UST 587 – GIS Applications

Spring 2017
Thursdays 6:00-9:50pm
UR 40

Instructor: Dr. Joanna Ganning
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Office hours: Tuesdays 2-4pm, Thursdays 11am-noon or by appointment

TA: Lydia Benish
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Availability: by appointment

Course Description
This course provides advanced GIS skills within the context of an applied class project. Students review both the technical/practical issues encountered as well as the conceptual implications of their projects. The course offers graduate students the opportunity to reflect on the skills learned during their GIS projects and provides an overview of ongoing development in the field.

Learning Outcomes
By the end of the semester, students will have the following skills:
1. The skills necessary to deliver professional grade cartographic work via web-based services
2. The ability to produce spatial databases conforming to professional standards of database design
3. The ability to construct highly customized maps
4. An advanced understanding of introductory spatial analysis tools
5. The ability to start, conduct, and present an advanced-level GIS-based project

Material Requirements
External storage: Unless you plan to bring a personal laptop to class, please bring either a USB memory stick/thumb drive, cloud-based, or external hard drive.

Texts: There is no required textbook for this class. Weekly readings, as needed, will be assigned via Blackboard.

Course Requirements
Lecture: Many weeks, lecture materials extending beyond the in-class modules, tutorials, or activities will also be delivered. Any supporting materials (slides, handouts, etc) will be provided via Blackboard.

Lab Assignments: The labs will be introduced during class and in some cases may be finished during lab time. You may find that additional time is needed. All lab assignments are due the following class. All assignments should be submitted via BlackBoard unless otherwise noted. All assignment instructions will be provided via Blackboard. While I encourage students to work together in class, assignments are to be turned in individually and should represent each student’s individual work; at no point should files be electronically shared or any parts copied or reused unless done during group work.
**Final Project:** The final project will build from the topics covered during the semester. Detailed information regarding requirements will be distributed around spring break.

**Grading**
The final grade will be determined as follows:

- Assignments: 40%
- Participation (marked (P) on schedule): 20%
- Final project: 40%

CSU uses the following letter grades. In the Levin College the letter grades follow this numeric scale:

- 94 through 100: A
- 90 through 93: A-
- 87 through 89: B+
- 83 through 86: B
- 80 through 82: B-
- 70 through 79: C
- 69 and below: F

The “I” grade (Incomplete) is given when the work in a course has been generally passing, but when some specifically required task has not been completed through no fault of the student. An “I” grade can be assigned by the instructor when all three of the following conditions are met:

1. Student is regularly attending/participating in the class and has the potential to pass the course;
2. Student has not completed all assignments and has stopped attending/participating for reasons deemed justified by the instructor; and
3. Student has notified the instructor prior to the end of the grading period

**Note:** Grammar, writing style, and presentation are evaluated in all written exercises. If you are unsure of your writing abilities, please use the CSU writing center. Grading includes the presentation of all tables, spelling, writing style, and grammar.

**Late Work, Special Needs and Circumstances**
I recognize that you are all busy with many demands on your time. Should life circumstances arise that make regular attendance unlikely or impossible, please consult the College’s Graduate Advisor or Assistant Dean for Student Services. They can direct you to the University’s available resources and help you to navigate moving forward with coursework.

Absences will be considered excused if they meet the University policy for excused absences or by instructor discretion, and excused absences will impact due dates at the instructor’s discretion and when consulted prior to the due date. Otherwise, there is a 10% penalty for each day an assignment is late. **Late final projects will not be accepted. Note that this means you will fail the class if the final project is late.**

**Americans with Disabilities Act**
Educational access is the provision of classroom accommodations, auxiliary aids and services to ensure equal educational opportunities for all students regardless of their disability. Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Office of
Disability Services at (216) 687-2015. The Office is located in MC 147. Accommodations need to be requested in advance and will not be granted retroactively.

**A Note on Misconduct**

According to University Policy 3344-21-02, “Academic misconduct refers to any fraudulent actions or behaviors that affect the evaluation of a student’s academic performance or record of academic progress.” This includes cheating, plagiarism, and tampering. For a full description of terms and procedures in the event that faculty discover academic misconduct, refer to [http://www.csuohio.edu/sites/default/files/3344-21-02_0.pdf](http://www.csuohio.edu/sites/default/files/3344-21-02_0.pdf).

While students should read the student code in its entirety, emphasis is additionally placed upon review of definitions and procedures involving disruption, harassment, and sexual misconduct, found at: [http://www.csuohio.edu/sites/default/files/3344-83-04%20-,%20eff.%208-17-15.pdf](http://www.csuohio.edu/sites/default/files/3344-83-04%20-,%20eff.%208-17-15.pdf).

I reserve the right to remove from the classroom any student who chooses to engage in disrespectful or disruptive behavior.

**Class Schedule**

**January 19:** Introductions and class overview  
Lab: Getting Started with ArcGIS (a refresher from previous classes)

**January 26:** Getting Started with Geodatabases

**February 2:** ESRI MOOC, Sections 1-3  
Assignment #1 due

**February 9:** ESRI MOOC, Sections 4 & 5  
Assignment #2 due

**February 16:** ESRI MOOC, Sections 6 & 7  
Assignment #3 due  
(P) In-class discussion

**February 23:** Getting Started with Geodatabase Topology  
Assignment #4 due

**March 2:** Working with Annotation  
Assignment #5 due

**March 9:** Getting Started with Cartographic Representations  
Assignment #6 due

**March 16:** *No class—Spring Break*

**March 23:** Python for Everyone
Assignment #7 due

**March 30:** Planning an Advanced Cartography Project
Assignment #8 due

**April 6:** Lecture: Spatial Data Mining
(P) In-Class Presentations: Final project proposal, final opportunity for feedback
Assignment: Finalize project geodatabase design

**April 13:** Work on maps for project
Assignment #9: Project geodatabase design due

**April 20:** Work toward merging documents, writing, maps, databases, etc.
(P) In-class presentations: Final maps, final opportunity for feedback

**April 27:** Group work on app-based presentation
Assignment #10: Final drafts due of all other elements of project

**May 4**—(P) Final Project Presentations
Lab: Group meetings and instructor consultation on app design

**FINAL PROJECTS DUE THURSDAY, MAY 11 AT 4PM VIA BLACKBOARD. LATE PROJECTS ARE NOT ACCEPTED. NOTE THAT THIS MEANS YOU WILL FAIL THE CLASS IF THE FINAL PROJECT IS LATE.**