LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF EARTH, ENVIRONMENTAL, AND GEOSPATIAL SCIENCES

CURRICULUM CHANGE

1. Type of change: New Course

2. Course Description:

GEP 645: Water Resources, Hydrology, and GISc Analysis (5 hours, 4 credits)
Principles of hydrology and water resources; analysis of hydrologic data using open-source and commercial Geographic Information Systems (GIS). Statistical and spatial analysis, mapping of critical hydrologic conditions, coupling GIS with hydrologic data analysis and modeling. Prerequisite: GEP504 or GEP505

3. Rationale:
This course is designed for students to gain experience in integrating hydrologic data with spatial analysis and mapping using GIS. A thorough understanding of mapping, spatial analysis, and new computer-aided geo-statistical methodologies is critical within many water resources management disciplines. At the same time, GIS practitioners should be knowledgeable in hydrology and water resources disciplines to make their applications professionally reliable. This course is intended to serve as one of the electives in the EEGS Department's graduate level certificate program in Geographic Information Science (GISc), and the new Master's degree program in GISc. The material presented in the course requires introductory practical skills with GIS software.

4. Learning Objectives:

At the successful completion of this course, students will be able to:

- Understand principles and background of hydrology and water resources;
- Improve computer literacy through work with open-source hydrologic application of GIS;
- Use web-based data portals for class projects; and
- Integrate primary hydrologic data with GIS technology.

5. Date of Departmental Approval: February 3, 2014

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CURRICULUM CHANGE

1. Type of change: Experimental Course

2. Course Description:

GEP 645: Water Resources, Hydrology, and GISc Analysis (5 hours, 4 credits)
Principles of hydrology and water resources; analysis of hydrologic data using open-source and commercial Geographic Information Systems (GIS). Statistical and spatial analysis, mapping of critical hydrologic conditions, coupling GIS with hydrologic data analysis and modeling. Prerequisite: GEP504 or GEP505

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This course is designed for students to gain experience in integrating hydrologic data with spatial analysis and mapping using GIS. A thorough understanding of mapping, spatial analysis, and new computer-aided geo-statistical methodologies is critical within many water resources management disciplines. At the same time, GIS practitioners should be knowledgeable in hydrology and water resources disciplines to make their applications professionally reliable. This course is intended to serve as one of the electives in the EEGS Department's graduate level certificate program in Geographic Information Science (GISc), and the new Master's degree program in GISc. The material presented in the course requires introductory practical skills with GIS software.

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At the successful completion of this course, students will be able to:

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- Improve computer literacy through work with open-source hydrologic application of GIS;
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- Integrate primary hydrologic data with GIS technology.

5. Date of Departmental Approval: February 3, 2014

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CURRICULUM CHANGE

1. **Type of Change:** Hours, Credits

2. **From:** **GEO 697 Independent Study in Geology**
[1-3 hours, 3 credits.**]** Independent study of selected topics in geology under the guidance of a faculty member. **[**PREREQ:**]** Permission of the Graduate Adviser

3. **To:** **GEO 697 Independent Study in Geology**
2-6 hours, variable 2-6 credits, may be repeated for up to 6 credits. Independent study of selected topics in geology under the guidance of a faculty member. Number of credits to be determined in consultation with faculty advisor prior to registration. Permission of the Graduate Adviser required.

4. **Rationale:**

This change will allow greater flexibility in the type and duration of projects in which students may engage. The number of credits will be determined by the supervising faculty member, in agreement with the student prior to registration as follows: one credit for every 15 hours of instruction and/or fieldwork.

A two-credit example might be a field-based investigation in which students carry out guided fieldwork on an established problem or one of their inventions and write a field report. A six-credit example might be participation in an approved three-week field camp and completion of a mapping project and report.

This course also will be used to offer four credits to Lehman students participating in and completing assigned work for the 60-hour Earth and Space Sciences Institute at the American Museum of Natural History.

5. **Date of departmental approval: 9 Oct 2012**