

**LEHMAN COLLEGE
OF THE CITY UNIVERSITY OF NEW YORK**

DEPARTMENT OF HEALTH SCIENCES

CURRICULUM CHANGE

Name of Program and Degree Award: MPH Program

Hegis Number: 1214

Program Code: 30600

Effective Term: Fall 2015

1. **Type of Change:** *Change in Degree Requirements: addition of Public Health Geographic Information Science Concentration*

2. **From:** **M.P.H. Program in Public Health**

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.
- In addition, the MPH Program offers an optional concentration in Maternal Child Reproductive Sexual Health (MCRSH). The purpose of this concentration is to guide students towards an integrated view of the contribution of maternal, child, reproductive and sexual health to population health through a wide array of courses. This concentration can be taken in conjunction with either specialization.

Internships and culminating experiences prepare students for careers as practitioners and researchers, or for pursuing doctoral degrees.

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 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)

Optional Concentration in Maternal Child Reproductive and Sexual Health (MCRSH)

The Maternal Child Reproductive Sexual Health (MCRSH) Concentration within the CUNY SPH Master of Public Health (MPH) degree is designed to enable students to focus on maternal, child, reproductive and sexual health issues within public health from a variety of perspectives, encompassing the sociological, political, familial and biological.

All students in this concentration will take the public health core and specialization requirements, they will also take two required common MCRSH courses, chose one MCRSH elective and undertake both Fieldwork and Capstone courses in the field of MCRSH.

Required Concentration Courses:

- Maternal, Child, Reproductive and Sexual Health: Socio-historical Contexts (PHE 725 or PH725 - CUNY Graduate Center or COMHE 77025 – Hunter SPH Course)
- Maternal and Child Health A Life Course Perspective (EPI 77003 - Hunter SPH Course, or PHE 724)
- Elective to be selected with faculty advisement.

The nine credits required for the MCRSH concentration count toward the twelve credits of electives.

Electives: (12 credits)

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

Supervised Internship (3 credits)

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

3. **To:**

M.P.H. Program in Public Health

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.
- In addition, the MPH Program offers an optional concentration in Maternal Child Reproductive Sexual Health (MCRSH). The purpose of this concentration is to guide students towards an integrated view of the contribution of maternal, child, reproductive and sexual health to population health through a wide array of courses. This concentration can be taken in conjunction with either specialization. Internships and culminating experiences prepare students for careers as practitioners and researchers, or for pursuing doctoral degrees.

Core Courses (15 credits)

- PHE 600 Biostatistics in Public Health (3 cr.)
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Optional Concentration in Maternal Child Reproductive and Sexual Health (MCRSH)

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All students in this concentration will take the public health core and specialization requirements, they will also take two required common MCRSH courses, chose one MCRSH elective and undertake both Fieldwork and Capstone courses in the field of MCRSH.

Required Concentration Courses:

- Maternal, Child, Reproductive and Sexual Health: Socio-historical Contexts (PHE 725 or PH725 - CUNY Graduate Center or COMHE 77025 – Hunter SPH Course)
- Maternal and Child Health A Life Course Perspective (EPI 77003 - Hunter SPH Course, or PHE 724)
- Elective to be selected with faculty advisement.

The nine credits required for the MCRSH concentration count toward the twelve credits of electives.

Optional Concentration in Public Health Geographic Information Science (PHGISc)

The Public Health Geographic Information Science (PHGISc) Concentration within the CUNY SPH Master of Public Health (MPH) degree is designed to enable students to focus on spatial analysis, computer-assisted cartography, geostatistics, and exploration and interpretation of geographic data as applied to public health, environmental justice, and health equity in addition to their chosen specialization. The purpose of this concentration is to guide students in viewing public health from a social-ecological perspective, as well as providing MPH graduates with marketable skills in GIS.

All students in this concentration will take the public health core and the specialization requirements. In addition, they will take three required PHGISc courses and undertake both Fieldwork and Capstone(with a PHGISc faculty as mentor, advisor, or reader) courses in the field of PHGISc.

Required Concentration Courses:

- PHE 705: Principles of GISc (3 credits) (which may be waived if the student demonstrates previous equivalent GISc coursework or experience; coursework, such as GEP 630/PHE 718 (Geostatistics and Spatial Analytical Concepts), GEP 620/PHE 719 (Demography and Population Geography with GISc), or another GISc related course may be substituted with the approval of the PHGISc concentration coordinator)
- PHE 706: Spatial Analysis and Environmental Modeling (4 credits)
- PHE 717: The Geography of Urban Health (3 credits)

The ten credits required for the GISc concentration count toward the twelve credits of electives.

Electives: (12 credits)

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

Supervised Internship (3 credits)

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

4. Rationale:

We are proposing to offer a new concentration within the CUNY School of Public Health 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 concentration 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 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 concentration in Public Health Geographic Information Science for two main reasons: (1) the GISc expertise is already in place on the campus with faculty associated with the Lehman MPH program’s PHGISc specialization and (2) the physical infrastructure is already in place with a 25-seat computer lab running ArcGIS 10.x. and other spatial analysis software.

