



香港中文大學理學院

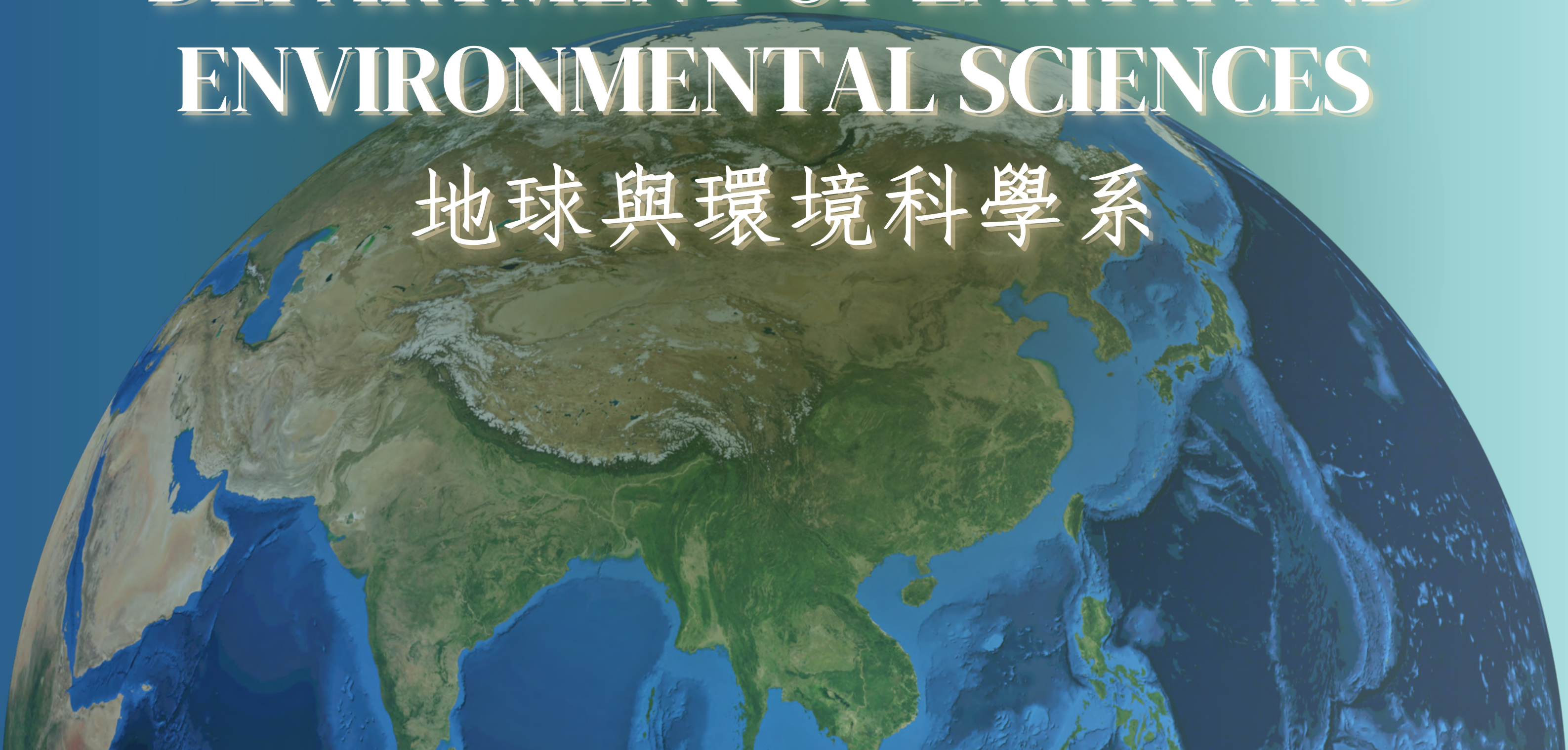
FACULTY OF SCIENCE

THE CHINESE UNIVERSITY OF HONG KONG



**DEPARTMENT OF EARTH AND
ENVIRONMENTAL SCIENCES**

地球與環境科學系





DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES

GET TO KNOW US

Earth and Environmental Sciences (EES) is for students interested in the scientific understanding of the interactions between the Earth’s atmosphere, geosphere, biosphere and hydrosphere. We study real-world problems affecting the Earth’s environment, such as global climate change, natural hazards and anthropogenic pollution through an interdisciplinary approach integrating applied physics, chemistry, biology, statistics, computation and machine learning. Our mission is to equip students with an in-depth scientific background and the latest technical skills to observe, identify, understand, analyse and address these critical problems.

