**GIS Data in the Public Sector**

Spring Quarter, 2021 **ONLINE ONLY** – Course Syllabus

MPA Program at The Evergreen State College

Pre-Course Syllabus - Version 28 Feb 2021 - SUBJECT TO CHANGE

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**“Intensive Weekend” Schedule is Extended Over Two Weeks for Better COVID19 Online Delivery:**

- April 30 Friday 6-9 pm
- May 1 Saturday 9 am – Noon
- May 2 Sunday 1 pm – 4 pm
- May 8 Saturday 9 am to Noon
- May 9 Sunday 1 pm  4 pm (Presentations)

Location: This class will be taught using Zoom collaboration technology

Credits: 2

Textbook: There is no book for this class. Exercise documents will be provided through Canvas.

**Eligibility and Prerequisites**

This class is open to Evergreen graduate students. There are no prerequisites for this course. Working familiarity with the use of Excel spreadsheets is useful. An optional study exercise is available for students who would like a refresher on basic Excel skills.

**Program Description**

The purpose of this class is to teach students practical skills for accessing and exploiting spatial data for GIS (Geographic Information Systems) Students will learn to search, discover, import, and use geodata to perform spatial analysis and create story maps from the results.

GIS is a widely used information technology which supports and informs policy decisions made by public agencies. Maps – and interactive mapping apps – can provide an intuitive perspective on public information, by placing tables, demographics, resources, and communities in spatial relationships.

This survey is not a study of the science of conducting social surveys or scientific surveys. The assumption of this two-credit course is that students know about how to create the language of their surveys, and have access to appropriate advising and mentor relationships related to their own survey discipline.

This course is not affiliated with, nor responsible to, the college Institutional Human Research Review Board, or other oversight functions. This course is dedicated to helping students learn how to migrate their “paper” survey language and spatial queries – also concerning location, datetime, and other
properties - into a technological framework by which they can then conduct surveys using web pages and smart devices.

Students who desire to know more in advance about the standards and survey back office principles may read more at: xlsform.org. The XLS form is the basis for Survey123’s technology pattern of design.

Upon successful completion of this course, students will have acquired the skills for integrating publicly available demographic data in order to create their own demographic maps, infographic exhibits, and tabular datasets concerning places of interest in their research and work. In addition, students will be introduced to the basic skills for creation and publication of web maps and “story mapping” apps using ArcGIS Online, and Community Analyst (both softwares produced by Esri, Inc).

GIS Software Licensing and Computing Hardware

This course will rely on internet access to web-GIS resources from students’ home computers. Students can use any personal computer – with reliable internet bandwidth the software will run over the web to accomplish all of the labs in this course. Students will automatically be granted a software license to use the latest ArcGIS Online software, produced by Esri, Inc (https://www.esri.com/en-us/home).

Esri Software: ArcGIS Online is the web-GIS platform made by Esri, Inc that will be used for this course. ArcGIS is really a suite of web-based GIS software apps, which enables cloud computing. Thus no software installation is required for students to conduct the assigned GIS lab exercises, and create their final project exhibit(s).

Students should avoid using any separate ArcGIS licenses, if they already have any (possibly through another organization or state agency or using their own free ArcGIS subscription). The class and exercise materials will be shared through our “Geoduck” ArcGIS collaboration system, reserved for Evergreen students and faculty.

The ArcGIS license sign-in information will be sent to all students at the start of the course. Students can then create their unique password and profile - and maintain their ArcGIS software license for as long as the student continues learning at Evergreen State College.

Extra Computer Monitor – Highly Recommended: Students will benefit significantly from installing a second computer monitor with ~17-inch diagonal screen dimension (or greater). A second monitor will enable you to manage Zoom and Canvas and email and MS Office apps on one screen, while allowing the second screen to show the survey design, maps, charts, and other lab exhibits. Web-GIS technology involves a lot of menus and windows, and it is confusing to learn the tools efficiently, if using only one screen.

