

GTECH 710 – Concepts and Theories in GeoInformatics

Spring 2024

Thursdays, 5:30 – 8:20 PM

Place of Instruction: HN 1004
Credits/hours: 3/3
Instructor: Jochen Albrecht, jochen.albrecht@gmail.com
Office Hours: Tu/Th 3-5 PM and by appointment
Office: HN 1032 (although not applicable this semester)
Pre-requisite: GTECH 709 – Introduction to Geographic Information Systems

Course Description

In this course, we will introduce the theoretical foundations for the concepts covered in GTECH 709. This course does **not** have a corresponding lab, as the practical application of the concepts taught here have been covered in the GTECH 709 labs (and to no small degree in subsequent courses like 731, 732, etc.). In the second part of each session, a student will present a research paper related to the session's topic, followed by a discussion. The paper presentations will be assigned in the first meeting. Moreover, there will be a weekly reading assignment, for which each student has to turn in a short abstract and three questions for discussion in class.

Textbook

There is no required textbook for this class. Instead, we will be reading and discussing seminal papers on the respective topics that are posted on BlackBoard.

Goals

Introducing students to a range of theoretical issues unpinning *GIScience* as opposed to GISystems.

Objectives

By the end of the course it is expected that students will be familiar with core concepts of geography and geographic information science such as location, place, process, event, and spatial autocorrelation. Moreover, students will know about the theoretical foundations of tools such as spatial databases and geo web services. The preliminary goal of this course is to lay the theoretical and conceptual foundations for specialized GIS courses.

Outcomes

By the end of this course, students will be able to read and digest contents of current GIScience journals. They will be adept to discern the disciplinary influences and have practiced discussing contemporary discourses in GIScience.

Criteria for evaluation

I do not grade on a curve. If many students get good grades, great! If many have mediocre grades, so be it; it will be disappointing and an incentive to do better. I will not try to trick you with impossible exams. Ideally, all can have 100 points! Final evaluation will be based on the following breakdown:

Abstracts & questions	20%	
Presentation	20%	
Participation in class	20%	(mere online presence does not suffice! We will use the BB discussion board extensively)
Midterm	20%	
Final exam	20%	

Policy on Incomplete (IN) and Credit/No-Credit (CR/NC) grades

A final grade of IN (incomplete) will not be given except under the most extraordinary, and documented, circumstances. CR/NC is not available to students enrolled in GTECH 710.

Course Policies

All our synchronous sessions will be recorded via BlackBoard Collaborate. If you have a problem with that, please drop the course. While I acknowledge that most of us are working from home and have no dedicated quiet office, I urge you all to be fully present (without distractions) during our synchronous sessions. Announcements and grades will all be posted on [BlackBoard](#).

Communication

All email messages about this course should include GTECH 710 in the subject line and be signed with your full name.

Participation

Attendance is crucial. Assuming that the class-learning environment is active learning, adherence to protocols and the course timetable is very important. Lateness in arriving at class, even in our new online environment, will not be tolerated. Class participation includes timely attendance and participation in organized class discussions, accomplishments of in-class tasks, and preparation of the reading assignments.

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 or (212) 650-3230.

Hunter College Policy on Sexual Misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

- a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, on contacting the College's Public Safety Office (212-772-4444)
- b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) of Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct

The policy is available at <http://www.cuny.edu/about/administration/offices/la/Policy-on-SexualMisconduct-12-1-14-with-links.pdf>

Preferred Gender Pronouns

The policy is available at <http://www.cuny.edu/about/administration/offices/la/Policy-on-SexualMisconduct-12-1-14-with-links.pdf>

Tentative Schedule

Except for changes that substantially affect implementation of the evaluation (grading) statement, this 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 are expected to check on a daily basis. This syllabus is subject to updates. Changes will be announced in class and on Blackboard.