ADMISSION

JUPAS applicants could become an EES student at CUHK through JS4648 or JS4601 (Broad-based Admission Scheme under the Faculty of Science):

EARTH AND ENVIRONMENTAL SCIENCES (JUPAS CODE: JS4648)

SCIENCE BROAD-BASED ADMISSION SCHEME (JUPAS CODE: JS4601)

HKDSE Subjects	Minimum Scores
Elective Subject 1*	Level 4
English, Chinese, Maths, Elective Subject 2^	Level 3
Citizenship and Social Development	A (Attained)

Major Declaration

Science students can declare EES as Major at any of the following three time points (Beginning of Year 1, End of Year 1 and End of Year 2), provided that they meet the stated requirements.

Students can have an early start in taking major courses!

EES Students

Remarks: Bonus points would be offered to up to two extra subjects in Category A.

* One of the following subjects: Biology, Chemistry, Physics, Mathematics (Module 1 or 2) and Geography.

^ Any one subject in Category A.

OUR STREAMS AND COURSES

Students have the option to specialise in the following streams to suit their background, interests and career objectives: (i) **Atmospheric Science (ATM)**, (ii) **Geology and Geophysics (GEO)**, and (iii) **Environmental Science and Technology (EST)**.

❖ Atmospheric Science Stream (ATM) ❖

Atmospheric Science is the study of the physical and chemical processes governing the Earth's atmosphere. It focuses on phenomena relevant for understanding weather, climate and atmospheric composition, their variability and changes, and their interactions with the hydrosphere, geosphere and biosphere.

Land-Atmosphere Interactions and Boundary-Layer Meteorology

Tropical Meteorology

Cloud Dynamics

Atmospheric Chemistry

Ecosystems and Climate

Oceanography

Air Pollution Science and Engineering

Atmospheric Dynamics

Physics and Chemistry of Aerosol



❖ Geology and Geophysics Stream (GEO) ❖

Geology and Geophysics is the study of the solid Earth, including its formation history, physical properties, and active processes, through integrating remote sensing, seismic, field, and numerical modelling techniques.

Remote Sensing

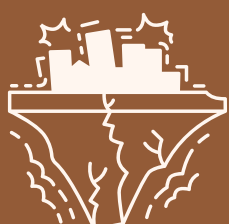
Soil Mechanics

Rock Mechanics

Engineering Geology

Structural Geology

Geoscience Field Trip



Applied Geophysics

Seismology

Hydrogeology

Physics of the Earth

Geodynamics

Geochemistry

Petrology

Volcanoes

Geomorphology

Minerals and Natural Resources



❖ Environmental Science and Technology Stream (EST) ❖

Environmental Science and Technology integrates fundamental concepts from chemistry and biology to address and mitigate environmental challenges. Our curriculum is accredited by the Hong Kong Institute of Qualified Environmental Professionals (HKIQEP).

Environmental Toxicology

Environmental Protection & Pollution Control

Environmental Health

Biogeochemistry

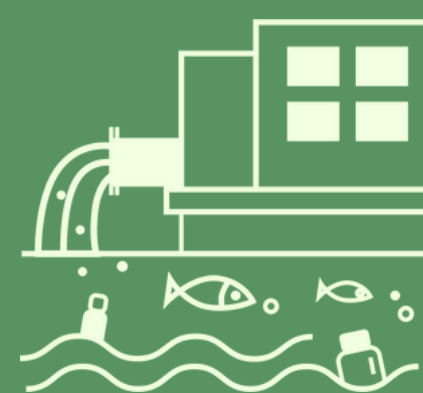
Environmental Microbiology

Environmental Instrumentation Techniques

Environmental Impact Assessment

Environmental Chemistry

Chemical Treatment Processes



The EST stream in the EES was accredited by the Hong Kong Institute of Qualified Environmental Professionals (HKIQEP) in 2023, indicating the programme meets rigorous environmental education and training standards. Accreditation by HKIQEP will provide our programme with the following benefits:

- **Recognition:** Accepted by government departments and the business community, enhancing the programme's credibility.
- **Enhanced Employability:** Provides graduates with a competitive advantage and opens doors to various career opportunities.



