ArcGIS 9.x Refresher	<input type="checkbox"/> December 7	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> January 25	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> February 22	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> March 22	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> April 12	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> May 10	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> June 14	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
Basics of Internet Mapping	<input type="checkbox"/> November 30	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> December 8	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
Intro to GPS with GIS	<input type="checkbox"/> December 8	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
	<input type="checkbox"/> February 23	\$250	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
CommunityViz 3	<input type="checkbox"/> March 1-2	\$500	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
Intro to 3D GIS	<input type="checkbox"/> March 29-30	\$500	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *
Site Suitability Modeling	<input type="checkbox"/> June 7-8	\$500	<input type="checkbox"/> No	<input type="checkbox"/> Yes + \$10 *

\$ _____ + \$ _____ = \$ _____

- Individuals deduct 10 percent if enrolled in two or more courses. 10% = \$ _____
- If two or more people from the same organization register for the same course(s), deduct 10 percent per registrant. 10% () = \$ _____
- If your organization is reserving all 12 seats for a particular course, deduct 15 percent from the total cost. 15% = \$ _____

* Please note that you will be contacted for your Social Security number if you request CEUs. **TOTAL** \$ _____

Special needs? Yes, I need accommodations for a disability.

Payment Method — Enrollment cannot be guaranteed unless full payment has been received.

CHECK – Make payable to Iowa State University.

CREDIT CARD Visa Mastercard Discover

Cardholder name _____ Signature _____ Card # _____ Expiration _____

PURCHASE ORDER – Please attach a copy.

P.O. # _____ Billing address _____ organization _____ in care of/attention _____

Address line 2 _____

City/State/Zip _____



GIS Geospatial Technology *Training Program*

IOWA STATE UNIVERSITY
University Extension

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