

LEHMAN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

Alpha Number:
Hegis Code 1214
Program Code: 30600

1. **Type of Change: Change in Degree Requirements**

2. **From:**

[The curriculum consists of 45 graduate credits and includes core courses, an area of specialization, elective graduate courses, a supervised internship, a capstone seminar and culminating project.]

Course and Credit Requirements

Core Courses (15 credits)

- PHE 600 Biostatistics in Public Health (3 cr.)
- PHE 606 Public Health Epidemiology (3 cr.)
- PHE 701 Public Health Policy and Management (3 cr.)
- PHE 702 Environmental Health (3 cr.)
- PHE 703 Social and Behavioral Dimensions of Health (3 cr.)

Specialization: Community-based Public Health and Health Equity (15 cr.)

- PHE 700 History and Philosophy of Public Health (3 cr.)
- PHE 709 Health Equity and Social Justice (3 cr.)
- PHE 710 Applications of Research Methods in Public Health (3 cr.)
- PHE 715 Community-based Public Health Program Planning and Evaluation (3cr.)
- PHE 790 Public Health Capstone Seminar (3 cr.)

Electives: (9 credits)

The Program offers skill-based, targeted electives as well as specialized content courses to be selected with the approval of the graduate adviser.

Supervised Internship (3 credits)

- PHE 770 Public Health Internship (180 hours) (3 cr.)

Capstone Seminar (3 credits)

- PHE 792 Public Health Capstone Project (3 cr.)

3. To:

The Lehman MPH Program offers two specializations: one in Community-Based Public Health and Health Equity; and a second in Public Health Geographic Information Science. The community-based public health and health equity track focuses on health equity and social justice with emphasis on program planning and evaluation, and research methods. The public health geographic information science track offers courses in spatial analysis, computer-assisted cartography, geostatistics, and exploration and interpretation of geographic data as applied to public health, environmental justice and health equity. Internships and culminating experiences prepare students for careers as practitioners and researchers, or for pursuing doctoral degrees.

Course and Credit Requirements

Core Courses (15 credits)

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- PHE 715 Community-based Public Health Program Planning and Eval. (3cr.)
- PHE 790 Public Health Capstone Seminar (3 cr.)

Specialization: Public Health Geographic Information Science (15 cr.)

- PHE 704 Environmental Health GIScLab (co-requisite with PHE 702) (1 cr/1hr)
- PHE 705 Principles of GISc for Public Health (3 cr/4 hr)
- PHE 706 Spatial Analysis and Environmental Modeling for Public Health (4 cr/6hr)
- PHE 717 The Geography of Urban Health (3cr/4 hr)
- PHE 791 Workshop in GISc Research for Public Health (4 cr/4hr)

Electives: (9 credits)

The Program offers skill-based, targeted electives as well as specialized content courses to be selected with the approval of the graduate adviser.

Supervised Internship (3 credits)

- PHE 770 Public Health Internship (180 hours) (3 cr.)

Capstone Seminar (3 credits)

- PHE 792 Public Health Capstone Project (3 cr.)

4. Rationale (Please explain how this change will impact learning goal and objectives of the department and Major/Program):

We are proposing to offer a new specialization track within the MPH program at Lehman College in *Public Health Geographic Information Science*. Geographic Information Science (GISc) has become one of the major disciplines involved in analysis of environmental health justice and other public health issues, and is poised to become an increasingly integral part of all health research, planning, and practice endeavors having a spatial component.

It has become crucial to train public health professionals who can perform research, analyses, and predictive modeling on the spatial aspects of environmental and health issues. This specialization track will prepare students to do so and to enable them to take their place in health care institutions, non-profit organizations, and governmental agencies, as well as in academia. Students in the CUNY School of Public Health who are able to develop capabilities to use GIS for public health applications, even if they are not enrolled in the “GISc Specialization,” are likely to be more “marketable” as can be seen by job opportunities in both public and private sectors.

The Lehman College campus of the CUNY School of Public Health is particularly well suited to house a track in Public Health Geographic Information Science for three main reasons: (1) the GISc expertise is already in place on the campus with faculty associated with the MPH program, the graduate-level GISc certificate program (which has a focus on urban health and environmental justice), and the Department of Environmental Geographic, and Geological Sciences; (2) the physical infrastructure is already in place with a 25-seat computer lab running ArcGIS 10.x. and other spatial analysis software; and (3) this track incorporates environmental health justice which is related to health equity, the other Lehman MPH specialization.

There are very few Public Health Schools offering a fully-developed concentration specialization track in GISc. The proposed track in Public Health Geographic Information Science would very likely be the first of its kind on the east coast, and the first anywhere to offer a track linking environmental health justice and GISc.

