

## COURSE DESCRIPTIONS 科目簡介

### COURSES FOR TAUGHT POSTGRADUATE PROGRAMMES

#### **SCI501 Geospatial Intelligence for Sustainable Development (from Term 1, 2024-25) / Location Intelligence (2023-24 or before) (3 credits)**

The United Nations has recognised the use of geospatial data and earth observation in advancing and achieving the SDGs. The aim of this course is to learn about the geographic foundations of GIS, location intelligence and remote sensing. The contents cover how GIS and earth observation facilitate geospatial data analysis and communication to address complex geographic concepts or problems. Understanding how geospatial analytics, combined with AI and IoT technology could practically support professionals, NGO's and governments to analyse geospatial data from multiple sources to monitor the progress of the SDGs and empower understanding, insight, intelligent decision-making and prediction. Cutting-edge topics and applications of sustainable development will be introduced. The ethical, legal, and societal issues in the field will also be examined and addressed. This course combines classroom teaching and hands-on tutorials to learn GIS analytical and remote sensing skills through practice.

#### **SCI502 Climate Change Literacy and Science (3 credits)**

This course provides an overview of issues related to climate change. The course comprises a series of 3-hour lecture and discussion sessions, as well as field trips. Lectures will cover topics such as causes and consequences of climate change, responses and actions of climate change, the controversial issues and climate solutions, and the needs of sustainable development.

#### **SCI503 Sustainability and Environmental Communication (3 credits)**

This course will introduce students to environmental communication, an interdisciplinary field that considers the communication of information to encourage the establishment of best practices related to environmental issues and sustainable development.

The course comprises a series of 3-hour lecture and discussion sessions. Lectures will cover topics under the framework of UN SDGs and analyse scientific arguments related to environment and sustainability issues. It will also train students to communicate effectively about the issues with a variety of stakeholders in a variety of circumstances.

#### **SCI504 Urban Ecology and Sustainable Planning (3 credits)**

This course examines how urban ecology, the science that examines the interactions between organisms and the urban environment, can help identify strategies to achieve a balance between human needs and the natural environment and encourage sustainable development. The course will focus on environmental and sustainability issues, particularly on the interactions between wildlife and humans in an urban environment. The course comprises a series of 3-hour lecture and discussion sessions, as well as field trips. Lectures will cover topics such as human-wildlife interactions in urban environments, the controversial issues, critical environmental challenges, urban sustainability, sustainable communities design and urban planning.

#### **SCI505 Introduction to Environmental, Social and Governance (ESG) Planning (3 credits)**

This course provides an overview of the global trend in Environmental, Social and Governance (ESG) reporting and sustainability performance in commercial sectors under the framework of UN Sustainable Development Goals (UN SDGs). The course comprises

a series of 3-hour seminars and discussion sessions, as well as field trips. Guest speakers and industrial practitioners of related fields, such as ESG partners, sustainability managers, and risk advisory will be invited to share ESG trends and practice. Small group field trips will also be arranged. Other learning activities include case studies, media reviews and data analyses.

### **SCI507 Data Analysis and Modelling in the R Statistical Environment for Environmental Issues (3 credits)**

Data has been likened to oil. While they are valuable in almost all facets of modern life, data cannot be used unrefined. This course aims to equip students with the ability and tools to analyse quantitative data on the R statistical environment, a versatile and powerful free software widely used by researchers globally. Lectures will comprise of 1.5 hours of theory, followed by 1.5 hours of practical learning using simulated datasets related to environmental issues, sustainability and/or SDGs. By the end of the course, students should be comfortable with gaining meaningful insights from raw/unrefined data through independent analyses of statistical trends and patterns. This will better prepare students for their research projects and eventual career that requires proficient data analytical skill.

### **SCI508 Practical and Research Training: Topics in Environment, Society, and Sustainable Future (3 credits)**

This course introduces students with practical and research techniques in various fields of environmental science, focusing primarily on ecological surveys and environmental monitoring. The course will adopt a blended, experiential approach by combining lectures and field trips to enhance students' practical skills in both the field and laboratory setting, as well as application of survey designs. Lectures will cover basic sampling designs, descriptive statistics, species identification and report writing, which would be practised through conducting field-based surveys and sampling in various ecosystems in Hong Kong.

### **SCI509 Green Energy and Sustainability (3 credits)**

The course introduces students to the fundamental principles of environmental engineering, and clean and renewable energy. Students will gain comprehensive knowledge regarding the production, distribution, challenges, and future prospects of renewable energy within the framework of a smart and sustainable society. The course will also examine the economic, sociological, and environmental aspects of renewable energy, allowing students to develop a deep awareness of its multifaceted nature.

The course comprises a series of 3-hour lecture and discussion sessions. Lectures will address topics related to green energy and various renewable energy technologies under the framework of UN SDGs. There will be a presentation of practical international case studies for each technology. The human behaviour and socio-economic consequences during the sustainable energy transitions will be discussed and evaluated.

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