

GTECH 20100: Introduction to Geographic Information Science Fall 2015

Instructor:	Carsten Kessler
Course time:	Tuesdays and Fridays, 9:45AM–11:00AM
Lab times:	Tuesdays or Fridays, 12:10PM–3:00PM (enroll separately)
Class room:	HN 1022 (for lecture) HN 1090B-1 (for lab)
Instructor's office:	HN 1025B
Advising hour(s):	Tuesdays, 3–5PM
Instructor's email:	carsten.kessler@hunter.cuny.edu (all emails must contain [GTECH 201] in the subject line, and be signed with the student's full name)
Prerequisites:	GEOG 101 or 150; MATH 101

Required/recommended textbook

No required textbook. Additional reading materials relevant to this course will be discussed during our first few sessions. Supplementary reading material for each session will be made available in advance through BlackBoard.

Course Description

Geographic information science/systems is very much about relationships and in this course we will establish a scientific framework for reasoning about relationships such as spatial coincidence, distance, vicinity, scale, geometry and attributes, geographic features and their representation on a map, etc. Hand-in-hand with each of the relationships to be studied, you will learn how to apply your knowledge using GIS tools.

Expected Learning Outcomes

By the end of this course, you will have a good understanding of different types of geographic data and how they can be analyzed using geographic information systems. GTECH 201 forms the basis for a series of other GTECH courses that cover the range from cartography to advanced GIS applications. GTECH 201 is a required course because the skill set you acquire here will serve you well in all jobs related to geography and environmental studies. Upon successful completion of GTECH 201, students will be familiar with a large set of spatial concepts and tools to implement them. Additionally, the concepts covered will facilitate abstraction of everyday geographic observations to put them to use in a spatial decision making context.

Course Evaluation

Labs/Homework:	40%
Studio projects:	20%
Midterm:	15%
Final Exam:	15%
Quizzes/participation:	10%

Evaluation of student performance is measured in theory and practice. The theory part is covered in the midterm and final exam. GIS can only be learned by doing. Hence some 50% of the course grade is based on lab exercises and a final group studio project. Active participation is an essential learning tool and hence encouraged by allowing for 10% of the course grade.

A final grade of IN (incomplete) will not be given except under the most extraordinary, and documented, circumstances. Only students who have completed ALL course requirements including all writing/lab assignments and exams will be eligible for a final grade of CR/NC.

All grading for this course will follow the CUNY grading policy, which can be found in the online undergraduate (or graduate) catalog, available at <http://catalog.hunter.cuny.edu>.

Course Policies

Web-enhancement

Everything pertaining to this course will be communicated through Blackboard. You are required to check the Blackboard course site on a daily basis. All changes to the syllabus will be announced on the course home page. All lecture and lab materials are accessible through Blackboard, and this is also the place where you upload your assignments to. Your exams and lab assignments will be graded based on what you have uploaded to Blackboard and this is where you will find your grades and may access course statistics that help you to assess your standing at any given time.

Late Policy

Lab assignments are due within the first 10 minutes of the following week's lab. 10% will be deducted for every day late. All assignments must be submitted to be allowed to sit the final exam. Exceptions will only be granted for medical reasons (requiring a written note from a medical practitioner stating your inability to attend class) or other extreme personal crises.

Lab Access

The labs in HN-1090B are open 7 days a week, 24 hours a day, and students with appropriate access are entitled to work in these labs when the labs are not being used for teaching. Additional information on labs and lab policies is available at <http://www.geo.hunter.cuny.edu/techsupport/rules.html>.

Class Climate

Hunter has made a conscientious effort to increase diversity in the student, staff and faculty member populations. To ensure that all class members feel welcomed and equally able to contribute to class discussions, we will all endeavor to be respectful in our language, our examples, and the manner in which we conduct our discussions and group work. If you have any concerns about the climate of the class, please contact me.

Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, the current syllabus is a guide for the course and is subject to change with advance notice. All changes will/would be announced on Blackboard, which you should check regularly.

Hunter College Policy on 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.

ADA Policy

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 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 AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: [\(212\) 772- 4857](tel:(212)772-4857) or [\(212\) 650-3230](tel:(212)650-3230).

Course schedule:

WEEK	LECTURE/LAB
Aug 28	Lecture 1 Getting started; semester overview; mathematical foundations No lab first week
Week of Aug 31	Lecture 2: Geography as context Lab 1: Mathematical reasoning and problem solving
Week of Sep 7	Lecture 3: Principles of GIS; GIS data formats Lab 2: Geographic data visualization
Weeks of Sep 14 and 21 (no classes scheduled Tue, Sep 15, and Tue, Sep 22; Fr, Sep 25 runs on Tue schedule)	Lecture 4: presenting data and ideas; portfolio development Lab 3: First steps with ArcGIS online
Week of Sep 28	Lecture 5: US Census data and mapping Lab 4: Accessing and displaying Census data with Quantum GIS
Week of Oct 5	Lecture 6: Data input; where to find data Lab 5: Interrogating NYC's datamine with CartoDB
Week of Oct 12	Lecture 7: setting up a GIS project Lab 6: Organizing a geographic database
Week of Oct 19	Lecture 8: Projections and reference systems No labs this week, study for midterm instead!
Week of Oct 26	Midterm exam Lab 7: Comparing map projections in ArcMap
Week of Nov 2	Lecture 9: Basic GIS analysis operations Lab 8: Getting started with GIS analysis
Week of Nov 9	Lecture 10: Introduction to raster GIS Lab 9: Working with raster data
Week of Nov 16	Lecture 11: Create and update spatial and attribute data Lab 10: Basic mapping with ArcGIS and QGIS
Week of Nov 23 (No class on Nov 27, Thanksgiving weekend)	Lecture 12: Final cartographic touches
Weeks of Dec 7 and 14	Lecture 13: Where-to go from here; GIS in a larger institutional/societal context and Exam preparation Studio presentations
Dec 21 (Monday!) 9–11AM	Final Exam