Geographic Information Systems (GIS) in Public Policy

UAPP 652-010

SYLLABUS – Fall Semester, 2013

Class Location and Time

Pearson Hall, Room 203 on Fridays, 11:15 a.m. – 1:10 p.m.

Class dates: October 4, 11, 18, 25, and November 1, 8, 15.

Instructor

	Andrew Homsey
Office:	Water Resources Agency- DGS Annex (behind Penny Hall)
Email:	ahomsey@udel.edu
Phone:	302-831-4932
Office Hours:	By Appointment

Class Mailing List: http://www.udel.edu/pobox

Web Page: http://sakai.udel.edu

GIS@UD: http://maps.rdms.udel.edu/gis/index.php

Pearson lab schedule: http://www.udel.edu/Geography/roomsched203.html

Objectives of Course

To provide the student with the knowledge of basic ArcGIS ArcView tools through hands-on experience in implementation and design of a simple GIS and Public Policy project.

Prerequisites

Basic skills for using a Microsoft Windows-based PC. Interest in application of geospatial technology to research methods.

Assignments and Grading

Your grade will be based on your completion of in-class lab assignments, homework assignments and a final paper and presentation.

       Class participation, exercise completion – 30%

       Homework assignments – 20%

       Final paper and presentation – 50%

<u>**Course Outline**</u>

October 4: **Introduction Geospatial Technologies**
  Instructor and Student Introductions
Handouts: Syllabus
  Shapefile Technical Description
  ESRI Virtual Campus Course
    Learning ArcGIS Desktop
Lecture: Geographic Information Systems (GIS) in Public Policy
Lab: GIS Basics: An Introduction to ArcGIS
Assignment: Please read http://erg.usgs.gov/isb/pubs/gis_poster/ Poster Side 1, Poster Side 2
  Complete module one of Learning ArcGIS Desktop course by Oct 18th.
  Find a website that presents an interesting map or online mapping application.
  Prepare a very short summary, including why you chose it.
  http://webdesignledger.com/inspiration/16-inspiring-examples-of-interactive-maps-in-web-design, http://www.gislounge.com/maps/

October 11: **GIS building blocks: data and basic GIS processing**
Lecture: Where do the data come from, and how do I use them?
Handouts: Information on Final Paper and Presentation
  Five Steps in Doing a GIS Analysis
  Lecture material, on-line data sources list
Lab: Use a real-life situation to explore the basic GIS processing steps
Assignment: Read choropleth map, census data, and map projection references on class website.
  Research and select topic. Submit your research question and describe data you
  will need, and where you will get these data. ***Begin collecting data***.

October 18: **Working with census data, cartography**
Lecture: Map projections, cartography, census information, TIGER data
Handouts: Projections, datums
Lab: Obtaining and using census data
  Census exercise
Assignment: Cartographic mapping project (due no later than Nov. 8th),
  Details of Final GIS project (one paragraph)

October 25: **Intro to remote sensing and image processing**
Handouts: GPS, multispectral imagery, image processing techniques,
Lecture: Intro to Remote Sensing and Image Processing
Lab: Image classification/land use photointerpretation. Using raster data: Watershed
  delineation, pollution load calculation.
Assignment: OPTIONAL: Short report on one satellite sensing system: who, what, how, why
  (Landsat, SPOT, ASTER, AVIRIS, IKONOS)

November 1: **Open Source, web-based mapping, spatially enabled technologies**
Handouts: Web-based and open source GIS, the new geospatial intelligence
Lecture: Open Source GIS, ArcGIS Online, GPS, Google, ArcGIS, Web services.
Lab: Google Sketch-up Demo. ArcGIS Online exercise.
Assignment: Readings in remote sensing from assignment folder list

November 8: **Open class: Make up missed or incomplete labs, discussion, work on
  presentations/papers**

November 15: **Final Presentations**

Final Papers Due by Friday, November 29th.