Hunter College of the City University of New York–CUNY
Department of Geography - http://www.geo.hunter.cuny.edu
GTECH 361/710 - Introduction to Geographic Information Systems
Syllabus* – Spring2013

1. Course Information:

Credits: 3 / **Hours:** 4 hours (2 lecture/2 lab)

Blackboard: http://www.hunter.cuny.edu/icit/blackboard

Ereserves: http://hunter.docutek.com/eres/coursepage.aspx?cid=4169&page=inf

Location: TH405 – Thomas Hunter

Days and Times: Wednesday 5:35 – 9:15 PM

Prerequisites: none

Catalog Information: Undergraduate   Graduate

2. Instructor Information:

Professor: Giovani H. Graziosi, Ph.D., M.U.P.

Office: Hunter North 10th Floor, Room 1032

Email: giovani.graziosi@hunter.cuny.edu

Office Hours: by appointment

3. Department Information:

Geography Department- $40^0 46'07''$ N -$73^0 57'52''$ W
 Hunter College. Hunter North, 10th Fl.
 695 Park Avenue. New York, NY, 10065

Tel: 212-772-5265

* This syllabus is subject to updates. Find the latest version in the Blackboard ADMIN folder.

4. Course Description:

This course provides an Introduction to Geographic Information Systems (GIS). It examines fundamental concepts and theories from the geospatial, cartographic and computing sciences to understand the emergence, use and development of this rapidly growing area of geographic inquiry and research. Focused on GIS, Global Positioning System (GPS) and remote sensing as well as spatial data production, analysis and management, this course combines an in-depth review of the major geospatial theoretical foundations with hands-on practical exercises to offer participants key opportunities to gain knowledge and expertise with which to collect, analyze, and produce geospatial and attribute information.

The course is divided into two interrelated parts: 1) lectures, which introduce the theory of GIScience; and 2) lab exercises, which help students master GIS use and geospatial data analysis. While the lectures serve to discuss theories, concepts, and major data aspects, the exercises introduce tools, geospatial data, and software needed to complete the assignments. After a short introductory period, students with basic Windows knowledge advance progressively and acquire advanced skills to gather, produce, analyze, and disseminate geospatial information. The course also incorporates real-world case scenarios using local neighborhood geographies to provide students with additional opportunities to learn how to use GIS to analyze and understand their own surroundings within the complex system of New York City. The primary software used in this course is ArcGIS by ESRI.

5. *Learning Objectives:*

- Acquire a thorough understanding of mapping and geospatial technologies including Geographic Information Systems (GIS), Global Positioning Systems (GPS) and remote sensing.
- Possess basic skills for map reading and map and data interpretation
- Understand cartographic principles for map compilation, design, reading, and production
- Utilize and apply map projections to incorporate geospatial data from a variety of different sources
- Develop and manage geodatabases and relational tables to collect, archive and disseminate data
- Be able to analyze data needs and identify tools, methods, and procedures to produce information
- Understand basic principles of remote sensing to gather, assemble, and analyze imagery
- Produce maps and other data visualization aids using GIS and basic remote sensing technology
- Utilize Global Positioning System equipment as navigational tools and to collect field data
- Apply GIS and geodatabase development principles to collect, manage and analyze information
- Follow standards and principles shared by practitioners and professional geospatial organizations

6. *Course Requirements:*

Undergraduate Students		Graduate Students	
Attendance/Participation	- 10% -	Attendance/Participation	- 10% -
Lab Assignments	- 40% -	Lab Assignments	- 30% -
Midterm Exam	- 25% -	Midterm Exam	- 25% -
Final Exam	- 25% -	Final Exam	- 25% -
		Final Project	- 10% -

7. *Attendance Policy:*

According to the student handbook, "students are expected to attend classes regularly, and instructors are required to record attendance for grading and counseling purposes." Class attendance and participation form part of the final grade. In addition, "students receiving financial aid must be certified as attending classes regularly for continuing eligibility."

8. *Blackboard and Email Information:*

Please submit **ALL assignments via Email.** Blackboard submission is not required and printed copies are not acceptable. Send all materials to *giovani.graziosi@hunter.cuny.edu*

9. *Grading Policy*

All exam grades are curved and become part of the final grade; individual grades will not be dropped. Extra credit assignments are not available. Except under the most extraordinary and documented circumstances, **Incomplete Grades** (**IN**) are **not available** for this course. You must contact me via email within 48 hours of the final exam and request an IN grade. Please send me your email with subject line: "Request to File a Contract to Resolve Incomplete Grades." In your email you need to schedule a date to meet with me during my office hours at the college to prepare the contract. Otherwise, I will process your grades and record the grade you have earned as final.

