

General Information

Instructors:

Carrie Dolan, MPH

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Office hours: by appointment

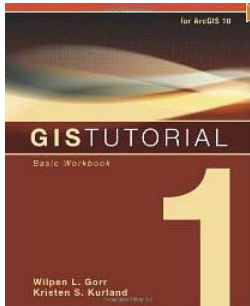
Class meetings: Tuesdays, 5:30-7:45 PM

Course Description

The course contents will provide an introduction to geographic information systems (GIS) and its application to Public Policy. This course is appropriate for students considering careers in the public policy arena.

Required Text

Gorr and Kurland. GIS Tutorial 1: Basic Workbook for ArcGIS10, Fourth Edition



You can purchase this book directly from ESRI, but it is much cheaper on sites like Amazon.

Course Objectives

By the end of the course the student will have an introductory exposure to:

- Database management for spatial analysis
- Format data for use in spatial analysis
- Creation of data layers
- Basic spatial analysis techniques
- Basic navigation of ESRI, a leading GIS software
- Understand presentation principles and mapping elements

Final Product

Slide deck including all of the homework assignments to serve as an example of the work performed throughout the class.

Class attendance

Regular attendance in class is vital for success in this class, especially in view of the fact that there are a total of only 6 class meetings. If you will be absent from class for any reason, please contact your instructors via email prior to the class meeting.

Blackboard

Announcements, chapter PowerPoint presentations, exercises, and supplementary materials will be available on Blackboard. Check in regularly to keep abreast of latest course information. Emails sent from Blackboard will default to your W&M email account, so be sure to check it even if you routinely use other accounts. Student grades will be posted at the grade center on Blackboard.

Grading

Course grades will be determined as follows:

A	100-92
A-	91-90
B+	89-87
B	86-82
B-	81-80
C+	79-77
C	76-72
C-	71-70
D	69-60
F	59 & below

Additional Resources

Free screen capture software:

- Windows: <http://www.picpick.org/en/>
- Mac: <http://evernote.com/skitch/>

Class content and Homework assignments

Homework assignments will all be posted to Blackboard and are due on the posted date by midnight

<u>Class date/description of materials</u> <u>Deliverables/Requirements</u>	Percent of Grade
Attendance/Participation for all classes	10%
<p><u>Class 1. Jan 27th: Introduction to GIS & Navigation</u> <i>Professors Dolan and Dulin</i></p> <p>Review Syllabus and discuss class expectations Expect due diligence on homework submissions – improvement over time</p> <p><i>Dulin:</i> Tutorial 1-1 Open and save a map document Tutorial 1-2 Working with map layers Tutorial 1-3 Navigate in a map document Tutorial 1-4 Distances Tutorial 1-6 Select Features Tutorial 1-7 Working with attribute tables Tutorial 1-8 Label features</p> <p>Lab: Assignment 1-1 if extra time</p> <p><u>Homework 1 (due February 2nd)</u> Turn in primary learning goals for the class by February 2nd. Read and perform exercises 1 & 2 in AidData project</p>	12.5%
<p><u>Class 2. Feb 3rd: Databases and Joining</u> <i>Professor Dolan</i></p> <p>Any question around homework? Discuss student’s expectations of the class</p> <p>Tutorial 4-1 Build a file geodatabase Tutorial 4-2 Use ArcCatalog utilities Joining exercise using State Data</p> <p>Lab: Additional joining exercises with county, and tract data:</p> <ul style="list-style-type: none"> ▪ Income by County in Virginia ▪ Unemployment rate by Census Tract <p><u>Homework 2 (due February 9th)</u> Read and perform exercises 3 & 4 in AidData project</p>	12.5%

<p><u>Class 3. Feb 10th: Table Operations and Map Design</u> <i>Professor Dolan</i></p> <p>Tutorial 4-3 Modify an attribute table Tutorial 4-4 Join tables Tutorial 2-1 Create choropleth maps Tutorial 2-2 Create group layers Tutorial 2-4 Create choropleth maps using custom attribute scales Tutorial 2-5 Create point maps</p> <p>Lab: Assignment A2-1 if extra time</p> <p><u>Homework 3 (due February 16th)</u> Read and perform exercises 5 & 6 in AidData project</p>	<p>12.5%</p>
<p><u>Class 4. Feb 17th: Geocoding and Working with layers</u> <i>Professor Dulin</i></p> <p>Geocode using Virginia hospitals Tutorial 8-1 Select by Attribute Tutorial 8-2 Clip features Tutorial 8-3 Dissolve feature Tutorial 8-4 Merge features Tutorial 8-5 Intersect Layers Tutorial 3-2 Map Layouts</p> <p>Lab: Tutorial 7-1 Geocode data by Zip code if time Tutorial 7-2 Geocode data by street address Tutorial 7-3 Correct source addresses using interactive rematch Tutorial 7-4 Correct street reference layer addresses</p> <p><u>Homework 4 (due February 23rd)</u> Read and perform exercises 7 & 8 in AidData project</p>	<p>12.5%</p>

<p><u>Class 5. February 24th: Advanced Polygon Operations</u> <i>Professor Dolan & Dulin</i></p> <p><i>Dolan:</i> Tutorial 4-5 Create centroid coordinates in a table Tutorial 4-6 Aggregate data Tutorial 5-2 Work with map projections Tutorial 9-1 Buffer points for proximity analysis</p> <p><i>Dulin:</i> Tutorial 9-2 Conduct site suitability analysis</p> <p>Lab: Assignment A4-1 if extra time Set projections for United States: Pages 157 - 159</p> <p><u>Homework 5 (due March 2nd)</u> Read and perform exercise 9 & 10 in AidData project</p>	<p>12.5%</p>
<p><u>Class 6. Mar 3rd: Advanced Raster operations</u> <i>Professor Dulin</i></p> <p>Convert Graphics to Feature Tutorial 11-1 Process raster map layers Tutorial 11-2 Create a hill shade raster layer Tutorial 11-3 Make a kernel density map Tutorial 11-4 Extract raster value points</p>	<p>12.5%</p>
<p><u>Final Project (due Mar 6th) <u>Spring break start on the 7th, plan accordingly</u></u></p> <p>Submit full slide deck of all homework assignments, revised from prior submissions</p>	<p>15%</p> <p>Dolan and Dulin</p>