PO 203: GIS I
Spring 2014 Syllabus
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Office Hours: M: 11-12, 1-2; W: 11-12, 1-4; F: 11-12, 1-2, and 3:15-4:15

Course Description & Objectives:

GIS I will teach students basic tangible technological skills of geographic information systems (GIS). This course is more than just an introduction to a technical skill; it also integrates geospatial concepts and theories with real-world problems. By the end of the course, successful students will be able to demonstrate:

- A basic understanding of the inter-relationship of cartography, data base management, data sources and types of data;
- An understanding of the concepts surrounding space and geography
- Basic skills to locate or collect, manipulate, and analyze spatial data
- Knowledge of GIS trends in the broader context of information technology; and
- The ability to communicate geospatial information in cartographic form.

Some of the major topics of this course include:

- What is GIS?
- The nature of GIS data in a globalized context (thinking beyond America)
- Understanding scale, coordinate systems, and datums
- Thematic mapping
- Basic elements of spatial analysis
- Geocoding
- Web-based GIS

Required Texts/Software:

The following texts are required for this course:

Gorr, Wilpen R., and Kristen S. Kurland. 2013. *GIS Tutorial, Workbook for ArcGIS 10.1*. ESRI Press.
Must be new

Lo, C.P., and Albert K.W. Yeung. 2007. *Concepts and Techniques of Geographic Information Systems, Second Edition*. Prentice Hall, Inc.
Can be used or new

Any other assigned readings will be provided by the professor via the class Blackboard page.

Grades:

Your grade for this course will be based on how you do on course projects, participation, the mid-term, and (of course) the final exam.

Quizzes/Participation:	10%
Labs:	20%
Mid-term Exam:	20%
Final Exam:	25%
Term Project:	25%

Quizzes: There will be four quizzes based on the course readings assigned for that day. So, if you're assigned 10 pages to read, all questions will come from those 10 pages. Questions will be multiple choice, true/false, or short answer. The purpose of the quizzes is twofold: 1) To make sure you are reading the course text; and 2) To prepare you for my style of exams. I reserve the right to disseminate additional quizzes if I don't think you are reading the assignments!

Labs: Each week you will have lab assignments based on the material we are going over in class. These assignments can generally be found in the Gorr & Kurland text. Make sure you follow directions closely and pay attention to the hints they provide. Lab assignments are due the following class period from which they are assigned.

Exams: Both exams will carry an in-class written component as well as a take-home element. The in-class component will consist of multiple choice, true/false, and short answer questions based on the readings and course lectures. The take-home element will consist of you making a map based on the skills you learn throughout the course.

Course Project: This is your chance to be a map-maker! You, along with up to 1 or 2 additional classmates, will attempt to tackle a geographic problem of interest to you. You will collect and analyze data, and present your findings to the class.

The project will consist of a paper, which will include maps. Successful papers will incorporate the following elements:

- A strong thesis statement;

- A strong justification for the necessity of your project;
- Evidence to support any and all empirical statements;
- At least 3 maps;
- A conclusion; and
- Page numbers.

All projects will be turned in via Blackboard. The maximum length is 15 pages *including* tables, figures, maps, and bibliography (12-sized font). While there is no page minimum, be aware that the geographic problem you choose must be real. As such, a serious investigation of the problem will require significant thought and attention to detail.

The schedule for the course project will be as follows:

Course Proposal: You (and your group) will turn in a 1-page proposal in which you will detail the geographic problem you wish to address and why it is worthwhile. When justifying a project, be sure to provide statistics and citations from experts in that area. For example, if you're interested in analyzing medical diagnoses in rural Honduras, you may note the dearth of available information on infectious diseases in that country as well as some health statistics for that country. Proposals are due at the beginning of class on February 8.

In-Office Meeting: During the week of March 31, you and your group must schedule a time to meet with me in my office to discuss progress on your paper. While I don't expect a finished product, you should at the very least have your data collected (or downloaded). You should also have some preliminary maps prepared for my purview.

Statement of the Attendance Policy:

Excused absences should be arranged with the Professor in advance whenever possible. Students with three unexcused absences will lose ten percent (10%) of their attendance and participation grade (see pp. 99-101 in the JCU undergraduate bulletin for what constitutes an excused and an unexcused absence). Since attendance and participation constitute 10% of the student's total grade, losing ten percent of a participation grade equals losing 1 point on a student's final grade. The fourth and every subsequent unexcused absence will result in a loss of an additional 10% of the attendance and participation grade.

An attendance sheet may be distributed on any class day. Students are responsible for making sure that they have signed the attendance sheet on that day. Students who are not on the attendance sheet for that day are considered to be absent whether or not they actually attended class.

