

GTECH 721
Advanced Cartography
Hunter College, CUNY
Department of Geography

Spring 2011
Mondays 5:35PM to 9:15PM

Instructor: Doug Williamson, PhD
Email: Douglas.Williamson@hunter.cuny.edu
Office Hours: By Appointment
Geography Department Office: Room 1006 HN
Geography Department Phone: 212.772.4300

Required Text:

Reinhardt, R. (2004). *Flash MX 2004 Bible*, John Wiley and Sons

Readings:

Selected readings from the following texts may be used, but it is not necessary to purchase these. Copies will be distributed when applicable

- ✓ MacEachren, (1995). Alan M. *How Maps Work: Representation, Visualization, and Design*. New York: Guilford Press.
- ✓ Monmonier, M. (1993). *Mapping It Out*. Chicago, IL: University of Chicago Press.
- ✓ Tufte, Edward R. [1983] (2001). *The Visual Display of Quantitative Information*, 2nd Edition, Cheshire, CT: Graphics Press. ISBN 0961392142.
- ✓ Tufte, Edward R. (2006). *Beautiful Evidence*. Cheshire, CT: Graphics Press. ISBN 0961392177.

Other Relevant Texts (NOT required):

- ✓ Bertin, J. (1984) *Semiology of Graphics: Diagrams, Networks, Maps*. Madison: University of Wisconsin Press.
- ✓ Krygier, John and Denis Wood, (2005). *Making Maps: A Visual Guide to Map Design for GIS*, The Guilford Press
- ✓ Brewer, Cynthia. (2005). *Designing Better Maps*, ESRI Press, Redlands Ca.
- ✓ Tufte, Edward R. (1990). *Envisioning Information*. Cheshire, CT: Graphics Press. ISBN 0961392118.
- ✓ Tufte, Edward R. (1997). *Visual Explanations: Images and Quantities, Evidence and Narrative*. Cheshire, CT: Graphics Press. ISBN 0961392126.

Course Overview:

GTECH 721 is an advanced course in the theory of map design, the fundamentals of how maps work and how information is transferred from map to reader and the practical application of these concepts into digital, interactive cartographic products. The digital revolution has changed how we make maps, how we use them, and how we think about them. The rapid and concurrent developments in desktop computing capabilities, the availability of digital geospatial data, and the growth of the Internet have radically changed the cartographic landscape. In an age where the user has increasingly become their own mapmaker (e.g., Google Maps, online GIS) this course examines recent issues in cartography related to map animation, the Internet, geovisualization, and on-demand cartographic systems—focusing on the new cartographic challenges and opportunities associated with interactive, digital mapping systems. This class will examine both theoretical and practical issues in the design of effective digital maps and mapping systems.

The lecture portion of the class will consist **almost exclusively** of class discussion and in-class demonstrations. Topics to be covered include the representation of change, exploratory data analysis, and tools and techniques in geovisualization. All students are encouraged to participate and add to class discussions using knowledge from their own experiences, class readings, and/or additional readings. The laboratory component of this class provides students with a hands-on, intense application of thematic map design—with an emphasis on its application in interactive and dynamic mapping systems.

Course Objective:

By the end of the class you should be able to understand how dynamic maps are made, be able to articulate the conceptual strengths and weaknesses of dynamic maps, and understand where this rapidly evolving field is headed. You will also gain valuable (and marketable) skills in designing and implementing working examples of dynamic Web maps using vector-based animation tools. The course consists of two closely related components: lectures and labs geared toward a symbiotic relationship between theory and practice.

Selected Topics:

- Multivariate techniques
- How Maps are Seen: Perception
- Semiotics in Cartography
- How Maps Work: Cognition
- Map animation
- Data exploration/Geovisualization
- Web-based maps
- Basic Interface Design
- Visual limits
- Web-based maps

NOTE: This is not a programming class, nor will it cover the creation of web-based mapping applications such as those using ESRI's ArcGIS Server or Open Source tools such as Geoserver and Open Layers.

Assignments:

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

2) Map Assignments (4)

Create a high quality map products from a variety of data sources based on principles discussed in class

3) Final Project

Policies:

Attendance

- Attendance is crucial, as a large percentage of your grade will be based on participation in class discussions
- Unexcused absences will lead to a drop in letter grade; an excused absence is at the discretion of the professor.

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 (discussion) and laboratory components. Each student starts off 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 'go the extra mile' on your final project, 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.

A note on the grading of your final projects... The grades for your final projects will be based on the oral critiques from your peers. Based on what they have learned throughout the semester, your peers will critique your drafts in class and then provide a grade for the final deliverable.

- Participation 20%
- Map Assignments 50%
- Final Project 30%

SPRING 2011		GTECH 721: Advanced Cartography SUBJECT TO CHANGE!!!		Doug Williamson
Meeting	Date	Topic	Reading(s)	Assignment
1	01/31	Introduction and Course Overview		
2	02/07	Introduction to Flash		
3	02/14	Flash Part II		Flash Tutorial Due
4	02/23	<i>NO CLASS on MONDAY Class meets Wednesday</i> The Nature of Cartography		Flash Tutorial Due
5	02/28	Dynamic Visual Variables		Draft Assignment 1 Due
6	03/07	Human Vision and Cartography		Final Assignment 1 Due
7	03/14	Animated Maps		Draft Assignment 2 Due
8	03/21	Map Perception and Cognition		Final Assignment 2 Due
9	03/28	Geovisualization		Draft Assignment 3 Due
10	04/04	Semiotics		Final Assignment 3 Due
11	04/11	Interface Design		Draft Assignment 4 Due
12	04/18	NO CLASS		
13	04/25	NO CLASS		
14	05/02	Final Project Roundtable		Final Assignment 4 Due
15	05/09	Project Critiques		Draft Final Project Due
16	05/16	Project Presentations		Final Project Due