

What Does the GISc Certificate Consist of?

The Certificate in Geographic Information Science requires a total of 17 credits: 14 credits in required courses, as outlined below, and a 3-credit GISc elective.

Required Courses:

GEP 204/504: Basic Mapping Science-Applications and Analysis

3 credits (2 hrs. lecture, 2 hrs. laboratory per week); Prerequisite: None
Serves as an introduction to the world of maps- how to use maps to obtain information about a wide variety of topics, and how to create maps to display and analyze quantitative and qualitative data. Laboratory work includes GISc mapping exercises.

GEP 205/505: Principles of Geographic Information Science (GISc)

3 credits (2 hrs. lecture, 2 hrs. laboratory per week); Prerequisite: Computer literacy recommended
Covers basic concepts and theories of GISc, as well as provides hands-on experience with a GISc software package for computer mapping and data analysis. Laboratory work includes database creation, generation of statistics, data analysis, and the production of thematic maps and charts. Demographic, socio-economic, environmental, land use, and health data sets will be utilized in the lab exercises.

GEP 350/605: Special Projects in GISc *

4 credits (2 hrs. lecture, 4 hrs lab per week); Prerequisite: GEP 205/505
Explores more advanced GISc spatial analyses involving modeling and simulation techniques, and their applications to ecology, environmental management, health research, urban planning, economic development, risk and hazard assessment, and other arenas of public policy and decision-making.

GEH 490/GEP 690: Workshop in GISc Research

4 credits; Prerequisite: GEP 350/605, or Departmental Permission
Focuses on research design, methodologies, and GISc project implementation. Students' projects are to be substantive and original research efforts within the parameters of the student's field of interest or specialty.



Map of land use and vegetation in Pohnpei, Micronesia, using GIS technology.

The 3-credit GISc elective course may be chosen from the following:

GEH240/GEP 640 Urban Geography GISc

GEP 632 Environmental Health GISc

GEP 321/GEP 621 Remote Sensing

GEP 375/GEP 675 Data Acquisition

GEO 340, 341/GEP 635 Natural Hazards, Disasters and Risk Analysis with GIS

GEP 199/GEP 660 Geographic Visualization and Analytical Cartography

GEP 302/GEP 602 Biogeography and GISc

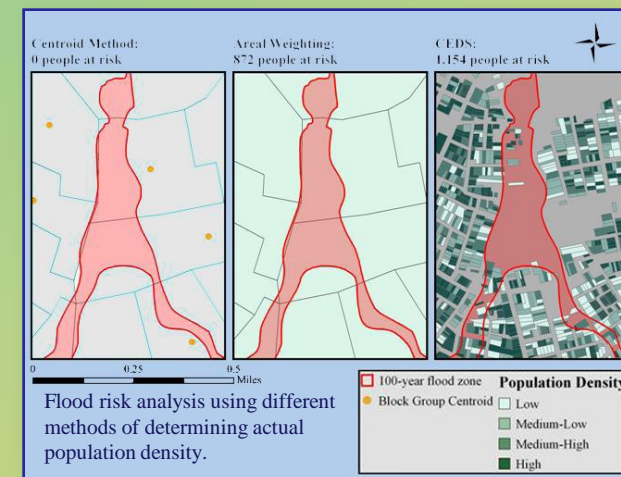
GEH 320/GEP 620 Population Geography and GISc.

* Recent topics in the *Special Projects in GISc* course include "Environmental Planning with GISc" and "Spatial Analytical Methods in GISc." Topics planned for future sessions include "GISc for Public health" and "Using GISc in Ecology."

About Lehman College:

Lehman is an independent liberal arts college of The City University of New York offering nearly 100 undergraduate and graduate degree programs. Located on an historic tree-lined campus in the northwest Bronx, the College is a cultural and recreational center for the region, with its Center for the Performing Arts, Lehman College art Gallery, and The APEX, a major new center for sports and health education. Lehman's campus is easily accessible by public transportation and major roads from Manhattan and other boroughs as well as Westchester and Rockland Counties.

www.lehman.cuny.edu
Lehman College
250 Bedford Park Blvd. W.
Bronx, NY 10468



Information on the GISc Program:

For further information on the GISc Certificate Program, visit our web site at www.lehman.cuny.edu/deannss/geography, where you will find GISc course descriptions, detailed course outlines, examples of student projects, and Frequently Asked Questions, including how to apply for the program.

Alternatively, contact Dr. Juliana Maantay, GISc Program Director, at juliana.maantay@lehman.cuny.edu.

For downloadable non-matriculated student application forms, please visit:

www.lehman.edu/provost/admissions/pdf/gradnondegreapp.pdf
(for graduate students)

www.lehman.edu/provost/admissions/pdf/undergradnonmatricapp.pdf
(for undergraduate students).

To enter the Certificate Program, students must have an Associates degree or have completed 60 college credits with a 2.0 GPA (C average). To take graduate-level courses, students must have a Bachelor's degree with at least a 3.0 GPA (B average).

