

**GTECH 71000**  
**Concepts and Theories in Geoinformatics**  
Spring 2019  
Tuesday, 5:35 – 8:25 PM

**Instructor:** Shipeng Sun

**Office:** HN 1043

**E-mail:** shipeng.sun@hunter.cuny.edu

**Classroom:** HN 1004

**Office hours:** Tu 2-4pm, Th 3-5pm

**Phone:** 212-396-6039

***Course Description***

GTECH 71000 introduces the theoretical foundations for GeoInformatics as well as important concepts and research frontiers in the field. It does not have a corresponding lab section as the practical applications of the concepts are covered in GTECH 70900 and GTECH 73200. Each week, based on a reading list and an overview lecture, one or two students will make a presentation on the week's topic, organize and lead a discussion session. The presentations will be assigned during the first week. Moreover, there will be a weekly reading assignment, for which each student has to turn in a one-page short review and three questions for discussion in the class.

***Textbooks***

There are no required textbooks for this class. Instead, we will be reading and discussing seminal literature on the respective topics. Detailed information about the literature will be provided at the course site on Blackboard at least one week before the lecture.

***Goals***

The goal of GTECH 71000 is to introduce students to a range of scientific concepts and theoretical issues unpinning Geoinformatics and GIScience as opposed to GISystems.

***Objectives***

By the end of the course you are expected to be familiar with some of the core concepts of geography, GeoInformatics, and GIScience such as space, geographic representation, process, scale, spatial autocorrelation, and spatial modeling. Moreover, you will learn about the theoretical foundations of tools such as spatial databases and GeoWebServices. The preliminary goal of this course is to lay the theoretical and conceptual foundations for specialized GIS courses and to broaden your view in GeoInformatics.

***Learning Outcomes***

By the end of this course, you will be able to

- Define and describe the key concepts in GeoInformatics;
- Identify fundamental theories and major development trends in GeoInformatics;
- Search, read, and analyze important journal articles in GeoInformatics and GIScience;

- Evaluate, critique, and reconcile research works in GeoInformatics and GIScience.

### ***Pre-/Co-requisites***

GTECH 70900 – Introduction to Geographic Information Systems

### ***Criteria for evaluation***

The course does not grade on a curve. If all get good grades, great! If many have mediocre grades, it will be disappointing but a big motivation to do better.

Final evaluation will be based on the following breakdown:

Abstracts and questions	20%
Presentation	20%
Participation	20%
Midterm	20%
Final	20%

### ***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 71000.

### **Course Policies**

#### ***Electronics in the classroom***

Electronic recording devices are allowed during lectures. All other personal electronics should be turned off before coming into the classroom. This includes cell and smart phones. Computers may be used for taking notes only, and if you use them for activities not related to classroom content (personal e-mails, Facebook chats, surfing the Internet...), you will be asked gently, but firmly, to turn them off.

#### ***Course Website***

*Web-enhancement* in the context of this course means that 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 materials are accessible through BlackBoard, and BlackBoard is also the place where you upload your assignments. Your exams and other 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.

#### ***Communication***

All email messages about this course should include GTECH 71000 in the subject line and be signed with your full name as it appears in CUNYfirst. Official Hunter or CUNY email addresses are expected for communication.

### ***Participation***

Attendance is crucial. Assuming that the class-learning environment is active learning, adherence to protocols and the course timetable is very important. Class participation includes timely attendance and participation in organized class and online 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 reaffirms 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 relationships. 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, or 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](mailto:jtrose@hunter.cuny.edu) or 212-650-3262) or Colleen Barry ([colleen.barry@hunter.cuny.edu](mailto: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 Link:

<http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>

## Schedule

<i>Week</i>	<i>Session</i>	<i>Date</i>	<i>Topic</i>
1	1	1/29/2019	Introduction to GeoInformatics
2	2	2/5/2019	Foundational Concepts in GeoInformatics
3		2/12/2019	<i>No Class, Hunter College Closed</i>
4	3	2/19/2019	Geospatial Data Capture and Acquisition
5	4	2/26/2019	Spatial Databases and Spatial Data Infrastructure
6	5	3/5/2019	Programming and Development
7	6	3/12/2019	Computing Platforms, GeoWeb Services, and Cloud Computing
8	7	3/19/2019	Geospatial Analytics and Modeling
9	8	3/26/2019	Geocomputation
10	9	4/2/2019	<i>Mid-Term (Exam or Review Paper)</i>
11	10	4/9/2019	Domain-specific Applications
12	11	4/16/2019	Cartography and Geovisualization
13		4/23/2019	<i>No Class, Spring Recess</i>
14	12	4/30/2019	Project Management and Professional Development
15	13	5/7/2019	Broader Societal Concerns and Implications
16	14	5/14/2019	Review, Synthesis, and Exam Review or Writing Instructions
17	15	5/21/2019	<i>Final-Term (Exam or Review Paper)</i>