HKIQEP
香港環專會

CAREER PROSPECTS

The breadth of material covered provides our graduates with an excellent foundation for jobs in the government, non-governmental organisations, and industry, including the following:

- Geotechnical survey and engineering
- Meteorological, marine, and climate services
- Climate, energy, and environmental consulting and management
- Environmental protection and conservation
- The education sector



Employers include the Environmental Protection Department, the Hong Kong Observatory, Agriculture, Fisheries and Conservation Department, Ocean Park Hong Kong, Arup, AECOM, EGS, GeoRisk Solutions, Gammon, Tysan, Ambit Geospatial Solution, Cathay Pacific, CLP, Fugro, HKT, and more.

ALUMNI SHARING

Name: Dickson WONG (BSc 2022)

(Graduate Geologist (Practical & Design) at Ove Arup & Partners (HK) Ltd)

“Studying Geology is like reading the history book of Earth that is full of surprises and insights. Field Geology is a fundamental practice within the field of Earth Science. Conducting a field study requires literature review, collection of field data, finding patterns through bits and pieces, making hypothesis and validation through experiment. I really enjoy myself working in field, observing, understanding and analysing the rocks and landscapes.”



Name: Ron CHANG (BSc 2023)

(Graduate Consultant (Data Analysis) at Ove Arup & Partners (HK) Ltd)

“My study at EES and my internship at the Hong Kong Observatory helped set my foundation in climate science, especially in urban climate. I also acquired skills in scientific communication through the EES Science Outreach Ambassadors scheme. Now, my job specialises in environmental impact consulting and assessment.”



Name: Fung NG (BSc 2023)

(Graduate Environmental Consultant at AECOM)

“During my third year of study, I had the opportunity to intern at the Hong Kong Observatory, where I used machine learning to improve weather observations. This experience deepened my passion in meteorology and I also became an atmospheric science ambassador. My final year project in EES was to investigate air pollution patterns. This experience is directly related to my career as an environmental consultant.”



EES INTERNSHIPS & SCHOLARSHIPS

In addition to university-wide opportunities, EES also offers additional opportunities and financial support to our students to pursue work experience or scientific research.

Every year, our students have internship opportunities at the Hong Kong Observatory, to experience first-hand the challenges of meteorological services.



Name: Justin CHAN
(2023 HKO Intern)

"I worked on the risks of heatwaves and the related health impact on the Hong Kong public. Under the supportive guidance of the HKO staff, my programming skills were enhanced. Other interesting activities include visiting the weather stations and releasing the weather balloon to observe our atmosphere."



The **EES Summer Research Scholarship** supports student engagement in local summer research projects with our faculty members.

The **EES Overseas Exchange Scholarship** supports student research exchange at top universities overseas.

Name: Natalie WONG
(Awarded in 2023)

"I am grateful for the opportunity to cooperate with my supervisor and industry partner to enhance my research skills in rainfall prediction. This summer project has made a positive impact on my scientific journey."



Name: Sam TSANG
(Awarded in 2023)

"This scholarship enabled me to conduct research on the hydrosphere in Iceland, a region particularly affected by global warming. Together with a team of research scientists from Denmark, we monitored the glacier loss rate using remote sensing method, and we traced the water intrusion that affected the ice melt. Our line of research has implications on Earth's water resources."



Name: Tommy MAN
(Awarded in 2023)

"I have learnt how to simulate atmospheric organic chemical reactions in the laboratory. I was also inspired by how scientific research should be carried out."



FAQs

Q1. What is the difference between EES and Geography subject?

As part of the Faculty of Science, EES has a strong emphasis on scientific and mathematical knowledge, as well as the quantitative and technical skills required for career. Students will acquire the fundamental scientific knowledge in physics, chemistry and biology to understand what shape our planet and our living environments.

