



GIS WORKSHOP

ADVANCED GEOSPATIAL TOOLS & TECHNIQUES

IN NATURAL RESOURCES: Python Programming & Scripting



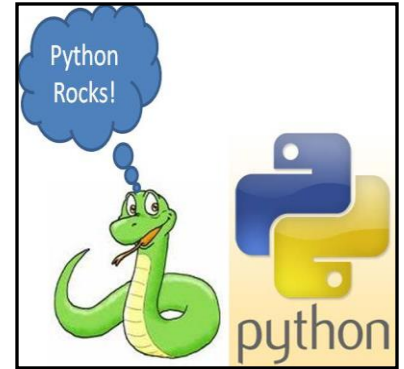
Workshop Dates: **12 - 15 June 2017**

Early Arrival: Monday @ 12:30

Start Time: Monday @ 1:00 pm; 8:00 am other days
Adjourn Time: Thursday @ 12:00 pm

Workshop Duration: 3 days (half day on Monday/Thursday)

Registration Deadline: Monday, June 5, 2017



Location: Tall Timbers Research Station & Land Conservancy – *The Barn*

Instructors: Theron M. Terhune, PhD, GISp

Course Website: <http://www.gis.ttrs.org/GISHome.html>

Cost: 3-Day Workshop \$625.00
Workshops include all materials, workbook, GIS data on Jump drive, software, & snacks/drinks and lunches.
** *Group (5 seats or more) Rates Available:*
*** *On-Site Lodging is Available:*
Contact us via Email or phone for more details.

Registration Limit (max): 15

What to Bring: Laptop (pref.), if available.

Topics Covered: Focus will be on ArcGIS 10 but relevant extension/reference to version 9.3 will be provided. Advanced geo-processing; batch processing; model builder; an Introduction to Python; Integration of Python and ArcGIS; Creation of GIS tools; Toolbox functionality: importing; creating; and sharing scripts; Optional Advanced Python coding exercises including linking to program R and MySQL.

Description: This is a hands-on, exercise-based Python Programming course with direct application to GIS topics that explores the range of functionality of ArcGIS beyond the out-of-the-box geospatial solutions. The course has been tailored to aptly benefit those working in conservation and natural resources, but may also broadly apply to professionals outside these fields.
You do not need to have experience or vast knowledge of Python (we will assume you have little to no programming experience) to take this class but you should have a relatively good understanding of and adequate experience with ArcGIS.

Tentative Schedule



Days 1 - 2, Module Topics:

Geoprocessing & Batch Processing

Overview of Geoprocessing Concepts
Geoprocessing via Batch mode

Model Builder

Working with Shapefiles, Feature Classes, etc.
Creating and Using Geodatabases
Parameter definitions
Generate Models to increase throughput and efficiency
Exporting and importing models

Mechanics of Tools and ArcScripts in ArcGIS

Searching for, loading and working with Tools and scripts
Toolboxes and customized scripts
Third Party Tools and functionality

Introduction to Python

Basics of Python Programming and Concepts
Text Editors: PyWin, etc.

Working with Python Data types

General data formatting in Python
Getting to know strings; lists; variables, and etc.

Digging Deeper into Python Concepts

Loops & Making Decisions
Working with geometry: cursor objects; point objects; etc.
Working with subsets of data (e.g. tables, fields and records)

Integration of Python into ArcGIS

ArcToolbox
Advanced Model Builder
Interactive Python
ArcScripts and Custom tools

Python Modules & Functions

Importing built-in Python modules
Simple Writing and Reading of Text and Excel Files

Troubleshooting and Debugging Scripts

Manual and Automated Debugging

Tall Timbers Research Station & Land Conservancy

Days 3, Module Topics:

Advanced Geoprocessing & Batch Processing

Scheduling Python Scripts for Batch Processing
Advanced Geoprocessing

Advanced Programming & Scripting in Python

Working with Dictionaries, Functions, & Classes
Organizing and Structuring Efficient Scripts
Designing & Releasing your own Python Modules

Advanced Sharing Custom Tools and Scripts: toolboxes and such

Creating Executables for Module/Script Distribution

Tapping into the Power of in Python and ArcGIS Simultaneously

Summarizing, Writing, and Exporting Data
Accessing Databases (e.g. MySQL): reading and writing
Accessing Statistical Software: using Python to talk to program R

Workshop Participant Questions

Working with “Real” Data and Consulting:

Problems, work-a-rounds and solutions
**You are encouraged to bring your own data and questions
**Python scripting setup and design questions



GIS WORKSHOP

Advanced Geospatial Tool & Techniques in Natural Resources

Application Form



Name: _____ Agency/Organization: _____

Address: _____

City: _____ State: _____ Zip: _____

Primary Phone: _____ Cell Phone: _____

**Email Address¹: _____

If student, School Name: _____

Please rate your Windows – based PC experience: Beginner Intermediate Advanced

Please rate your GIS – based experience: Beginner Intermediate Advanced

Please rate your Programming – based experience: Beginner Intermediate Advanced

What GIS software products have you worked with? _____

Method of payment: Credit Card Check Enclosed Money Order P.O Number:

Credit Card Information: Master Card Visa Credit Card # _____

Refund Policy for Cancellations:
✓ 2 – 3 weeks prior to class: full refund;
✓ Less than 1 week prior to first class meeting: no refund.

Expiration Date: _____ 3-digit SSN: _____

Signature: _____

Applications & Payments are due by Monday, 5 June 2017

For more information: call (850) 893 – 4153 (ext. 268) or E-mail: theron@ttrs.org

Send this application to:

Theron M. Terhune,

13093 Henry Beadel Drive, Tallahassee, FL 32312

or fax it to: (850) 906 - 0837

or E-mail: theron@ttrs.org

Reserve your place early by sending in your application ASAP! **(Pre-payment is required)**

¹ Email will be the primary means of correspondence for this workshop and dissemination of updates, GIS data, etc.