10. *Classroom and Lab Policies*

- Please turn off all cell phones, i-pods, i-pads, and/or any other electronic devices including personal computers when entering the classroom.
- Repetitive class lateness will be noted. No make-up exams will be issued except in extreme emergencies and upon presentation of medical/emergency documentation.
- Class attendance and participation is required and form part of your final grade.
- Please consult the Lab Rules and Regulations at http://www.geo.hunter.cuny.edu/techsupport/rules.html

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11. Required Books

*   Required Textbook – NONE

- ### Recommended Books
  - **-** Chang, Kang-tsung. 2012. *Introduction to Geographic Information Systems*. New York: McGraw-Hill. 6th Ed. ISBN: 9780073369310
    Price Information –
  - **-** Ormsby, Tim; Napoleon, Eileen; Burke, Robert; Groessl, Carolyn; Bowden Laura. 2010. ***Getting to Know ArcGIS Desktop. 2nd Edition.*** ISBN: 9781589482609

    (Includes free ArcGIS 180-day software student version)
   **Price Information – ESRI Press** $79.95. / **Barnes and Noble** $ 44.34

    - Albrecht, J. 2007. ***Key Concepts and Techniques in GIS.*** London: Sage.

- ### Suggested Books
  - Harvey, F. 2008. ***A Primer of GIS.*** New York. The Guilford Press (on blackboard)
  - de Smith, M; Goodchild, M; Longley, P. 2008. ***Geospatial Analysis.*** Leicester: (Free access at http://www.spatialanalysisonline.com/)
  - deMers, Michael 2004. *Fundamentals of Geographic Information Systems*. New York: Wiley.

- ### Other Materials:
  - **-** Giovani H. Graziosi, Ph.D., M.U.P. Fall 2012. 2nd Edition. ***Atlas of Boundaries for Community GIS: The ABC GIS Exercise and Study Guide.***   (available from instructor).
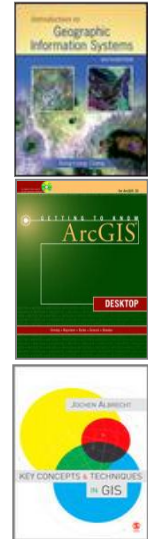
12. Professional Journals**

- *The Professional Geographer*
- *Geographical Review*
- *Journal of Spatial Science*
- *Journal of Geographical Systems*
- *International Journal of Geographical Information Science*
- *Annals of the Association of American Geographers*
- *Geographical Analysis*
- *Cartography and Geographic Information Science*
- *Journal of Urban and Regional Information Systems Association*
- *Population Studies*

**The Environmental Systems Research Institute provides links to many of these publications at http://training.esri.com/campus/library/bibliography/Browsebymaterial.cfm?libsection=Journals.

13. Library Resources

The Hunter College Library provides access to many journals and map resources available to the CUNY community.   The Geography Department's node is located at http://library.hunter.cuny.edu/node/116

Hunter Library Geography Guide http://libguides.library.hunter.cuny.edu/geography contains special links and information on journals, maps, and other cartographic materials.
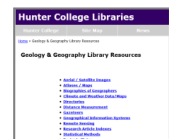
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Online Map Library Resources

Alexandria Digital Library Gazetteer Service   New York Public Library Map Division

David Rumsey Map Collection   NGA GEOnet Name Server (GNS)

Library of Congress Map Collections   UT Perry-Castañeda Library Map Collection

United Nations Cartographic Section

Professional Organizations

- Association of American Geographers (AAG)
- American Congress on Surveying and Mapping (ACSM)
- American Society of Photogrammetry and Remote Sensing (ASPRS), North Atlantic Region.
- Geospatial Information and Technology Association (GITA)
- Urban and Regional Information Systems Association (URISA) , Mid Atlantic Region
- Geographic Information Systems and Mapping Operations (GISMO)
- United States Geospatial Intelligence Foundation (USGIF)

14. Schedule of Activities

	Date	Topic	Assignment	Due
1	01/30	Introduction	Assignment-1	02/06
2	02/06	Principles of Cartography	Assignment-2	02/13
3	02/13	Location and Land Partitioning Systems	Assignment-3	02/27
4	02/27	Geospatial Data Management	Assignment-4	03/06
5	03/06	Data Sources and Data Compilation	Assignment-5	03/13
6	03/13	Tables, Text, and Data Types	Assignment-6	03/20
7	03/20	Geodatabase Design	Assignment-7	04/03
	03/27	**Spring Recess**		
8	04/03	Geocoding	Assignment-8	04/10
9	04/10	Geodatabase Feature Behavior	Assignment-9	04/17
10	04/17	Vector GIS	Assignment-11	04/24
11	04/24	Raster GIS	Assignment-10	05/01
12	05/01	Map Design and Annotations	Assignment-12	05/08
13	05/08	Geoprocessing and Modeling	Assignment-13	05/15
14	05/15	Final Student Project Presentations		Projects Due
15	05/22	**Final Examination**		

