Introduction

The School of Energy and Environment (SEE) – the first and still the only one in Hong Kong – was founded in July 2009 with the mission to perform cutting-edge research and provide professional education in energy- and environment-related issues. The School is designed to tackle interactive relationship between energy and environment through the development of new scientific understanding and new technologies as well as the training of new professionals with broad knowledge in the areas of energy and environment.

We have a highly internationalized and experienced faculty from various countries specializing in atmospheric and climate science, biological science, chemistry, chemical engineering, energy economics, environmental engineering, environmental policy, mechanical engineering and materials science.

The School endeavours to produce a new breed of engineers and professionals capable of solving energy and environmental problems.

Academic Programmes

Bachelor of Engineering in Energy Science and Engineering

Majors

Bachelor of Engineering in Environmental Science and Engineering*

Atmospheric and Climate Science

Minors

Energy Technology

Sustainability (proposed)

Accreditation

Bachelor of Engineering in Energy Science and Engineering is accredited by The Hong Kong Institution of Engineers (HKIE), meeting the academic requirement for HKIE Corporate Membership in both the energy and environmental disciplines, while Bachelor of Engineering in Environmental Science and Engineering is in the process of seeking accreditation by HKIE.

Remarks from the Industry

Mr. Paul W Y Poon, Managing Director of CLP Power Hong Kong Limited says the electrical and energy industry is keen for talents. “The undergraduate degree programme, Bachelor of Engineering in Energy Science and Engineering, offered by the SEE of CityU will nurture a new breed of professionals with diverse skills for the electrical and energy industry, which is important for the healthy development of our industry,” he says.

Mr. CT Wan, Managing Director of HK Electric remarks, “The graduates of the undergraduate degree programme, Bachelor of Engineering in Energy Science and Engineering, offered by the SEE of CityU are capable of contributing innovative solutions to the government and industry as well as business sectors in the aspects of energy policy, energy management, research and development with all-round knowledge in energy. They will even be involved in providing new and feasible proposals of affordable and clean energy in the team of the Hong Kong Electric.”

Dr. Otto Poon, Chairman of ATAL Analogue Group of Companies comments, “With energy and environment high on the national and local agenda, it is timely to see that the SEE of CityU will host an undergraduate degree programme of Bachelor of Engineering in Energy Science and Engineering. This programme will provide the much needed education to the young energy and environmental professionals for the sustainable development of Hong Kong.”

Mr Colin Chung, Managing Director, Sustainable Development & Environment, China Region of Parsons Brinckerhoff points out, “The Bachelor of Engineering Programmes in Environmental Science and Engineering provides a good training for the students to gain fundamental principles and practical knowledge in environmental engineering for their future development in the industry. The curriculum is unique in Hong Kong and tailor made to the sustainable development of the environmental engineering industry locally and internationally.”

Career Opportunities

- Energy engineers in the following types of companies: utility (electricity and gas), energy service, environmental consulting, environmental engineering, transport (mass transit, buses, ferries), ocean-going vessels, airlines, aircraft servicing, government departments, etc.
- Environmental/sustainability engineers in corporations, property management companies, real-estate developers, and construction, manufacturing and transportation industries, etc.
- Professionals in companies/institutes researching, developing, manufacturing and/or selling products related to energy generation, storage, efficiency, and conservation, and environmental technology to prevent, control, treat and remediate environmental pollution
- Financial analysts and investors in financial institutions with business in energy and environmental investment and/or loans
- Consultants in non-government organizations with activities related to energy and environment
- Secondary school teachers responsible for science and Liberal Studies curriculum
Bachelor of Engineering in Energy Science and Engineering

Aims of the Major
To create a new generation of intellect graduates capable of discovering and providing innovative solutions to the intricate issues of energy crisis, renewable energy, global warming, climate change and pollution.

Courses under Major Requirement

Basic Core Courses
- Applied Statistics for Sciences and Engineering
- Chemical Sciences for Energy Engineers
- Electromagnetic Principles for Energy Engineers
- Introduction to Environmental Engineering
- Mathematical Methods for Engineering
- Thermosciences for Energy Conversion I

Major Core Courses
- Energy and Energy-related Environmental Economics
- Energy and Energy-related Environmental Policy
- Energy Efficiency for Buildings
- Energy System: Modelling and Analysis
- Engineers in Society
- Environmental Impact Assessment
- Final Year Project
- Power Plant Engineering
- Project Management
- Sustainable and Renewable Energy
- Thermosciences for Energy Conversion II
- Waste and Wastewater Treatment

Electives
- Air Pollution Measurement and Control
- An Introduction to Environmental Data Analysis
- Atmospheric Chemistry
- Atmospheric Science – An Introductory Survey
- Bioremediation: Principles and Applications
- Electrical Energy Conversion
- Energy and Carbon Auditing
- Energy Catalysis and Reaction Engineering
- Materials Engineering for Energy Storage Applications
- Nanotechnology in Energy Conversion and Storage: Concepts and Creative Science
- Nuclear Energy Engineering
- Solar Energy Engineering
- Water Quality Engineering
- Wind and Hydro Power

Bachelor of Engineering in Environmental Science and Engineering

Aims of the Major
To train students to be knowledgeable in environmental science and engineering so that they can work as environmental professionals to improve environmental performance and sustainability.

