PSC 560-01D
GIS in Public Administration
Summer, First Session, 2016
Tuesdays May 17 & June 14th 6:00 – 9:00
(First/Last classes), Curry Building Room 247

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SYLLABUS

1. Focus of Course

This course will examine the application of geographic information systems (GIS) to solving problems in the public sector. Attention will be paid to both specific applications and to broader questions surrounding organization and policy impacts of this technology.

A portion of the course includes the hands on use of GIS software so that students will gain practical experience with the technology. The case study will familiarize the student with (a) sources of spatial data, (b) performance of basic analysis and (c) production of a map and associated report. Throughout the course we will be using Esri's ArcGIS Pro software. This is a new platform for Esri, the world's leading GIS software provider, and will provide access to cutting edge technology.

This is not intended to be a comprehensive course on GIS. Students interested in gaining an in-depth understanding of GIS should explore courses offered in the Geography Department. This course is intended to be a practicum on GIS.

The topics covered in this course are grouped into three categories:

1) An overview of GIS and applications of this technology in the public sector;

2) Legal, social, political and organizational issues associated with GIS; and,

3) Gaining practical experience within GIS a problem-solving context.

This course attempts to survey a wide range of topics and therefore does not cover any particular topic in great depth. The written assignment for the course is structured to allow students to focus their attention on the topics of greatest interest and relevance to them.

This course is designed for students in the MPA program, but it may be suitable for other graduate or advanced undergraduate students with a strong interest in the subject matter of the course. Those not in the MPA program who wish to enroll in the course should consult the instructor.

2. Format of the Course

The course employs a "blended" format. The first and last classes will meet on campus. The remaining course content will be delivered on-line. The on-line portion will rely heavily on on-line discussion of required readings. Students will be expected to make posts to the discussion board throughout the week.

During those weeks when the course meets on-line, the instructor will be available by appointment to meet with students regarding that week's case study exercises.

The case study using GIS software will be done entirely on-line. Students will download ArcGIS Pro and participate in weekly exercises. Each exercise is built upon the previous week's work and students will be expected to complete each week's exercise on time.

3. Prerequisites

No specific computer skills or knowledge are required for this course, although it is assumed that students are acquainted with basic computer applications, including word processing, spreadsheet use, and the Windows environment. You should also be familiar with Canvas.

To participate in this course, you must have access to a Windows based PC that will run the ArcGIS Pro software. If you have an Apple Macintosh, you should determine if ArcGIS Pro
software will run under your preferred solution for running Windows application (Boot Camp, virtualization software, etc.). This is critical to check up front -- before the class begins. If you do not have the capability to run ArcGIS Pro, then you will not be able to complete the required course exercises. You can learn more about ArcGIS Pro at http://www.esri.com/en/software/arcgis-pro.

4. Readings

Required and recommended readings have been assigned from the following books (all are available on line via eReserve):

Carr, *"Geographic Information System Applications in the Public Sector,"* Modern Public
        Information Systems, IGI Publishing: Hershey, 2007
Steiniger, et. al., *"An Overview of Current Free and Open Source Desktop GIS Developments,"*
        International Journal of Geographic Information Science, Vol. 23, No. 10, October 2009
Sui, et. al., *"The Convergence of GIS and Social Media: Challenges for GIScience,"* International
        Journal of Geographic Information Science, Vol. 25, No. 11, November 2011
Sui, *"Opportunities and Impediments for Open GIS,"* Transactions in GIS, Vol. 18, No. 1, 2014
        "The Illustrated Guide to Nonprofit GIS and Online Mapping," http://maptogether.org,
        2/23/2010

5. Assignments and Grading

The course grading will consist of the following:

1) A short research paper (4 – 5 pages) on that analyzes some application of geographic information systems relative to the field of public administration. Details on this assignment will be distributed separately. Assignment due on June 10th.

2) A short memorandum (2 - 3 pages) that summarizes the case study's application of GIS. This report will include both management recommendations and a map coming out of our case study. Assignment due June 18th.

   3) Each week will include exercises associated with our case study.

4) Class participation. You will be expected to discuss the assigned readings, your papers and professional experiences.

Grading:
Research Paper	25%
Case Study Memorandum	25%
Weekly Case Study exercises	25%
Class participation	25%

Papers and exercise deliverables are due on the dates specified. Assignments that are turned in late will be penalized.

Research sources:

The research paper will require you to use diverse research sources. You should use the course readings as a starting point. They should give you important background information. You undoubtedly will have to rely on recent articles, which could be located in any number of periodicals. I assume that all of you are familiar with the electronic search options available through the Jackson library web site and are comfortable using them; if not, you should consult with one of the reference librarians. Additionally, you should consider interviewing experts in the local area for information, especially if your research topic is a case study involving a local government or agency. I may be able provide local contacts upon request.

6.   Outline of Topics and Reading Assignments

This course will meet on two Tuesday evenings from 6:30 to 9:30 in Curry Room ?, on the following dates: May 17th and June 14th. The intervening three weeks of the course will occur on-line.

May 20: Class #1 -- Course Introduction (On Campus)

Topics
> Module 1 – Course Overview
> Module 2 – Introduction to GIS Technology
> Module 3 – Exploring the case study project
> Module 4 – Downloading and installing ArcGIS Pro
> Module 5 – Downloading and installing PDF Writer

Required Reading: None

Exercises:
> Exercise 1: Installing ArcGIS Pro
> Exercise 2: Installing Bullzip PDF Writer
> Exercise 3: Your first .pdf map showing County Commissioner districts

Deliverable on 5/22

May 24: Class #2 -- Applications of GIS (On-line)

Topics
> Module 7 – Public and Non-profit applications of GIS
> Module 8 – Types and Sources GIS data

Required Reading:
Carr, *"Geographic Information System Applications in the Public Sector," pp. 293-301*
MapTogether, *"The Illustrated Guide to Nonprofit GIS and Online Mapping,"pp. 8 – 14, 25-39*

Exercise 5
- Download US Census demographic data
- Join attributes to features
- Create Thematic .pdf map of household median income by census tract

Deliverable on 5/29

May 31: Class # 3 – Future Directions (On-line)

Topics
> Module 9 – Future Directions (GIS On-line, Open GIS, Social Media)
> Module 10 – Geocoding

Required Reading:
> Steiniger, et. al., *"An Overview of Current Free and Open Source Desktop GIS Developments," pp.*
1345-1353, 1363-1367

Exercise 6
- Geocode garden locations (Texas A&M Geocode Service)
- Create .pdf Map showing garden locations and median household income

Deliverable on 6/5

June 7: Class #4 -- Analysis (On-line)

Topics:
> Module 11 – Analysis tools
> Module 12 – Cartography

Required Reading:
> Sui, et. al., *"The Convergence of GIS and Social Media: Challenges for GIScience," pp. xx-yy*

Exercise 7
- Create .pdf map for management report
- (Non-profit parcels w/in lower income census tracts and outside of buffers)

Deliverable on 6/15

Research Assignment: Research paper on the application of GIS
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June 14- Class #5 -- Course Conclusion (On Site)

Topic:
      Module 13 – Organization, Management and Legal issues surrounding GIS

Required Reading:
      Carr, *"Geographic Information System Applications in the Public Sector," pp. 303-310*
      Sui, "Opportunities and Impediments for Open GIS"

Memo Assignment (Due 6/15): Management memorandum w/ map (above), including recommended community garden sites.