Internet Bandwidth: Students will require a sufficiently robust internet connection to conduct this course from their home or other off-campus site. If you have doubts about your connectivity and bandwidth, please run a network test (such as www.speedtest.net). If your “ping” rate is much over 75 ms (milliseconds) you may need to consider upgrading your internet capability. Typical download speeds for successful friction-free web-GIS are around 30 Mbps and upward.
**MS Office Software:** Students will need to be able to run Excel software to manage datasets assigned during this course. *Microsoft Office* is available (at no cost) to students through their my.evergreen.edu account. Please install Excel prior to the first class meeting. An Excel “refresher” course on the very basic functions of Excel software will be provided in a pre-class module through Canvas.

**Final Projects**
Following the conclusion of the intensive instruction class sessions, students will be assigned to complete a modest independent mapping project concerning a topic of their own interest. The final class meeting will be a presentation event where students will provide 5-10 minutes of description of their personal project map and findings. Many students enjoy making their final project a relevant addition to their CV or resume, to demonstrate the results of their GIS learning during this course.

**No Textbook**
There is no assigned textbook for this class. Readings may be assigned from short PDF’s, to be provided by the faculty through the Canvas content management system. This class is heavy on hands-on skills building and light on reading and theory. A light orientation to mapping theory and geography will be provided in the context of skills-development exercises.

**Canvas for Content Management**
Class content is managed through Evergreen’s implementation of the Canvas online system, for distributing class modules and required data and reading files, uploading assignment results, taking quizzes, participating in discussion boards, and performing evaluations. Please set your Canvas notifications to provide daily summaries of changes to the course content.

**Discussion and Questions and Office Hours**
Students are encouraged to work collaboratively. Please ask “how to” and other questions through the Canvas Discussion threads. Faculty will monitor the Discussion threads and provide answers and guidance. Experience shows that if one student has a question or problem, so do other students.

Faculty will offer Open GIS Lab hours on Zoom during the week following the intensive weekend class meetings. Instructor will provide technical guidance for students who need support during their final project creation. The precise times and locations for office hours will be determined based on an assessment of the needs of participating students.

**Awarding of Credit**
Class credit will be awarded based on in-class participation, and completion of the assigned exercises and presentation of the final project map. Partial credit will not be awarded.

Students will be required to write a short self-evaluation and a faculty evaluation upon completion of the course and submission of the final project.
Course Modules – Intensive Weekend Classes – Spring 2021

The following modules are arranged to provide a full ‘intensive weekend’ learning experience. The modules have been spread over two weekends in recognition of the constraints of Covid situation and the need to teach fully online through Zoom sessions.

Module 1 (Friday Evening Session 6 pm to 9 pm)
Introduction to Web Maps and Apps
Software Access: Students Connect to the “Geoduck“ ArcGIS Online
Presentation: ArcGIS Mapping Essentials
Lab: Create a Map with Layers, Symbology, Filters, Extents, Labels, Bookmarks, and an Interactive App

Module 2 (Saturday Morning Session 10 am to Noon)
Searching and Finding Data in Community Analyst Software
Software Access: Students Connect to Community Analyst
Lecture/Practicum: Discovering and Accessing Demographic, Census, and Business Data
Lab: Create a “Smart” Map with Filters on Multiple Variables

Module 3 (Sunday Afternoon Session 1 to 4 pm)
Generating Maps, Reports, and Infographics
Presentation/Demonstration: Sharing and Collaboration
Discussion: Sharing Maps and Apps; Security Considerations
Lab: Create a Photo Tour App from Public Photography; Create a Story Map

Module 4 (Saturday Morning Session 10 am to Noon)
Temporal Data
Presentation/Demonstration: Time in Interactive Visualization Apps
Supported Open Lab Session for Student Final Projects

Module 5 (Sunday Afternoon Session 1 to 4 pm)
Students Present Project Maps

Evaluations (To Be Scheduled)
Students must write Self-Eval and Faculty-Evaluation documents. Meetings will be scheduled with the instructor, of ~20 minutes duration, over Zoom.
Faculty Contact
Faculty email: ruthm@evergreen.edu

I use a cellphone: 360-790-2621. I typically do not pick up unknown numbers, so it may be necessary to schedule a phone call. Even better, we might prefer to schedule the call using a Zoom session, where screen sharing and other technical information exchange is more feasible.

Please start with Canvas for asking ‘how to’ and similar questions. If you have a technical question or a discussion in mind, keep in mind that other students – possibly all! – will likely have the same concern and will benefit from the discussion and potential resolutions of your posted questions.