XSAVI-702: Introduction to GIS Software: QGIS

Pratt Institute, ISC Building 003
Mondays and Wednesdays | 6:30pm – 9:30pm
October 22 - December 12, 2018
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Course Overview

Geographic Information Systems (GIS) are systems and a science that helps us organize, manage, analyze, and present the spatial dimension of information on maps. In this course we'll cover the basics of spatial theory, projections, and cartography, as well as the most commonly used software toolsets and geoprocessing techniques in the open source QGIS. Through practical examples you'll learn how to create data from scratch, geocode tabular data, and work with open data and census information, all with the goal of understanding spatial patterns related to environmental or urban issues. You'll also learn how to choose the best data sources and create professional quality map output.

Equipment and Software

Students should bring to class the computer they intend on using to do GIS work. Mac, PC, or Linux machines are all welcome. We will work through installing any necessary software as needed.

Class Format

Each class will consist of lecture interspersed with in-class assignments. We will spend roughly one half of class in lecture, introducing new concepts, and the remainder on the lab portion, where you will apply the new concepts. There will be roughly five out-of-class assignments, one weekly for the first five weeks, and a final project due at the end of class.

Attendance

Barring illness or an emergency, students are required to attend all classes. If you will not be able to attend class for any reason, please let the instructor know as soon as possible. Unexcused absences will adversely impact your grade in this course.

Course Homepage

All slides, in-class assignments, out-of-class assignments, and other resources will be posted to the course homepage throughout the session. It is your responsibility to check this page for assignment descriptions and due dates. You are welcome to open the slides and follow along with them during class.

Email

All students should join the Google Group.

Announcements from the instructor will be sent through the Google Group.

When contacting the instructor, please only use the instructor's email address (above) for personal situations such as when missing class or an assignment. If you have a technical question or a clarifying question about an assignment, please use the Google Group (email: savi702-fall2018@googlegroups.com) for the course. Technical questions and questions about assignments tend to be common (you won't be the only one asking the question), and this is also an opportunity to help a fellow classmate if you know the answer to the question.

When emailing about a technical issue, please include a specific description of the problem you are experiencing and a screenshot if applicable.

Final Project

Students will work on a final project on a topic of their choosing. A brief write up of the project idea and execution will be included with the final project as well as the finished maps.

Project schedule:

- **Week 4**: Proposed topic submitted and presented in class.
- **Week 6**: Progress reports presented.
- **Week 8**: Final presentations.

Grading

Students will be assessed for the quality of their assignments (50%) and final project (40%), and for class attendance (10%). While final grades are subject to interpretation by the instructor, grades will generally be assigned in the following manner:

- **High pass**: Completion of all assignment and final project at a high level of quality. Full attendance.
- **Pass**: Completion of all assignment and final project at a moderate level of quality. Full attendance.
- **Low pass**: Completion of more than 75% of assignments and the final project at a passing level of quality. Near full attendance.

Failing grades, while rare, are possible in the course. They will be given for 1) unexcused absences from more than 2 classes, 2) completing fewer than 75% of the in-class assignments, or 3) failure to complete the final project.

Detailed Course Schedule

Please note that the following course schedule is subject to change given the needs and advancement of the students. The outline below is a projection of the topics the instructor believes the class will cover over the duration of the class, but topics may be added or removed as necessary. Assignments will be created over the course of the semester.

Week 1 (10/22 & 10/24): GIS Fundamentals

Week 2 (10/29 & 10/31): Cartographic Principles

Week 3 (11/5 & 11/7): Data Visualization with GIS

Week 4 (11/12 & 11/14): Spatial Analysis

Week 5 (11/19): Creating and Editing Geometries
NO CLASS 11/21.

Week 6 (11/26 & 11/28): Working with Raster Data

Week 7 (12/3 & 12/5): More QGIS Plugins / Special Requests

Week 8 (12/10 & 12/12): Final Project Work and Presentations