

## **Syllabus**

**GIS and Health**

**INTR 490-04 Spring 2012**

### **General Information**

Instructor: Carrie Dolan, MPH

Office hours: by appointment

Office location: Old Dominion Basement 5A/5B

Email: [cbdolan@wm.edu](mailto:cbdolan@wm.edu)

Telephone: 221-2079

Class meetings: Tuesday/Thursday 9:30-10:50AM

### **Course Description**

This course will focus on the investigation of spatial patterns and the use of GIS to understand and detect areas at higher risk of disease. Both core concepts of public health and fundamental GIS concepts will be introduced. It will include epidemiological and elementary biostatistical concepts in order to examine disease distribution across populations. Through lecture and hands-on application of GIS students will learn to critically evaluate the relationship between disease and the environment. Examples of topics included in the course are working with map projections, census data, address geocoding, proximity analysis, spatial analysis and general epidemiological assessment. An understanding of the concepts outlined in this course will be highly dependent on successful completion of both in class exercises and out of class projects.

**Class attendance** Regular attendance in class is vital for success in this class, especially in view of the fact that ½ of the course is labs that will be started in class. If you will be absent from class for any reason, please contact your instructor via email prior to the class meeting.

### **Recommended text**

Cromley, Ellen and McLafferty, Sara. (2012). *GIS and Public Health 2nd Edition*. New York: The Guilford Press.

### **Required text (FREE)**

DiBiase, D. and others (2011). *Nature of Geographic Information*. The Pennsylvania State University. <http://natureofgeoinfo.org>.

### **Blackboard**

Announcements, weekly presentations, labs, projects, 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**

The understanding of concepts learned in this class will best be assessed through weekly labs and 3 major projects. It is my expectation that through both labs and projects you demonstrate an understanding of the fundamental concepts as well as the technical skills required to create the assigned output.

Course grades will be determined as follows:

15% Projects (3)

5% Labs (11)

A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D	60-69
F	59 & below

**Weekly Labs** Students are ENCOURAGED to work collaboratively on the lab solutions and will have one week to complete the final submission. Each student must submit her/his individual narrative and output by the beginning of class. Late submissions will not be accepted unless arrangements for this are made PRIOR to class.

You will have class time to begin the lab. You should use this time to review the assignment, find the appropriate data to start the lab, and ask technical questions. Depending on your level of skill you may complete labs faster than other students. If you find that the labs are not challenging enough make sure you have explored all of the possibilities including your map cartography.

	Projects	Due date
One	New or Review?	2/1
Two	Spatial Analysis	3/22
Three	Show me the Money	4/26

	Labs	Due date*
1	Scales and Transformations Lab	2/9
2	Spatial Data for Public Health Lab	2/16
3	Mapping Health Information Lab	2/23
4	Analyzing Spatial Clustering of Health Events Lab	3/1
5	Analyzing Environmental Hazards Lab	3/8**
6	Analyzing the Risk and Spread of Infectious Diseases Lab	3/22
7	Exploring the Ecology of Vector-Borne Diseases Lab	3/29
8	Analyzing Access to Health Services Lab	4/5
9	Locating Health Services Lab	4/12
10	Health Disparities Lab	4/19
11	Public Participation GIS and Community Health Lab	4/26

\*Labs are due by the start of class on the specified day. No late labs will be accepted.

\*\*Yes, I know this is Spring Break. This lab will be a short one. The goal will be to finish it in class on 3/1, but am giving you the week just in case you want it.

Week	Date	Weekly Schedule (Spring 2012)	Text*
1	1/19	Introduction to syllabus and each other	
2	1/24	Project One	
	1/26	Project One	
3	1/31	Scales and Transformations	DiBiase, D. and others (2011). <i>Nature of Geographic Information</i> . The Pennsylvania State University. <a href="http://natureofgeoinfo.org">http://natureofgeoinfo.org</a> .
	2/2	Scales and Transformations Lab	DiBiase, D. and others (2011). <i>Nature of Geographic Information</i> . The Pennsylvania State University. <a href="http://natureofgeoinfo.org">http://natureofgeoinfo.org</a> .
4	2/7	Spatial Databases for Public Health	Chapter 3
	2/9	Spatial Data for Public Health Lab	
5	2/14	Mapping Health Information	Chapter 4
	2/16	Mapping Health Information Lab	
6	2/21	Analyzing Spatial Clustering of Health Events	Chapter 5
	2/23	Analyzing Spatial Clustering of Health	

		Events Lab	
7	2/28	Analyzing Environmental Hazards	Chapter 6
	3/1	Analyzing Environmental Hazards Lab	
8	3/6	SPRING BREAK	
	3/8	SPRING BREAK	
9	3/13	Analyzing the Risk and Spread of Infectious Diseases	Chapter 7
	3/15	Analyzing the Risk and Spread of Infectious Diseases Lab	
10	3/20	Exploring the Ecology of Vector-Borne Diseases	Chapter 8
	3/22	Exploring the Ecology of Vector-Borne Diseases Lab	
11	3/27	Analyzing Access to Health Services	Chapter 9
	3/29	Analyzing Access to Health Services Lab	
12	4/3	Locating Health Services	Chapter 10
	4/5	Locating Health Services Lab	
13	4/10	Health Disparities	Chapter 11
	4/12	Health Disparities Lab	
14	4/17	Public Participation GIS and Community Health	Chapter 12
	4/19	Public Participation GIS and Community Health Lab	
15	4/24	Project Work	
	4/26	Project Presentations	

\*Text chapters correspond to the following book unless otherwise specified. Cromley, Ellen and McLafferty, Sara. (2012). *GIS and Public Health 2nd Edition*. New York: The Guilford Press.