

SPRING 2022

Introduction to Geospatial Programming

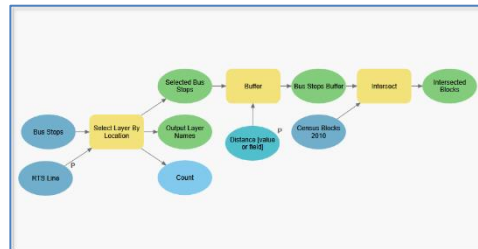
GEG 238 (3 credit hours)

Part of the micro-credential series (GEG 236, 237, 238) and the A.A.S. in GIST.



This course teaches how to customize and automate Geospatial Information Science (GIS) applications using the Python scripting language. Automation can make your work easier, faster, and more accurate, and knowledge of a scripting language is a highly desired skill in GIS analysis. Upon completion, students will be able to solve geospatial problems and streamline GIS workflows through the creation and modification of scripts. Students will be guided through a series of lectures and hands-on computer-based lab exercises. Course material used are based upon the United States Department of Labor's Geospatial Technology Competency Model (GCTM) for entry level geospatial occupations including Geospatial or GIS Technicians or Technologists.

Prerequisites: GEG 130, GEG 133, and GEG 230 or GEG 236 all with a grade of C or higher or permission of the instructor.



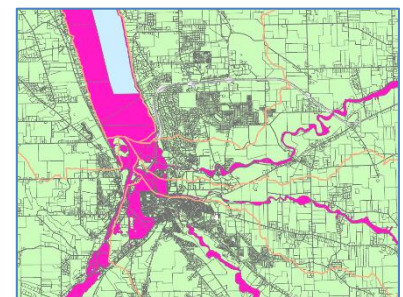
```
1 # -*- coding: utf-8 -*-
2
3 Generated by ArcGIS ModelBuilder on : 2021-10-29 22:15:52
4
5 import arcpy
6 from sys import argv
7
8
9
10
11 # To allow overwriting outputs change overwriteOutput option to
12 arcpy.env.overwriteOutput = False
13
14 arcpy.ImportToolbox(r"c:\program files\arcgis\pro\Resources\Arc
15 # Model Environment settings
16 with arcpy.EnvManager(scratchWorkspace="C:\Student\GEG236_RTS\
17 Bus_Stops = "stops_XYTableToPoint_Project"
18 Census_Blocks_2010 = "tabblock2010_36_pophu_clip_P"
```

Students in this course:

- Learn to automate geoprocessing tools and to modify and create scripts in Python.
- Learn geospatial coding best practices.
- Design and develop custom GIS applications.
- Modify user interfaces to increase productivity.
- Understand introductory programming concepts, methods, approaches and workflows.
- Explain advanced programming concepts.

Topics covered:

- Introduction to Python and geoprocessing tools.
- Model Builder and programming fundamentals.
- Geoprocessing and object-oriented programming.
- GIS inventory using the data access module.
- Debugging and error handling.
- Data access and creation with geodatabases.
- Working with geometry and map layout.
- Jupyter notebooks.



Day/Time:

Weds. 5:30 to 7:20 PM

Combination Remote learning and Online. For more info., email: whoward11@monroecc.edu

Faculty:

Wayne D. Howard

Registration:

<http://www.monroecc.edu/depts/recreg/howtoreg.htm>