

Using GIS in Public Service
W. Webb Sprague, Ph. D.
October 24-26 (2 units)

TESC MPA MISSION STATEMENT

“Be the Change”

Our students, faculty and staff create learning communities to explore and implement socially just, democratic public service. We *think* critically and creatively; *communicate* effectively; *work* collaboratively; *embrace* diversity; we *value* fairness and equity; *advocate* powerfully on behalf of the public; and *imagine* new possibilities to accomplish positive change in our workplaces and in our communities.

COURSE DESCRIPTION

Making maps and analyzing spatial data is useful in all phases of public service, from policy development to program implementation to final evaluation. For instance, the Office of Financial Management recently produced maps to show regional differentials in firearm death rates in Washington State; other examples abound. In this course, students will be introduced to the suite of skills necessary to create useful maps using Geographic Information Systems (GIS). Students will also learn how to find government demographic data sources and use them in thematic maps and other analytical products. The course will be taught workshop style, with students creating their own maps while following along with the instructor. We will use QGIS, a “Free and Open Source” (FOSS) alternative to proprietary GIS systems, to develop students skills, but we will show the parallels to ArcGIS as part of the course as well. An important component of the course will be discussions of the students’ and instructor’s use of GIS at work. The instructor received his Ph.D. from University of California, Berkeley in Demography in 2013; he works at Washington State Office of Financial Management, where he uses US Federal Census data and GIS daily.

LEARNING OBJECTIVES

- Find and download useful geographic and demographic data
- Explain the components of a map
- Understand the basic data model of Geographic Information Systems
- Be able to make a simple map using QGIS
- Use maps to support and expand a broader qualitative argument

EVALUATIONS

Evaluation will be based on student's discussion in seminar, their participation in workshop, and their final project -- a one page document with an embedded map and supporting text that makes an argument supported by the map.

ASSIGNED READING

Read *Mapping It Out* by Mark Monmonier. It is available plentifully online, for example:

<http://www.amazon.com/Mapping-Out-Expository-Cartography-Humanities/dp/0226534170/>

There are also some great, but optional, tutorials for QGIS linked at the end of the syllabus.

EXPECTATIONS

Format of Assignment Submissions: All papers will be submitted via email. All papers must meet assignment parameters and cite works using the Chicago citation style. All written work will be of high quality, grammatically correct, clear and without spelling errors. If you require it, please request resource writing assistance from faculty and/or contact the Graduate Writing Assistant. Check assignment details for each submission. Sometimes your faculty will ask you to work with the Graduate Writing Assistant; if so, you are required to do to the satisfaction of your faculty member.

Late assignments: No late assignments will be accepted without previous arrangement with the instructor.

Participation & Attendance: Students are required to attend each class meeting. Participation includes focusing on class content, being engaged in class and seminar, listening to others, taking notes, completing class interactive exercises, avoiding distractions, and listening to and dialoging with the guest speakers. If an absence is unavoidable, faculty must be notified prior to a class and/or seminar absence. After one absence per quarter, make-up work may be assigned at faculty discretion, case-by-case. Makeup work must be completed by the end of the quarter in question for course credit.

Use of Electronic Devices: this course is Canvas-based and mostly paperless. We understand, and expect, that you will need to use electronic devices in class. However, the class is also participatory and the learning community is dependent upon people being present to what is happening in class. This means that electronic devices should not be used for anything other than for class-related activities. Resist the siren call of all the ways in which your devices can distract you from what is going on in the classroom. We will ask people to put away their devices, except for note taking, for guest lectures. Please extend similar courtesies to the faculty when they are lecturing.

Credit: Students will receive **2** credits at the completion of each quarter if all course requirements have been satisfactorily completed to meet course objectives. No partial credit will be awarded. Incompletes may be offered on case-by-case basis. Refer to the MPA student handbook.

Academic dishonesty and plagiarism (i.e., using other peoples' work as your own, see [MPA Handbook](#) for more), failing to complete one or more assignments, completing more than one assignment late, or multiple absences may constitute denial of total credit. Students will be evaluated based upon their progress towards the learning goals, assessed from classroom, seminar, and assignment performance. Students at risk of losing credit will receive written notification prior to the end of the term.

Evaluation: Written self-evaluations and a faculty evaluation are required for credit at the end of each quarter, along with faculty evaluations of students. **Self-Evaluations are due Friday November 14, with the finished report.**

Multiculturalism & Diversity: Faculty and students work toward weaving multiculturalism and diversity throughout our learning in readings, lectures, seminar and group projects.

