

Special Topics in Geographic Information Systems: GIS Programming and Web Mapping
Geog 410/510 - Fall 2012 crn: 17114 (Geog410)/17115 (Geog510)

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Office Hours: W 10:30-11:30 am, or by appointment

Course Website: blackboard.uoregon.edu
Lecture/Lab TR 12-1:50pm - 442 McKenzie (SSIL Lab)

- Class Data and Exercises - K: drive
- Class Userspace - H: drive

Blackboard Class Website

Lecture notes, class handouts and information, and grades will be available through the Blackboard system located on the web at "blackboard.uoregon.edu". Your student email login will get you into Blackboard.

Grading: *late work will receive a grade reduction of 10% per day.*

40% Individual and Group Labs and Projects
10% Opinion/Methodology Short Papers
25% Exams (Take Home or In-Class)
5% Participation
20% Final Project/Presentation

Readings:

Online readings linked in this syllabus, on [blackboard](#). or linked in lecture notes

General Resources:

Introductory programming with Python -
[The Python Tutorial](#) ; [Python for non-programmers](#) ; [How to Think Like a Computer Scientist](#)

Schedule - Draft as of Sep. 25

Date	Lecture	Reading	Lab Exercise / Homework	Due
Tu: 9-25	Why use web-mapping or GIS programming at all? Class Introduction	What is ModelBuilder? ; A quick tour of ModelBuilder ; Essential ModelBuilder vocabulary ; Essential vocabulary: Executing tools in ModelBuilder ; A quick tour of advanced techniques in ModelBuilder ; Solving spatial problems with representation and process models ; A conceptual model for solving spatial problems ; Using the conceptual model to create a suitability map	Lab 1- Tutorial: Executing tools in ModelBuilder ; Tutorial: Creating tools with ModelBuilder Save the models created in a Lab 1 folder in your userspace	Week 2

Th: 9-27	Advanced Model techniques; Python and ArcGIS	What is Python? ; A quick tour of Python ; What is the Python window? ; Using the Python window ; Executing tools in the Python window ; Setting environments in the Python window ; Saving, loading, and recalling your work in the Python window ; Creating workflows using the Python window	Lab 1b - Exporting Python Scripts	
Tu: 10-2	ArcGIS inside of Python... Python Programming Introduction	What is ArcPy? ; Writing Python scripts ; Creating a new Python script ; Executing and debugging Python ; Setting breakpoints using Python ; Finding additional Python examples	Lab 2 - Introduction to Python / Automating a spatial analysis task.	Week 3
Th: 10-4	GIS programming	TBA	Group Presentation - Tasks to Automate	
Tu: 10-9	Loops and iterations	TBA	Lab 3 - Iterative Modeling	
Th: 10-11	loops and iterations continued.	TBA	Group Presentation - Spatial iterative models	
Tu: 10-16	Maps online and GIS - Introduction	TBA	Lab 4 - Introduction to Web Mapping	
Th: 10-18	Take-Home Test	No Class - Feel Free to use the lab to work on your Lab 4 and final project proposal.	Take Home Test Due by Friday, 10-19 5pm on Blackboard	
Tu: 10-23	Web Mapping	TBA	Lab 5 - Web Mapping with html	
Th: 10-25		TBA	Group Presentation - Overview/ Examples of web mapping	
Tu: 10-30	Mobile Mapping	TBA	Lab 6 - Mobile devices, location-based information and programming	

Th: 11-1		TBA	Group Presentation - Mobile Mapping Examples (Data delivery and collection)	
Tu: 11-6	Integrated programming / web / mobile	TBA	Final Project Begins	
Th: 11-8		TBA		
Tu: 11-13	Present and future issues	TBA	Final Project	
Th: 11-15		TBA		Short Paper due
Tu: 11-20		TBA	Final Project	
Th: 11-22	No Class	<i>Thanksgiving</i>	Take a break!	
Tu: 11-27	Project presentations	project outlines	Final Project	
Th: 11-29	Project presentations	project outlines	Final Project	Final Project due
Mo: 12-3	Final Test	8:00 Monday, December 3		