GEOGRAPHY 343/543: GEOGRAPHIC INFORMATION SYSTEMS 2

** <u>Schedule of Lecture Topics, and Laboratory Assignments</u> **

Spring, 2019

	<u>Lecture Topic</u>	<u>Laboratory</u>
<u>January</u>		
22 & 24	Course Overview & Introductory Comments Types & Techniques of Spatial Data Analysis Spatial Modeling & Applications The Relationship between Analysis & Modeling	-----
29 & 31	Developing and Building Spatial Models GIS User Interface & Display Management Systems ArcGIS Model Builder Components & Tools	1: Cartographic & Spatial Modeling (6)
<u>February</u>		
5 & 7	Raster-based Spatial Analysis with ArcGIS Conversion Cell Statistics & Boolean Operations Raster Calculator & Attribute Table Summaries	2: ArcGIS Spatial Analyst (6) - surface analysis
12 & 14	Global Positioning Systems Overview GPS High Accuracy Techniques Brief Review of Coordinate Systems	3: Differential GPS Positioning (6)
19 & 21	Differential GPS: Real Time & Post-Processing Comparison of GPS Equipment & Techniques Integration of GIS and GPS	*[no lab]*
26 & 28	Image Rectification and GPS Integration Integration of Remote Sensing Data w/GIS Digital Imagery for the Nation Program	4: Imagery Integration (6)
<u>March</u>		
6 & 8	Network Analysis & Geocoding Principles Spatial Socio-Economic Data Address Matching & Address Databases	5: Network Analysis & Geocoding (6)
12	Network Analysis & Geocoding Principles *Mid-term Exam Review Session*	6: Spatial Structures & Landscape Fragmentation (6)
14	**Midterm Exam**	
19 & 21	-- *Spring Break Vacation* –	

26 & 28	GIS & Retail Trade	7: Terrain Modeling (6)
	Geodemographics	Surface Rendering
	Landscape Structure & Morphology	
	Statistical Modules for ArcGIS	

April

2 & 4	Spatial Pattern Analysis using GIS	8: Resolution & Scale
	TIN/GRID Surface & Terrain Modeling	GRID Spatial
	Managing 3D Data & Surface Models	Modeling (7)
	3D Visualization with GIS	

9 & 11	Raster-Based Spatial Modeling	9: Designing & Utilizing
	Resolution & Scale Issues – Accuracy Variations	ArcGIS Server (5)
	ArcGIS Server Overview & Introduction	
	ArcGIS Online & ArcGIS Server Configurations	

16 & 18	ArcGIS Server Architecture & Services	10: Web App Builder
	Creating an ArcGIS Web Site	w/ArcGIS API (6)
	GIS Web Design & Presentation	

| 23 & 25 | Building GIS Data Layers for ArcGIS Server | *[open lab]* |
| | Programming Concepts & Customization | |

30 & (May 2)	Geoprocessing Scripts in ArcGIS (Python)	
	Automation and Geoprocessing Functionality	*[no lab]*
	Understanding the Basics of Python Scripts	

May

7 & 9	Incorporation of Customization & Environmental Settings	
	Geodatabase (MDB) ArcGIS Formats	*[no lab]*
	Geodatabase Relationships – Types & Rules	
	Final Exam Review and Summary	

Final Exam: Tuesday, May 14[h]; 10:15am – 12:15pm

Comments:

(1) The worth of each laboratory (in points) is denoted within the parentheses next to each lab title.

(2) This schedule is tentative and is subject to changes during the course of the semester.