GTECH 380/722
Analytical and Computer Cartography
Hunter College, CUNY
Department of Geography

Spring 2009
Wednesdays 5:35PM to 9:15PM

Instructor: Doug Williamson, PhD
Email: Douglas.Williamson@hunter.cuny.edu

Text (REQUIRED):

✓ Additional Readings to be provided in class and electronically.

Supplemental Readings (NOT required):
Selected readings from the following texts may be used, but it is not necessary to purchase these.


Comes with a 120-day trial version of ArcView 9.3, which will be useful for class assignments. If you have a PC running Windows 2000, NT, or XP, you should install the software on your own computer. If not, the GIS lab will be available for you to do your assignments.

Relevant Books (NOT required):

Course Overview:
GTECH 380/722 is designed as an introduction to modern cartographic theory and conventions, but also provides significant introductory hands-on experience in map design using computer software, specifically ESRI’s ArcView GIS. The majority of topics covered in the course are divided into a lecture and laboratory section. Students are presented with fundamental design theories and principles associated with particular types of maps or related graphic materials in lectures, and then challenged to implement these principles in self guided hands-on exercises utilizing the software. The course is intended to cover the basic principles of cartography as well as modern techniques which influence map design, presentation, and interpretation processes. Students will develop a series of hard copy maps, charts, and graphics as well as design materials for presentation through digital media. With the exception of the instructor’s lectures, the class will consist primarily of class discussion. All students are encouraged to participate and add to class discussions using knowledge from their own experiences, class readings, and/or additional readings.

A note about technology... while a familiarity with computer technology is important and we will be spending a considerable amount of time using specific software, this is not the focus of the class. As we all know, technology by definition is always changing. However, the principles that lead to good map design remain the constant. **This class will emphasize design principles that transcend technology.**

Course Objective:
This course is designed to introduce you to maps and digital mapmaking. You will learn the fundamentals of compiling, designing, and using maps and mapped data. You will also learn the concepts and theory related to cartographic design and digital methods of production. The goal of this class is to teach you how to recognize, appreciate, and incorporate cartographic principles to make effective and esthetically pleasing maps.

Selected Lecture Topics:
- A Brief History of Cartography
- cartographic Design Fundamentals
- Map Symbology
- Map Typography
- Map Projections, Coordinate Systems, and Scale
- Thematic Map Types
- Color-Use Guidelines
• Mapping Three Dimensional Data
• Digital Graphics
• Animated Cartography
• Geographic Visualization

Policies:

Attendance
• Attendance is crucial, as I will be covering information in class that is not necessarily in the text.
• Unexcused absences will lead to a drop in letter grade; an excused absence is at the discretion of the professor.
• As with most math and science courses, you will need to understand material learned in earlier labs in order to complete later labs. If you get behind in this course, it is very difficult to catch up.

Academic Integrity
Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

Special Accommodations
If you need special accommodations, I encourage you to see me during my office hours or by appointment.

Lab Policies
Read and follow the lab rules. They are located here: http://geography.hunter.cuny.edu/techsupport/rules.html

Grading: Evaluation of your performance in this course will be based on both lecture and laboratory components. Each student starts of the semester with a grade of a B-. Your grade can go up or down depending on whether you make a conscious effort or not. If you contribute often to class discussions and put in ‘a little extra effort’ on each assignment you will get an A. If you fail to come to class, miss assignments or turn in substandard work, your grade will be lowered accordingly. In short, your grade is your choice. The only exception to this is your grade on the final project. For this, you will be graded by your peers based on what they have learned throughout the semester as to what Quality in Cartography looks like.
• Map Journal   10%
• Assignments   40%
• Final Project   30%
• Final Exam   20%

Assignments:
There are a number of assignments that are due throughout the semester. The assignments and brief descriptions are as follows:

1) Map Journal.
Maintain a journal of cartography examples you encounter during the course of the semester. If you come across map images on a website print out a hard copy. Be sure to include the link to the site. If the maps are from newspapers or magazines, be sure to include the bibliographic reference. In addition to the maps themselves, you should annotate the journal with BRIEF critiques of the maps, eg. things you liked, things you didn’t like, elements that worked, elements that didn’t, was the map effective, etc. There must be at least 25 entries in your journal by the end of the semester.

2) ArcView GIS Exercises.
You will be performing several ‘hands-on’ exercises developed to teach you fundamental cartographic concepts and techniques.

3) Final Project
Create a presentation quality map from a variety of data sources using techniques learned in class

4) Map Critiques
Chose one high quality map and one low quality map and write a formal critique for each, explaining why it falls into its respective category. Additional details will be provided during the semester.

Numbers 1-3 apply to ALL students. Number 4 is for grad students only.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Reading(s)</th>
<th>Assignment</th>
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<tr>
<td>1</td>
<td>28-Jan</td>
<td>Introduction Map Functions and Cartographic Process</td>
<td>Chapter 1/Handouts</td>
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<tr>
<td>2</td>
<td>4-Feb</td>
<td>Earth Geometry Map Projections and Distortion Generalization Scale Effects on Map Data</td>
<td>Chapters 5 &amp; 8</td>
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<td>3</td>
<td>11-Feb</td>
<td>Visual Variables 1</td>
<td>Chapters 2-3</td>
<td>Exercise 1: Due</td>
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| 4    | 18-Feb| History of Cartography  
*Meet at NYPL* 
Room 117 
The New York Public Library 
Fifth Avenue and 42nd Street | Handouts            | Exercise 2: Due           |
| 5    | 25-Feb| Visual Variables 2                                      | Chapter 6           | Exercise 3: Due             |
| 6    | 4-Mar | Thematic Map Symbols                                     | Chapters 7 & 9      | Exercise 4: Due             |
| 7    | 11-Mar| Typography                                              | Chapter 10          | Exercise 5: Due             |
| 8    | 18-Mar| Color 1                                                 | Chapter 11          |                             |
| 9    | 25-Mar| Color 2                                                 | Handouts            |                             |
| 10   | 1-Apr | Mapping Enumerated Data & Tables, Graphs and Charts      |                     | Exercise 6: Due             |
| 11   | 8-Apr | **NO CLASS**  
(Spring Break) |                      |                             |
| 12   | 15-Apr| **NO CLASS**  
(Spring Break) |                      |                             |
| 13   | 22-Apr| Mapping Higher Dimensions                                | Chapter 12          | Exercise 7: Due & Final Project Draft Due |
| 14   | 29-Apr| Critique of Final Project Drafts                        | Handouts            | Exercise 8: Due             |
| 15   | 6-May | The Future of Cartography                                | Handouts            | Map Journal Review          |
| 16   | 13-May| **Final Project Display**                                |                     | Final Project Due Prior to |

*SUBJECT TO CHANGE!!*
<table>
<thead>
<tr>
<th>Class</th>
<th>17</th>
<th>20-May</th>
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