Academic Honesty:

"Plagiarism, defined as representing the work of others as your own, is the most serious academic offense there is. It ranges from the improper use of quotation marks, to copying the work of others in whole or in part, to hiring someone else to do one's work. Please note that intent is not required to be guilty of plagiarism. The penalty for this ranges from the loss of points to F for the course, to expulsion from the university" (cited from Dr. Sobisch's Research Methods syllabus). Students who plagiarize and students who aid in plagiarism will be given a 0 on the plagiarized assignments and their cases will be remanded to the Dean for further disciplinary action.

Students with a Disability:

In accordance with federal law, if you have a documented disability (Learning, Psychological, Sensory, Physical, or Medical) you may be eligible to request accommodations from the Office of Services for Students with Disabilities (SSD). Please contact the Director, Allison West at (216) 397-4967 or come to the office located in room 7A, in the Garden Level of the Administration Building. Please keep in mind that accommodations are not retroactive so it is best to register at the beginning of each semester. Only accommodations approved by SSD will be recognized in the classroom. Please contact SSD if you have further questions.

The New Anti-Bias Campaign Statement:

At John Carroll University, we are committed to fostering a respectful and inclusive campus community. Incidents of bias which are intentional or unintentional actions against someone on the basis of an actual or perceived aspect of their identity, including actions that occur in classrooms, can and should be reported on the Bias Incident Reporting Form, accessible at http://sites.jcu.edu/bias/. Questions about bias can be directed to members of the Bias Response Team: Lauren Bowen, Associate Academic Vice President (bowen@jcu.edu), Bud Stuppy, Director of Human Resources (cstuppy@jcu.edu) or Danielle Carter, Director of the Center for Student Diversity and Inclusion (dcarter@jcu.edu).

Course Schedule (Subject to Change):

Since we meet two days a week, the basic template for the class is to discuss the theory/reasoning behind a GIS concept on Monday, then use Wednesday as a "lab" day.

Assigned readings should be completed **prior to class**. Labs listed will be **due the following class**.

Week 1: Course Introduction, Introduction to GIS

Jan 13: Course Introduction

Jan 17: Introduction to GIS

Read: Monmonier (2005)

Lab: Gorr & Kurland (G&K) Appendix D

Week 2: GIS Tutorial 1

Jan 20: **No Class: MLK Day**

Jan 24: GIS Tutorial 1

Lab: G&K Assignments 1-1 and 1-2

Week 3: The Foundation: Maps, Coordinates, Projections and Georeferencing

Jan 27: Maps and Geospatial Data

Read: L&Y 22-49

Quiz 1

Jan 31: GIS Tutorial pages 170 – 182

Lab: US Albers Equal Conic Map (create)

Week 4: Nature of GIS Data

Feb 3: Raster & Vector Data

Read: L&Y 83-104

Feb 7: GIS Tutorial 3

Lab: G&K Assignments 3-1 and 3-2

Week 5: Thematic Mapping

Feb 10: Topographic and Thematic Mapping

Read: L&Y 50-63

Course Project Proposals Due

Feb 14: GIS Tutorial 2

Lab: G&K Assignments 2-1 and 2-2

Week 6: Geodatabases

Feb 17: Geodatabses, Finding Data

Read: L&Y 78-82

Monmonier (1996), Chapter 7

Quiz 2

Feb 21: GIS Tutorial 4

Lab: G&K Assignments 4-1 and 4-2

Week 7: Midterm Exam

Feb 24: Catch-up and Review

Feb 28: **Midterm Exam**

No Class Week of March 1 (Spring Break)

Week 8: Spatial Analysis – The Basics

March 10: Query, Buffering, Extraction

Read: L&Y 10.1, 10.2, 10.8, 10.10

March 14: GIS Tutorial Pages 271-289

Lab: G&K Assignments 8-1 and 8-2

Week 9: Vector Data

March 17: Vector Geoprocessing

Read: L&Y 6.1, 6.2, 6.4, 6.5, 6.6

March 21: GIS Tutorial 5 (**not** including pages 170 – 182)

Lab: G&K Assignments 5-1 and 5-2

Week 10: Digitization

March 24: Digitization

Read: L&Y 6.3

Quiz 3

March 28: GIS Tutorial 6

Lab: G&K Assignments 6-1 and 6-2

Week 11: Geocoding

March 31: Geocoding

Read: L&Y 6.3.10

In-Office Meetings for Course Project (Throughout the week)

April 4: GIS Tutorial 7

Lab: G&K Assignments 7-1 and 7-2

Week 12: GIS of the Future

April 7: GIS Issues and Prospects

Read: L&Y 11.1-11.6

Quiz 4

April 11: GIS and the Web

Lab: Geocommons OR Scribblemaps Assignment

Week 13: *Applied GIS*

April 14: Redistricting 1

April 16: Redistricting 2

Lab: Re-Redistricting Ohio (Dave's Redistricting App)

Week 14: *Course Projects*

April 22: In-Class Work Day

April 25: Course Projects

Class Projects Due (Class Discussion)

Week 15:

April 28: Course Projects, Review for Final Exam (Last day of class)