Academic Calendar: http://registrar.hunter.cuny.edu/pdf_folders/Academic%20Calenders/Fall%202012/Academic%20Calendar%201%20%20Fall%202012%20-%20%20Spring%202013.pdf

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15. Course Assignments

- Students must submit their reports by midnight as noted above. Materials submitted after the posted deadlines are subject to increasing grade penalties. No exceptions will be made except in extreme circumstances (such as a medical emergency with a doctor's note).

- Please have a 1'' margin all around your pages and use a regular 12 pt font text size. Also include 1) your name; 2) a title (e.g. *GTECH710 – Exercise #1);* and 3) a bibliography on every report you submit. Please add page numbers in your document's footer or header.

- If you do not have the *Snip* Window tool, use the *printScreen* key to capture an image of the screen and paste it (**Ctrl+V**) into your report.   Images captured using *Snip* or the *printScreen* must be titled and sourced either on the image itself or in your bibliography.

- File/Email naming convention: You MUST label all **assignment files and emails** using the following nomenclature: *GTECH-361-710_Exercise-1_YOURNAME.doc*

- Remember to save your work files periodically in case the computer crashes unexpectedly.

- Please send copies of your reports by email to *giovani.graziosi@hunter.cuny.edu*

16. Accommodating Disabilities[1]

In compliance with the American Disability Act of 1990 (ADA) and with Section 505 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical and/or Learning) consult the Office of Accessibility located in Room E1124 to secure necessary academic accommodations. For further information and assistance please call 212-772-4857, TTY 212-650-3230.

17. Academic Integrity and Plagiarism Policy[2]

Any deliberate borrowing of the ideas, terms, statements, or knowledge of others without clear and specific acknowledgment of the source is intellectual theft and is called plagiarism. It is not plagiarism to borrow the ideas, terms, statements, or knowledge of others if the source is clearly and specifically acknowledged. Students who consult such critical material and wish to include some of the insights, ideas, or statements encountered must provide full citations in an appropriate form. 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.

CUNY Academic Integrity, Plagiarism, and Cheating
From: http://www.csi.cuny.edu/catalog/graduate/2423.htm

Integrity is fundamental to the academic enterprise. It is violated by such acts as borrowing or purchasing assignments (including but not limited to term papers, essays, and reports) and other written assignments, using concealed notes or crib sheets during examinations, copying the work of others and submitting it as one's own, and misappropriating the knowledge of others. The sources from which one derives one's ideas, statements, terms, and data, including Internet sources, must be fully and specifically acknowledged in the appropriate form; failure to do so, intentionally or unintentionally, constitutes plagiarism. Violations of academic integrity may result in a lower grade or failure in a course and in disciplinary actions with penalties such as suspension or dismissal from the College. More information on the CUNY policies on Academic Integrity can be found in Appendix iii.

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[1] F*rom: Hunter College Adjunct Faculty Handbook*
[2] *Ibid.*

What is Plagiarism?[3]

Plagiarize \'pla-je-,riz also j - -\ vb -rized; -riz·ing vt [plagiary] : to steal and pass off (the ideas or words of another) as one's own : use (a created production) without crediting the source vi: to commit literary theft: present as new and original an idea or product derived from an existing source - pla·gia·riz·er n [4]

Giving Credit Where Credit is Due - Avoiding Plagiarism. The sites below provide excellent pointers for avoiding plagiarism.

- Avoiding Plagiarism, Purdue University Online Writing Lab
  http://owl.english.purdue.edu/handouts/research/r_plagiar.html
- How to Use the Library to Write Better Papers and to Avoid Plagiarism – Baruch College
  http://newman.baruch.cuny.edu/instruct/handouts/plagiarism.htm
- How to Use the Library to Write Better Papers and to Avoid Plagiarism – Baruch College
  http://newman.baruch.cuny.edu/instruct/handouts/plagiarism.htm
- Plagiarism Tutorial, University of Albany/SUNY - Library
  http://library.albany.edu/usered/plagiarism/index.html
- Quoting and Paraphrasing Sources. (Writing Center, University of Wisconsin-Madison)
  http://www.wisc.edu/writing/Handbook/QuotingSources.html

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[3] *From: http://www.lehman.cuny.edu/provost/library/LibraryInstructionStudents.htm*
[4] *From: Webster's New Collegiate Dictionary 9th ed, (Springfield, Ma: Merriam 1981, p. 870).*