This concentration is being developed for CUNY MPH students who are already enrolled in other specializations, such as Lehman College’s MPH Program’s Community Based Public Health and Health Equity and Hunter College MPH Program’s Epidemiology/Biostatistics and Environmental Health, who have an interest in developing their skills in GISc systematically.

5. **Date of departmental approval: 9/10/14**

**LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF HEALTH SCIENCES
CURRICULUM CHANGE**

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

2.

Department(s)	Health Sciences
Career	<input type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Graduate
Academic Level	<input checked="" type="checkbox"/> Regular <input type="checkbox"/> Compensatory <input type="checkbox"/> Developmental <input type="checkbox"/> Remedial
Subject Area	Public Health
Course Prefix & Number	PHE 718
Course Title	Geostatistics and Spatial Analytical Concepts
Description	Emerging fields of geospatial statistics, applying quantitative techniques to real-world geographic problems and public health issues. Concepts and application of exploratory spatial data analysis (ESDA), traditional statistics and geospatial statistics within various software packages, including GeoDa, ArcGIS, [R], and Excel.
Pre/ Co Requisites	
Credits	3
Hours	4 (2 hours, lecture; 2 hours, lab)
Liberal Arts	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Course Attribute (e.g. Writing Intensive, WAC, etc)	
General Education Component	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science <input type="checkbox"/> Flexible <input type="checkbox"/> World Cultures <input type="checkbox"/> US Experience in its Diversity

	_____ Creative Expression
	_____ Individual and Society
	_____ Scientific World

3. Rationale:

This course will be utilized as an elective for the MPH Program, in particular the Public Health Geographic Information Science specialization and concentration. It will provide students with an introduction to geographic quantitative analysis techniques, using a variety of software packages. The competencies and computational skills obtained are part of what distinguishes professional from casual GIS users.

4. Learning Outcomes (By the end of the course students will be expected to):

- Clearly present geospatial patterns of quantitative measurements through thematic and other types of symbolic mapping, using appropriate cartographic techniques;
- Identify and apply appropriate statistical methods to accompany maps and other graphical presentations of data in order to objectively determine the significance of geospatial and spatiotemporal patterns and associations;
- Know when and how to apply quantitative geospatial analysis for helping to solve the information needs that arise from real-world challenges, particularly from environmental and public health issues;
- Understand the limitations of geospatial analysis, especially the potential for different, conflicting, messages that depend on choice of mapping and analysis parameters; and
- Present geospatial analyses through a written paper and/or an oral presentation that clearly and concisely expresses a problem, the methodology to address the problem, the analytical and graphical results, and finally to summarize and explain the meaning of results in plain language for a mixed audience.

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Career	<input type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Graduate
Academic Level	<input checked="" type="checkbox"/> Regular <input type="checkbox"/> Compensatory <input type="checkbox"/> Developmental <input type="checkbox"/> Remedial
Subject Area	Public Health
Course Prefix & Number	PHE 719
Course Title	Demography and Population Geography with GISc.
Description	The world's population in the context of geography and demography. The theoretical framework, defined by the fields of population geography and demography, will be studied and explored qualitatively and quantitatively and will be applied to public health issues. Data sources and acquisition, population metrics (growth, change distribution, and composition), population and food supply, mortality, fertility, and migration. Lab work will provide students with hands-on experience using GISc to explore demographic concepts.
Pre/ Co Requisites	
Credits	3
Hours	4 (2 hours, lecture; 2 hours,lab)
Liberal Arts	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Course Attribute (e.g. Writing Intensive, WAC, etc)	
General Education Component	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Required <input type="checkbox"/> English Composition <input type="checkbox"/> Mathematics <input type="checkbox"/> Science <input type="checkbox"/> Flexible <input type="checkbox"/> World Cultures <input type="checkbox"/> US Experience in its Diversity <input type="checkbox"/> Creative Expression <input type="checkbox"/> Individual and Society <input type="checkbox"/> Scientific World

3. Rationale:

This course will be utilized as an elective for the MPH Program, in particular the Public Health Geographic Information Science specialization and concentration. It will provide students with an understanding of the intersection of demography and geography, while using GISc to explore environmental health and environmental justice issues. The competencies, including experience working quantitatively with census and other data, are critical for public health research in general and spatial epidemiology in particular.

4. Learning Outcomes (By the end of the course students will be expected to):

- Explain different types of population growth over time;
- Quantify and predict population change;
- Explain different theories of population change;
- Explain different types of migration;
- Characterize population composition both qualitatively and quantitatively;
- Calculate both raw and age-adjusted fertility and mortality rates;
- Explain different pressures that drive population patterns;
- Identify sources of population, demographic and geographic data;
- Create publication-quality maps that allow clear geo-visualization of human population and demographic patterns

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