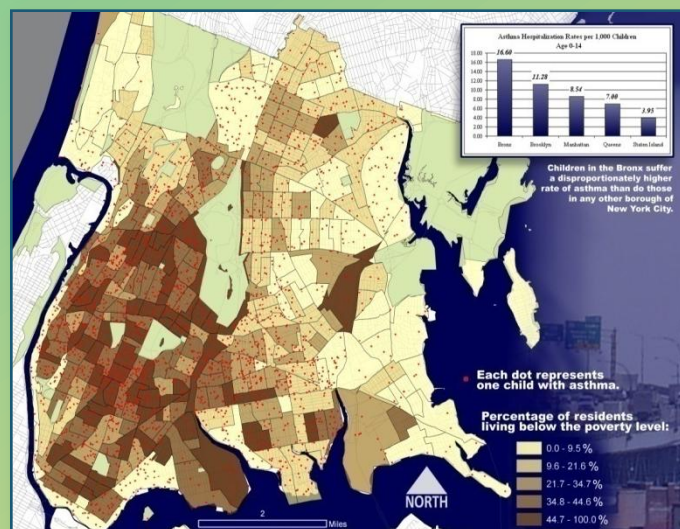
Geographic Information Science (GISc)

at Lehman College

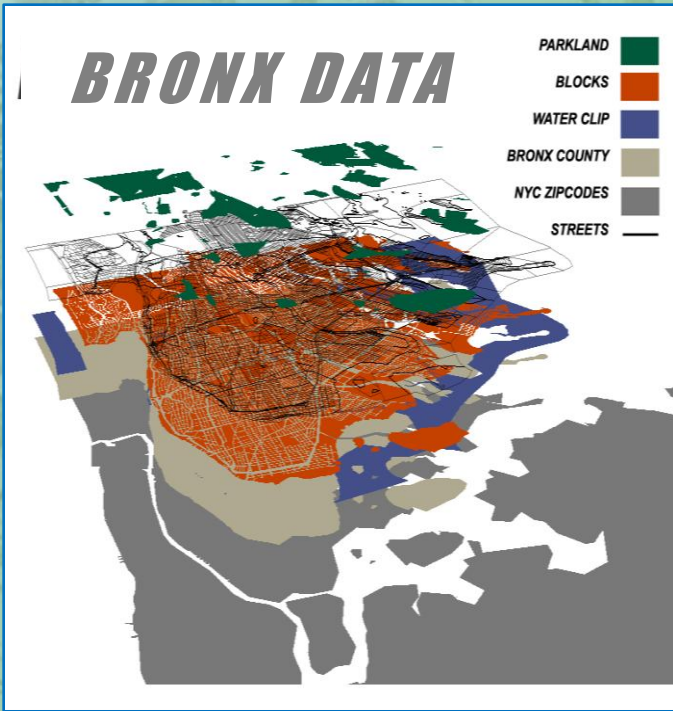
Department of Environmental, Geographic, and Geological Sciences

City University of New York CUNY

Childhood Asthma and Poverty in The Bronx, New York



Demographic study of asthma cases in Bronx children as related to household income.



A graphic representation of how data is organized into layers when constructing a GIS.

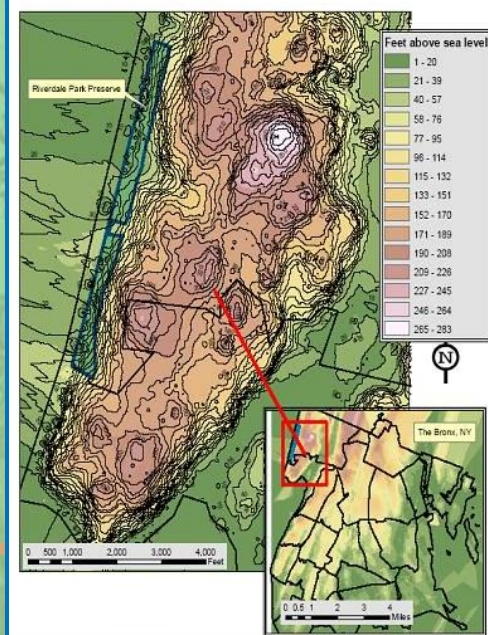
What is the GISc Certificate?

Lehman College's Department of Environmental, Geographic and Geological Sciences (EGGS) offers a Certificate in Geographic Information Science, at both the undergraduate and graduate levels. It consists of a 17-credit sequence of courses, and usually takes between 3 and 5 terms to complete. The courses are credit-bearing, and students must be admitted to Lehman College as matriculated or non-matriculated to enroll in them. Courses are usually offered in the evenings. A Certificate in GISc can be advantageous by itself, or in augmenting a undergraduate or graduate degree.

What is GISc?

Geographic Information Science (GISc) is a fast growing computer technology field involving mapping and analysis of spatial data. Geographic Information Systems (GIS) enable us to assess and manage existing conditions, and also help predict future conditions, ranging from monitoring disease occurrences, to endangered species preservation, to managing water supplies, to tracking real estate values, to crime solving.

Contours and Elevation of the Northwest Bronx



Digital modeling of land contour and elevation in the Bronx.



A. Maroko

Average Decibel Levels, Ft. Greene Park, Saturday 6:00 PM



A. Huron

Detailed analyses of air pollution concerns in New York City have been carried out at Lehman College using GIS.

Who Should Study GISc?

An understanding of GISc is vital for anyone using information that is geographically-based. This includes health services administrators, emergency management professionals, epidemiologists, ecologists, natural resource managers, hazard risk assessors, public administrators, law enforcers, environmental analysts, anthropologists, archaeologists, political scientists, sociologists, urban planners, geologists, economists, marketing professionals, and transportation planners. A working knowledge of GISc has also become an increasing useful tool for educators, particularly science teachers, as this new technology can enhance students' comprehension of complex concepts.

K. Grady



Measuring residential proximity to available locations of exercise activity in city parks.

Using GIS technology to show varying levels of noise recorded in public places.

Can the Certificate in GISc Enhance Career Opportunities?

GISc is an expanding field with excellent career opportunities, and GISc professionals are in high demand in many fields. People with GISc skills can also be more valuable as managers and analysts in their own fields. GISc is used today in fields as diverse as criminal justice, marketing, economic development, public health administration, environmental analysis, ecology, urban planning, real estate, government, and education. Lehman has also developed an Internship Program in GISc, allowing qualified students to earn credits while working in paid and unpaid GISc positions.