ASIAN SCHOOL OF THE ENVIRONMENT

Environmental Earth Systems Science

Join the undergraduate major programme today!

Scholarships Available!
THE ASIAN SCHOOL OF THE ENVIRONMENT

The Asian School of the Environment (ASE) at Nanyang Technological University (NTU) is an interdisciplinary School that aims to be a world leader in environmental research focusing on environmental challenges in Asia. The ASE integrates earth and environmental life science, ecology, engineering and technology, human ecology, humanities, and the social sciences to address key issues of the environment and sustainability.

The ASE builds upon the strengths of the Earth Observatory of Singapore (EOS) and the Singapore Centre for Environmental Life Science Engineering (SCELSE), two research Centres of Excellence within NTU. The School also collaborates with the Complexity Institute and other academic units of the University.

ENVIRONMENTAL EARTH SYSTEMS SCIENCE

The Environmental Earth Systems Science Major is the flagship programme of the ASE. This highly selective programme, favours a small cohort, creating an innovative and interactive learning environment. Students who choose this course will gain a strong background in quantitative skills, modern computing techniques, and core environmental earth systems, maths, and sciences. In addition to the international experience that students will gain in numerous field-based courses, they are also encouraged to go on overseas exchange programmes to expand their range of experience further.

SOLUTIONS FOR EARTH’S FUTURE

Undergraduates will learn the skills to tackle some of the big issues facing the world today: human impact on the environment, effects of climate change, location and management of natural resources, forecast and mitigation of natural disasters, water resource availability, and implementation of alternative energy systems.
BSc in Environmental Earth Systems Science

CHOICE IN SPECIALISATION

Beginning in their second year, students can choose a specialisation based on their interests and career goals:

**Geosciences**
- Earth Materials
- Intro. to Geological Field Mapping
- Structural Geology and Tectonics
- Layers and Landforms
- Intro. to Geochemistry
- Intro. to Geophysics
- Advanced Field Course in Geology

**Ecology and Ecosystems**
- Ecology
- Introductory Biology
- Bioinformatics & Statistics
- Microbiology
- Principles of Heredity and Ecological Genetics
- Intro. to Field Ecology
- Plant & Animal Physiology

**Society and the Earth System**
- Probability and Introduction to Statistics
- Global Environmental Politics and Governance
- Coupled Social – Ecological Systems

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**Courses for all specialisations**

- **E2S2 Core Modules:**
  - E2S2 Environment & Society
  - E2S2 Solid Earth
  - E2S2 Oceans, Atmosphere and Climate
  - E2S2 Biosphere
  - Introductory Field Experience (Bali)
  - Computational Earth Systems Science
  - Futures in E2S2
  - Calculus for the Sciences I/II

- **Math and Sciences Foundation Modules:**
  - 4 – 6 courses from Biology, Chemistry and Physics

- **Electives for Honours Eligibility (by application):**
  - Final Year Project
  - Industrial Attachment

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**Specialisation Core Courses**

**Geosciences**

**Ecology and Ecosystems**

**Society and the Earth System**
REAL-WORLD EXPERIENCE

This major emphasises on gaining real-world experience:

- Students participate in a 1-2 week introductory field course in Bali after their first year of study
- Advanced students have opportunities to participate in longer field courses abroad
- Courses include interactive tutorials and labs for students to gain real-world skills
- Courses focus on teaching skills like speaking, writing, working in groups and leadership
- Students can study abroad for one or two semesters at a university of their choice
- Students have opportunities to conduct an independent final-year research project in collaboration with a faculty advisor or conduct an industrial attachment with local or overseas employers
- Faculty will work individually with students on career counseling – developing career goals, refining their resumes, and making connections with potential employers

EXCITING CAREER OPPORTUNITIES

- Environmental planning, policy, and management
- Water resource management/hydrogeology
- Natural resource exploration, extraction, and management (oil, gas, and minerals)
- Environmental consulting
- Geotechnical consulting
- Geologic surveying or monitoring
- Urban planning
- Biotechnology
- Teaching or research

Graduates will also have the opportunity to choose careers with employers not commonly associated with earth and environmental sciences, such as:

- Insurance companies, who rely on earth scientists to help assess long-term risk due to earthquakes, volcanoes, climate change, and other natural disasters
- Financial sector, where firms seek quantitative knowledge about the science driving changes in the energy market
- Business, for companies that value technical know-how and creativity
ADMISSION

This major programme is highly selective. Between 30 to 50 students are admitted each year. Students will be evaluated on an oral interview and academic background. The Bachelor of Science in Environmental Earth Systems Science programme accepts A’ Level, IB, NUSHS Diploma, Polytechnic Diploma and other equivalent international qualifications on a selective basis. All candidates with strong academic potential who satisfy the minimum subject requirements as well as the general admission requirements set by NTU will be considered.

Minimum subject requirements:

Singapore Cambridge A Level students:
H2 Level pass in Mathematics AND
H2 Level Pass in Physics/Chemistry/Biology/Economics/Computing

IB Diploma students:
Mathematics at Higher Level AND
Physics/Chemistry/Biology/Economics/Computer Science at Higher Level

International and other qualifications:
Mathematics at Senior High School AND
Physics/Chemistry/Biology/Economics at Senior High School

NUS High School Diploma:
Major CAP of 2.0 in Mathematics AND
Major CAP of 2.0 in Physics/Chemistry/Biology

Please visit us on the web to learn which polytechnic diplomas are eligible for our programme.

Contact us for more detailed information about admissions: ase_undergrad@ntu.edu.sg
UNDERGRADUATE SCHOLARSHIPS

Students applying to the major programme will be assessed for the Nanyang Scholarship, CN Yang Scholars Programme, College Scholarship, EOS Undergraduate Scholarship, or other relevant scholarship programmes during their selection interview for admission into the major programme. The Nanyang Scholarship and CN Yang Scholars Programme recognizes students who excel academically, demonstrate strong leadership potential, and possess outstanding co-curricular records. The Earth Observatory of Singapore (EOS) Undergraduate Scholarship is awarded to up to three outstanding freshman each year pursuing a degree in Environmental Earth Systems Science. The selected students must be strong scholars, creative thinkers, and future leaders in Environmental Earth Systems Science.

MEET OUR STUDENTS!

JOANNE LIM, Anderson Junior College

The course of Environmental Earth Systems Science (E2S2) thus far has allowed me to develop my thinking and management skills. The diverse and challenging curriculum has expanded my capacity as a student to be more insightful. Our small cohort allows personal attention from the caring professors and teaching assistants. The faculty here are ever-willing to guide me, yet at the same time I am given much space to explore my areas of interests and style. Fellow classmates in E2S2 are both intelligent and approachable. Here you will experience a culture where everyone works hard together and encourages each other. In E2S2, I study for a cause — to sustain this beautiful creation we call Earth.

PRISCILLA SIM, Singapore Polytechnic

Through the course, I feel that I have stepped out of my comfort zone in terms of my thinking and opened my eyes to the world that we are living in a little more. This course is closely linked to every one of us, discussing humanity and its impact on our environment. Not only do we learn about case studies of people and countries away from us, I also personally got to do some self-reflection on what I am contributing to the environment as an individual. This course will have you opening up your brain and digging deep into it as it requires more thinking than what we have been used to, but I am sure it will be rewarding.