Courses under Major Requirement

Basic Core Courses
- Chemical Sciences for Environmental Engineers
- Introduction to Environmental Data Analysis
- Mathematical Methods for Engineering
- Principles of Analytical Chemistry
- Thermal-Fluid Sciences I

Major Core Courses
- Air Pollution
- Climate Change and Adaptation
- Engineers in Society
- Environmental Engineering Laboratory
- Environmental Impact Assessment
- Environmental, Safety, and Occupational Health Management
- Final Year Project
- General Ecology
- Principles of Sustainability
- Project Management
- Sustainable Engineering Systems: Modelling and Analysis
- Thermal-Fluid Sciences II
- Waste and Wastewater – Pollution and Treatment
- Water and Water Resource Engineering

Electives
- Environmental Technology
- Advanced Treatment and Management of Solid and Municipal Waste
- Air Pollution Measurement and Control
- Environmental Measurements
- Hydraulics and Hydrology
- Sustainability and Environmental Management
- Design of Smart Cities and Sustainable Building
- Energy and Carbon Auditing
- Energy and Environmental Policy
- Environmental Modelling and Geographic Information System
- Social Perspectives of Environmental Science and Engineering
- Sustainable and Renewable Energy
- Environmental Science
- Air Quality Modeling
- Atmospheric Chemistry
- Atmospheric Science – An Introductory Survey
- Environmental Conservation and Resources Management
- Environmental Measurements
- Environmental Toxicology
Internship Programme

The School strives to place students in a real-world work environment where they are guided to integrate theory and practice in real-life situations. This will help them gain practical knowledge and skills for employment.

In the summer of previous years, our undergraduate students worked as student interns in nearly 30 companies/organizations, namely The Hongkong Electric Company Limited, The Jardine Engineering Corporation Limited, ATAL Building Services Engineering Limited and CLP Power Hong Kong Limited, etc.

Student Voice

ARUP

Internship in the Development Bureau and Cec Arup & Partners Hong Kong Limited and visiting study at the University of California, Berkeley... These experiences equipped me to be a better self and paved the way for my future career.

LEE Mei Yan Zoe
(BEng(SE) student, 2012 Cohort)

The programme has prepared me with everything I should know for the real world. I am now hired by one of the biggest engineering consultant firms in the world, Cec Arup & Partners Hong Kong Limited, assisting sustainable design for some of the future Hong Kong iconic buildings.

CHAN Wai Pang Kallman
(BEng(SE) graduate, 2012 Cohort)

Student Exchange Programme

To widen the global horizons and enhance the learning experience, students are encouraged to join the Student Exchange Programme which allows them to undertake part of their degree study abroad. Students can apply for exchange places of partner institutions at both institutional and school level programmes.

Outbound exchange places at the following institutions are exclusively reserved for our SEE students:

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<th>Region /Country</th>
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<td>Asia</td>
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|                 | University of Leeds 

The programme is taught by a group of passionate professors who prepare us to be professional engineers. Other than training us into well-equipped individuals, we have opportunities to explore the world through overseas student exchange programmes. Overall, I would like to comment that SEE is a great place to explore my interests and develop my career.

CHAN Yee Cheong George
(BEng(SE) Year 4 student, 2013 Cohort)

Coming from a small island of Taiwan, I have the opportunities to take up summer internship in CLP, join the study tour to South Korea, and be awarded the Deakin 3+1 exchange at National University ofSingapore. I have proceeded to my research of final year project which allows me to collaborate with a few professors, PhD students and industrial partners. I have been presented with lots of routes to a big world with bright future.

WANG Chang ting Amy
(BEng(SE) Year 4 student, 2013 Cohort)
Competitions and Scholarship Awards

Our students participated and won in different energy- and environmental-related competitions and were awarded prestigious scholarships and a number of scholarships specified for the students of our School.

The “Challenge Cup” National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016

The “New Energy New Generation” Solar Car Competition, organized by the Environment Bureau (ENB) and the Electrical and Mechanical Services Department (EMSD) of the Government of HKSAR

The “Innovation and Technology Scholarship Award Scheme”, organized by the Hong Kong Federation of Youth Groups and sponsored by the Innovation and Technology Commission and HSBC. Our students have been awarded the prestigious award for 3 consecutive years and seized the chance to have short-term attachment at the globally-renowned overseas institutions including University of California, Berkeley and University College London.

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