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.

Department(s)	Earth, Environmental, and Geospatial Sciences
Career	[ ] Undergraduate [X] Graduate
Academic Level	[X] Regular [ ] Compensatory [ ] Developmental [ ] Remedial
Subject Area	GEP
Course Prefix & Number	GEP 515
Course Title	Principles and Applications of Geospatial Artificial Intelligence (GeoAI)
Description	Fundamentals of Geospatial Artificial Intelligence (GeoAI), including machine learning with a focus on intermediate applications of AI to geospatial data in research and real-world problems.
Pre/ Co Requisites	GEP 504, 505 OR Departmental Permission
Credits	3
Hours	4 (2 Lecture, 2 Lab)
Liberal Arts	[ ] Yes [X] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	
General Education Component	__X_ Not Applicable ____ Required ____ English Composition ____ Mathematics ____ Science ____ Flexible ____ World Cultures ____ US Experience in its Diversity ____ Creative Expression ____ Individual and Society ____ Scientific World

3. **Rationale:**
Geospatial artificial intelligence (GeoAI) is a rapidly emerging area of innovation and workforce demand adjacent to Geographic Information Science (GISc) with a broad range of applications in Environmental Science, Earth Science, and Geography. As geospatial data from satellites, sensors, and mobile devices grow rapidly, AI and machine learning offer powerful tools for analyzing these large, complex datasets. There is a growing need for professionals who can bridge GISc skills with foundational data science and AI skills. This introductory course addresses this need in EEGS' programs' offerings.

4. **Learning Outcomes (By the end of the course students will be expected to):**
1. Demonstrate ability to communicate effectively the fundamental and intermediary concepts and methods in Geospatial Artificial Intelligence (GeoAI).
2. Write scripts to process, analyze, and visualize geospatial data using GeoAI libraries.
3. Apply basic and intermediary GeoAI methods to address research questions and real-world applications.
4. Evaluate the performance of GeoAI methods.
5. Visualize data and analysis results using GeoAI.
6. Develop reproducible GeoAI workflows through clear documentation and well-structured code.
7. Demonstrate ability to communicate effectively the ethical implications of GeoAI applications, including bias, privacy, and environmental impact.
8. Complete a project applying GeoAI methods to address a real-world problem.

5. **Date of Departmental Approval:** September 24, 2026