Learning Styles: Faculty endeavor to provide information in multiple formats: auditory, visual, kinesthetic, etc. However, style applications are limited to means appropriate for the classroom environment. Consult your seminar faculty to discuss learning style options or personal challenges.

Accommodations: are provided for any student who desires them through a working relationship with Access Services, the Writing Center and the Quantitative and Symbolic Reasoning Center. To request academic accommodations due to a disability, please contact the office of Access Services for Students with Disabilities (867-6348 or 6364). Information about a disability or health condition are regarded as confidential. Please refer to TESC's Students With Disabilities Policy [here](#).

Other Expectations of Students and Faculty: We commit to promoting a cooperative, supportive atmosphere within the community; give everyone opportunity for self-reflection and expression; use high standards in reading the text and preparing our papers, lectures, and comments in seminar; handle all disputes in a spirit of goodwill; respect our differences; and, discuss any problems involving others in the learning community directly with the individuals involved.

We abide by the [social contract](#), the [student conduct code](#) and the [non-discrimination policies and procedures at TESC](#). See the college's [Student Conduct webpage](#) for more.

All students are expected to support and contribute to a well-functioning MPA classroom learning community. Behavior that disrupts the learning community may be grounds for

disciplinary action, up to and including dismissal from the MPA program.

Guest Policy: Guests will not be allowed in the class without previous arrangement with the instructor.

Inclement Weather: In the event of bad weather or emergencies students should check with television, web pages, and radio stations for announcements of campus closures. Students can also call the main campus line 867-6000 to get the latest news regarding a campus closure or delay. Since many students in the program travel from relatively distant locations, faculty may decide to cancel program meeting even if campus is open. If we do this we will send an all-program email by 3:00 pm. If you've not already done so, sign up to receive alerts about campus closing or other emergencies [here](#).

Communicating with Each Other: Email and Canvas are our primary means of communication. You are responsible for checking your Evergreen email and Canvas regularly.

ASSIGNMENTS

1. **Write a 500 word summary and response** to *Mapping It Out* by October 17, 2014, submitted via email to the instructor
2. **Write a 300 word statement** that includes your career history (including unpaid experience), what you hope to do with the MPA program after you finish, your GIS experience (“none” is OK!), and how you imagine using GIS in the future, due October 17 submitted via email.
3. Follow the QGIS tutorial at <http://manual.linfiniti.com/en/index.html>, and **write a 200 word response** by October 17, submitted via email. You don't need to install QGIS and actually do the tutorial, though that would certainly be very useful.
4. **Present a single page with a map and supporting text** to the class, Sunday October 26. This presentation will serve as an example of using maps to support arguments
5. Edit the presentation and **submit a finished page (map with text)** by Friday November 14, via email. Include a self evaluation with this submission.

SCHEDULE

Friday October 17, reading and responses due by email.

Friday October 24, 6:00 am - 8:00pm, seminar room:

- “Round the room” introductions and discussion of how to use maps to support policy arguments
- Lecture on the basic model of GIS (vectors, tables, rasters, and layers)

Friday October 24, 8:00 am - 10:00 pm, computer room:

- Interactive demonstration of a simple GIS project, with LOTS of questions from students

Saturday October 25, 9:00 am - 11:00 am, seminar room:

- Lecture on basic cartography
- Lecture on data sources
- Lecture on geographic projections and coordinate systems
- Round-the-room discussion on designing student projects: Research question, data sources, sketch of map, rationale

Saturday October 25, 11:00 am - 6:00 pm, computer lab: Workshop with students building their projects, with assistance from instructor

Sunday October 26, 9:00 am - 10:00 am, computer lab: Proprietary (ESRI) GIS demonstration

Saturday October 26, 10:00 am - 1:00 pm, computer lab: continue student workshop

Sunday October 26, 1:00 pm - 6:00 pm, seminar room: student presentations and discussion. Ideas for next steps for students.

Sunday November 14, final project and self-evaluation due by email.

REFERENCES AND USEFUL LINKS

Monmonier, Mark. (1993). *Mapping It Out*. Chicago, IL: The University of Chicago Press.

<http://docs.qgis.org/2.2/en/> The official QGIS documentation.

<http://manual.linfiniti.com/en/index.html> The tutorial referenced above.

<http://www.qgistutorials.com/> An awesome collection of QGIS tutorials.

<http://www.openstreetmap.org/> A wikipedia-like approach to geographic data, hugely successful, and founded by a Seattle guy.

<http://prj2epsg.org/search> A tool for determining the projection of a map based on the ".prj" file contents.

<http://spatialreference.org/> A tool for finding projection information.