THE UNIVERSITY OF HONG KONG

Credit Unit Statement (CUS) of Taught Programmes

Faculty / Offering Unit: Faculty of Social Sciences/ Department of Geography

Programme title: Master of Science in Geospatial Data Science

Applicable student cohort(s): 2024-25 and thereafter

The Master of Science in Geospatial Data Science curriculum requires a total of 60 credits, including 30 credits of compulsory courses, 18 credits of elective courses, and a 12-credit capstone project which are taught using distinctive learning modes. The total study load of the curriculum is around 1,500 hours, inclusive of about 300 contact hours.

All courses are 6-credit courses, except the 12-credit capstone project. Although 150 hours of student learning activity (including both contact hours and all other forms of student learning activity) are the norm for 6-credit courses, the contact hours and output requirements for different types of courses vary according to the learning modes employed. Normally, the contact hours for a standard 6-credit course range from 30 to 36 hours.

Compulsory courses cover topics such as geospatial data analysis, spatial statistics, remote sensing and geographic information systems (GIS), and incorporate six mandatory Geospatial Data Science Seminars. Elective courses allow students to specialize in areas such as Web GIS, drones, cloud computing, climate change and sustainable development. The capstone project involves a project that applies geospatial data science to a real-world problem.

Based on the content and primary teaching methods, there are __3__ categories of courses in this programme, as outlined below:

1. **[Thematic courses]** (6 credits per course)

These courses focus on thematic contents and introduce subject-specific skills and knowledge in the field of geospatial data science. Students are taught by a combination of lectures (36 hours), class discussions, exercises, and presentation. For compulsory courses, students will be introduced core knowledge of geospatial data science including data types, characteristics, models, and applications. For elective courses, students can choose to learn knowledge and skills related to geographic spatial data applications based on their interests and the field of study they are interested in. Assessment of compulsory and elective courses is generally by means of end-of-semester examination and/or a variety of coursework

assignments including short essays with output not exceeding 3,000 words (60-100% coursework, 0-40% exam).

2. [Laboratory-based courses] (6 credits per course)

These courses aim to introduce and enrich the students' discipline-specific skills on using geospatial analysis software, including ArcGIS, QGIS, and Google Earth Engine. They are taught by a combination of lectures and laboratory-based practicals (with contact hours ranging from 30 to 36 contact hours). Assessment is by practical assignments, and group and individual projects with output not exceeding 3,000 words (100% coursework).

3. [Capstone experience course] (12 credits)

The capstone experience course is designed to develop students' ability to collect, process, and analyze geospatial datasets to solve real-world problems. Each student must undertake a project as a demonstration of his/her competence in geospatial data science. Students are taught through lectures, presentations, discussions, as well as a minimum of 10 meetings with their supervisors, totaling around 300 learning hours including 30 contact hours. The data and materials for this project can originate from an internship or relevant work experience at the student's current employer. The Department of Geography will work with each student individually to determine the best mechanism for obtaining the necessary data and experience. Under the direction of a faculty advisor, the student will prepare a project report which shall contain an explanation of the requirements for the work, a technical account of the activities undertaken, including a literature review, a description of the methods and approaches taken, a critical discussion of the results obtained, along with conclusions and recommendations developed from the project. The final project will consist of a full geospatial data analysis report, and each student will need to give a presentation and a report (of at least 5,000 words) on a specific topic on using geospatial data to analyze climate, environmental, economic, and social issues as part of the formal assessment (100% coursework).