Python scripting for ArcGIS

WILD 4950/6900
Fall 2017 (August 28 - September 29)

Instructor: Chris Garrard
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Office: Janet Quinney Lawson (JQL) 232
Office hours: Tuesday 2:00 - 3:00, Thursday 3:00 - 4:00, or by appointment.
I will be unlikely to meet with you if you skipped out on class without a reason.

Class periods

Monday 10:30-11:20
Wednesday 10:30-12:20
Quinney Library 306

Course description and objectives

This course will teach you the basics of the Python programming language and using it with ArcGIS. By the end of this course you will understand the basics of the Python programming language and be able to:

- Navigate the online help for Python and ArcGIS
- Write your own Python functions and modules
- Write Python scripts that use the Esri ArcPy module for ArcGIS 10.5
- Create custom tools in ArcMap that use Python scripts

Course materials

There are no required texts for this course, although you will be given required reading each week and will also be expected to use the Python and Esri online documentation. You are welcome to use other web resources as well, but be aware that not all information you find is current and/or accurate. Given that the web is an extremely important source of help in real life (nothing else can keep up with changing technology!), it'll be good for you to learn how to find information and filter out the bad stuff.

Course hardware

You can use the Quinney Lab whenever it's open and not in use by another class, and you can also use a personal computer. Instructions for installing and configuring the required software can be found in installation.md.

Course format

We will meet for an hour on Mondays and two hours on Wednesdays. Some days will involve a bit of lecture, but most class time will be hands-on. You will be given material to work through each week that will involve some comprehension questions that need to be turned in. This is to prepare you to work on the homework exercises during class. Class will also be a time to discuss or clarify information from the readings.

Homework

You will be given several programming tasks to complete each week. You will turn your homework in by pushing it to your personal homework repository on GitLab. Submit scripts as .py files and screenshots as .png files. I don't mind if you work together, as long as you're helping each other and it isn't one person doing the work and another copying.
Grading

Homework assignments will make up 85% of your grade and the comprehension questions will make up the rest. Late assignments will only be accepted under special circumstances and must be cleared with me first. Letter grades will be assigned using the standard USU grading scale.

Tentative schedule

- Week 1: Intro to Python and ArcPy
- Week 2: Using geoprocessing tools
- Week 3: Working with individual vector features and geometries
- Week 4: Working with rasters
- Week 5: Creating Python toolboxes and add-ins