Q2. What is the advantage of being admitted through EES (JS4648)?

Students entering via the separate JUPAS will gain early exposure to the EES community, where they can enjoy not only more specific advice from teaching staff and peer mentors, but also early opportunities to EES-focused activities.

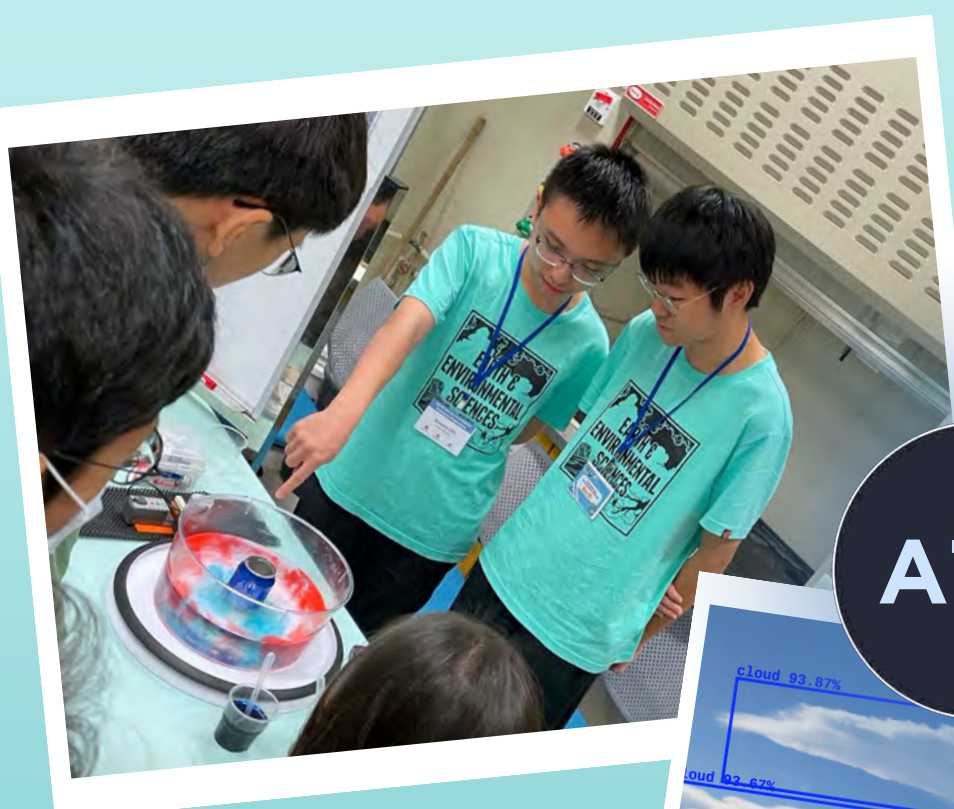
Q3. What are the advantages for declaring one of the streams?

Our streams can cater to individual needs. There are several advantages:

- For those students who have chosen to specialise in one of the three streams, the stream name will be shown on their transcripts. For example, BSc in Earth and Environmental Sciences (Atmospheric Science Stream).
- One of the streams, Environmental Science and Technology Stream (EST) is accredited by the HKIQEP which allows our graduates to be professional members on a faster track.
- Some companies or government departments may require specific stream.

SCIENCE OUTREACH AMBASSADORS SCHEME

Every year, students actively participate in science communication and promotion involving atmospheric phenomena, geological discoveries, and environmental issues. Please follow our social media channel for more photos and activities.



ATM

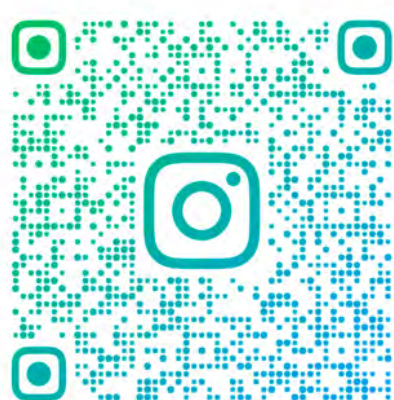


GEO



EST

Social
Media



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