<i>Week</i>	<i>Date</i>	<i>Topic</i>
1	Feb 01	Introduction; Foundational concepts of GIScience, part 1
2	Feb 08	Foundational concepts of GIScience, part 2
3	Feb 15	Data capture and acquisition
	Feb 22	No GTECH 710, CUNY classes follow Monday schedule
4	Feb 29	Data management
5	Mar 07	Programming and development
6	Mar 14	Computing platforms (the cloud, servers, desktops, mobile devices, etc.)
7	Mar 21	Analytics and modeling
8	Mar 29-31	Midterm
9	Apr 04	Uncertainty and qualitative spatial reasoning

- 10 Apr 11 Domain-specific Applications
- 11 Apr 18 Cartography and visualization
Apr 25 Spring recess
- 12 May 02 Knowledge economy (human resources, economics, project management)
- 13 May 09 Broader Societal Concerns and Implications
- 14 May 16-19 Final exam

Instructor expectations Hunter

College...

This is a place where students come to learn. It's a place where knowledge is developed and hopefully it's a place where students can see and participate in its development. Unlike previous schooling you don't have to be here, so we'll assume that you want to be here and that you are here to actively seek knowledge and skills.

With assumptions that you are (a) here of your own free will and (b) are actively seeking to gain knowledge and skills, there is only one fuzzy area (for some) - how to succeed! It's really quite simple: have fun. If you are enjoying what you are doing, you will succeed; if you are taking subjects or studying in a particular program and not enjoying it, you are unlikely to be successful.

A few words on success and enjoyment. Success is not just measured by your grade (but passing does help!), it is also measured by how you feel about what you are doing. You are the only person who can really judge whether you are successful - have you met your own expectations? Enjoyment does not necessarily mean stress free living (although maybe it is for some!). Taking only subjects that you were told were "easy" doesn't guarantee enjoyment; some of us require a challenge in life! Again, only you are in a position to determine what you find enjoyable. A final thought on what a university is: this is also a place where faculty comes to learn...

GTECH 710 Introduction to GIScience

Students: to be successful you should be taking this subject because you want to take it, not because someone told you that you need to take it and you must be actively seeking knowledge and skills. This subject is a good participation "sport", but it's not a really good spectator event. You need to be proactive, be able to try something new, look at things from a new (spatial) perspective, ask questions, read read read. Study every day-if you study less than three days a week you are wasting your time completely. You need to know when to take a break, get some fresh air, rest your eyes (a Buddhist philosophy is quite useful...). Attend all sessions. When your absence is unavoidable, make sure you catch up on what was missed. Plan your week as best as possible and make the commitment to spend the amount of time needed for you to be successful. Get a study partner or three, if this works for you. Remember, even if you are able to survive by cramming for exams, the subject matter will only go into short term memory. Eventually, you will reach a level where you can no longer survive by cramming, and your study habits will kill you.

Faculty: to be successful, I need to know that I've "made a difference" to at least some of my students, i.e., they feel successful. I'll provide a coherent subject structure, I'll deliver the best lecture possible on the day, and pointers to resources where possible and I will provide sound practical instruction and practice my listening skills so that I can understand what difficulties you may be having, so that we can resolve them. Furthermore, I am available and approachable; ask

questions during class and at other times; use my office hours or make appointments to see me. Faculty have shown disappointing prowess at extra-sensory perception, please help me out!

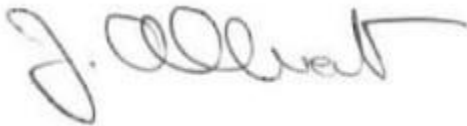
We often lecture in subjects we are considered to have some expertise in; we are therefore fairly interested in the subject matter. We too are students in that we are continuing to learn new things in our areas of expertise and sometimes we are the ones who develop new knowledge in our areas of expertise!

Theory vs. practice: in lectures I try to provide an overview of the most important knowledge, but this never replaces the reading material. Sometimes lectures and readings will cover the same ground, but often, the best that can be done in some fourteen sessions is to provide just a "flavor" of the subject matter, something to whet your appetite, something to set the context for your readings.

Finally..

The reason for this page of amateur pop psychology is twofold: (a) first I hope that prospective students take this subject for the right reasons (i.e. they believe that they will enjoy it) and are in the right frame of mind to be successful and (b) second, I hope that with a little mutual empathy the learning experience can be made better for both student and teacher. If we are not having fun, we are both doing something wrong!

I wish us a lot of fun in this course,

A handwritten signature in black ink, appearing to read "J. Allert". The signature is written in a cursive style with a long, sweeping horizontal line at the end.