



GIS Programming 101: Mastering Python for Geoprocessing in ArcGIS

Instructor Guided Internet Course or Self Paced DVD Course

Provided by **Keck & Wood, Inc.** in partnership

With **Geospatial Training Services, LLC**

Course Overview

This course is designed to teach the fundamental programming constructs of the Python language and how it can be integrated with ArcGIS[®] Desktop to automate geoprocessing tasks. Course participants will be led through a series of 12 modules covering topics such as basic Python language features, the Geoprocessor ArcObject[™] and its associated classes, creation of dynamic scripts which can be added to ArcToolbox[™], error handling techniques, and many others.

Students can take it either as a Self Paced DVD based course or as an Instructor Guided Internet Course. Our Internet Classroom uses the same technologies implemented by many colleges and universities around the world to deliver Internet based courses. Our new Internet GIS Classroom blends the best of instructor led and CD/DVD-ROM class formats into a new instructor guided web based format that allows for more interactivity between the instructor and student while at the same time still being self paced.

Target Audience

This course is designed for beginner to advanced level ArcGIS programmers who wish to learn how to create geoprocessing scripts in the ArcGIS Desktop interface. Such scripts can be used to automate and/or batch process various analysis within ArcGIS.

Prerequisites and recommendations

This course is not for new computer or ArcGIS users. Students taking this course should have taken [ArcGIS Desktop II & III](#) or have similar real world experience. They should also have an understanding of basic programming concepts.

Course Goals

After successfully completing this course users will have acquired a number of new skills related to Geoprocessing with Python. These new skills include:

- Fundamental understanding of the Python programming language.
- How to write Python scripts to do geoprocessing tasks such as buffer, clip, overlay, insert, update, and delete rows from a table or feature class, and any other system tool provided by ArcToolbox.
- How to create custom toolboxes in ArcToolbox
- How to read the Geoprocessor Object Model Diagram
- How to write dynamic scripts that can be attached to ArcToolbox.
- Understanding of the Geoprocessor ArcObject and how it controls access to the geoprocessing objects.

Course Modules

1. Getting started with Python in ArcGIS
2. The Geoprocessor ArcObject
3. Basic Python Language Features
4. Obtaining descriptive information about ArcGIS Data
5. Using Cursor Objects to select, edit, and add records to tables and feature classes
6. Enumeration Objects for listing ArcGIS data
7. Miscellaneous objects
8. Integrating Python scripts with ArcToolBox
9. Geoprocessing Tools
10. Scheduling Geoprocessing Tools
11. Using Messages to report python output



Cost

- DVD Based course is \$149.00 per student
- Internet Based Instructor Guided course is \$567.00 per student.

Discounts are available for groups or if bundled with other training

Required Software

- ✓ ArcGIS Desktop 9.2 or 9.3 (ArcView, ArcEditor, or ArcInfo)
- ✓ Internet Browser (Internet Explore 7 or higher recommended)

What is an Instructor Guided Internet Class?

Our Instructor Guided Internet classes are self-paced, like our CD/DVD-ROM classes. However unlike our CD/DVD-ROM classes, they feature interaction between student and instructor via chat sessions, discussion groups, exercise reviews and during at least two phone meetings between student and instructor to discuss your progress. In addition, there will be interaction among students as well through discussion groups. This is the same technology and format being used by numerous universities in the US and Canada. [You can click here for some FAQs about this format.](#)

For information about this course, other GIS training offered or the full range of GIS/Mapping services provided by Keck & Wood, Inc. please contact:



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