5. Date of Department Approval: October 12, 2011

LEHMAN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

Alpha Number:

1. **Type of Change:** New Course

2. **Course Description:** PHE 704 Environmental Health GIScLab
(co-requisite PHE 702) *1 hour, 1 credit*

Application of GISc to examine and analyze environmental health, population, and natural and built environmental data for planning and research. Co-req: PHE 702

3. **Rationale**

This lab class allows students to apply GISc to environmental health projects.

4. **Learning Objectives**

By the end of this course, students will be expected to:

- Utilize concepts in Geographic Information Science for identification and assessment of the associations between disease and environment (social, natural, or built)
- Apply GIS to retrieve, analyze and summarize health data
- Create simple cartographic products depicting issues related to environmental health, using GISc.

5.. **Date of departmental approval: October 12, 2011**

LEHMAN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

1. Type of Change: New Course

2. Course Description: PHE 705 Principles of GISc for Public Health. *4 hours, 3 credits*

The use of Geographic Information Systems relating to public health in the teaching of social, earth, and life sciences. Demographic studies and graphic presentation of demographic analyses. The use of modern mapping techniques in studies of the Earth Environment with emphasis on environmental health and environmental justice.

3. Rationale

As a core course in the new specialization of Public Health Geographic Information Science, this course gives students the principles needed for using GISc to identify and examine public health issues related to environmental health and environmental justice.

4. Learning Objectives

By the end of this course, students will be expected to:

- Apply concepts in Geographic Information Science to spatial health data
- Conduct simple spatial analyses of health data
- Create map layouts and other cartographic products suitable for publication

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DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

1. Type of Change: New Course

2. Course Description: PHE 706 Spatial Analysis and Environmental Modeling for Public Health. *6 hours, 4 credits*

Use of Geographic Information Systems for conducting research and spatial analyses in the natural and social sciences with emphasis on public health. The advanced use of computer mapping and spatial analysis technologies for studying the physical and human components of the earth's environment. PREREQ: PHE 705 or Departmental permission.

3. Rationale

As a core course in the new Public Health Geographic Information Science curriculum, PHE 706 will provide the students with advanced concepts in spatial analysis and modeling. Additionally it will help make the students comfortable with more computationally intensive methods and analyses for addressing public health and environmental issues within GISc.

4. Learning Objectives

By the end of the course, students will be expected to:

- Apply advanced concepts in environmental modeling
- Conduct complex spatial analyses of health data using GISc
- Design a formal project proposal using GISc to examine a public health issue that will be carried out in PHE 791 Workshop in GISc Research for Public Health.

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DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

1. Type of Change: New Course

2. Course Description: PHE 717 The Geography of Urban Health. *4 hours, 3 credits (2, lecture; 2, lab).*

A geographical examination of urban health including the historical perspective of health geography; mapping and spatial analysis of health and health impacts; the social and spatial patterning of health; the geography of health inequalities and disparities; health and social/spatial mobility; and the effects of urban segregation, overcrowding, and poverty on disease illustrated through GISc laboratory exercises. PREREQ: PHE 705 or Departmental permission.

3. Rationale

As a core course in the new Public Health Geographic Information Science curriculum, PHE 717 gives the students the opportunity to understand, identify, and analyze public health issues using advanced techniques in medical geography, health geography, and environmental health justice analyses within an urban context.

4. Learning Objectives

By the end of the course, students will be expected to:

- Apply advanced concepts of the use of GISc as it relates to Urban Health
- Understand the history of medical geography / health geography, particularly as they relate to urban environments
- Analyze and represent health data, cadastral data, socio-demographic data, and environmental data using GISc.
- Create publication-quality maps with urban health topics
- Evaluate the principles of the spatial properties of inequity, injustice, and heterogeneity as they pertain to health geography in urban environments

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DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

1. Type of Change: **New Course**

2. Course Description: PHE 791 Workshop in GISc Research for Public Health . 3 or 4 hours, 3 or 4 credits (course may be repeated for a total of 8 credits).

An advanced examination of mapping and of new computer-aided technologies in the natural and social sciences, including research design and methodology and designing and conducting an independent GIS public health research project, conforming to generally acceptable professional geographical practices and techniques, under the supervision of faculty. PREREQ: PHE 706 or Departmental permission

3. Rationale

As a core course in the new Public Health Geographic Information Science curriculum, students will explore advanced concepts and methods in public health GISc through a research project and presentations (conceptualized in PHE 706) that relate directly to their areas of interest. This will enable the students to synthesize theories and methods in public health GISc as well as effectively communicate public health information (oral, written, and visual).

4. Learning Objectives

By the end of the course, students will be expected to:

- Write and research a literature review of a public health topic
- Design and implement a GIS-based methodological approach to understand a public health issue.
- Complete a formal research project centering on the spatial analysis of a public health issue.

5.. **Date of departmental approval: October 12, 2011**