

+ Class of 2018



環境科學課程

Environmental Science
Programme (established 1994)

School of Life Sciences
The Chinese University of Hong Kong

生命科學學院



香港中文大學
The Chinese University of Hong Kong



Career Prospects

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- The Programme is designed for students interested in environmental science and its applications in strategic planning, policy development, pollution control and waste treatment, biodiversity, conservation, toxicology and environmental health.
- We prepare our graduates with a high level of competence in scientific understanding of the environmental issues and a proper handling of the appropriate techniques in addressing these issues.
- The graduates are well prepared for employment in relevant government departments, commercial and industrial enterprises, environmental consultancy, green groups, and further studies in environmental science disciplines.

Career Prospects:

Environmental Consultant (EIA)

Green Groups (NGO) and
Environmental Education

Government Department
Officers, e.g. AFCD, EPD, etc.

Accreditation, e.g. BEAM and
BEAM Plus, Carbon audit,
Chemical analysis of food or
ecological samples, EM&A, etc.

Commercial sectors:
Compliance Engineer, HR and
Sustainability Officer



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環保要講
也要做

譚凱邦



Mr. Chickee Chow *Consultant, Environmental Resources Management (ERM)*

Ms. Anna Chung *Sustainability Development Manager, Mass Transit Railways Corporation*

Ms Carol Kwok *Sustainability Manager, New World Development Co. Ltd*

Selected Job Profiles:

Dr. Eric Sze *Assistant Professor, Open University of Hong Kong*

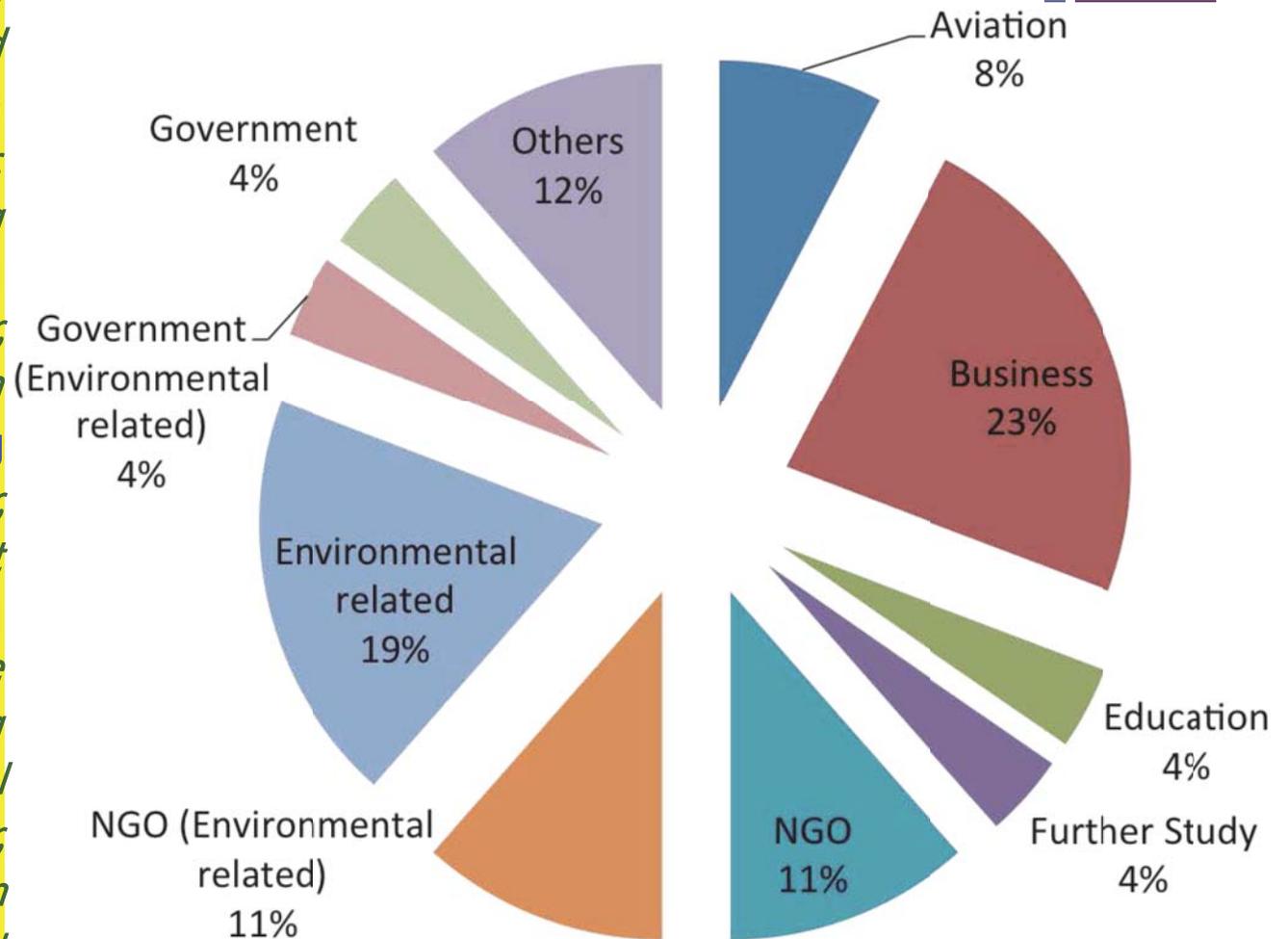
Mr. Alfred Tang *Senior Compliance Engineer, Avery Dennison*

Mr. F F Yeung *Country Parks Officer, AFCD, HKSAR Government*

Dr. Patrick C. WYeung *Project Manager, World Wide Fund-Hong Kong*

Miss WY Yiu *Environmental Protection Officer, Environmental Protection Department, HKSAR Government*

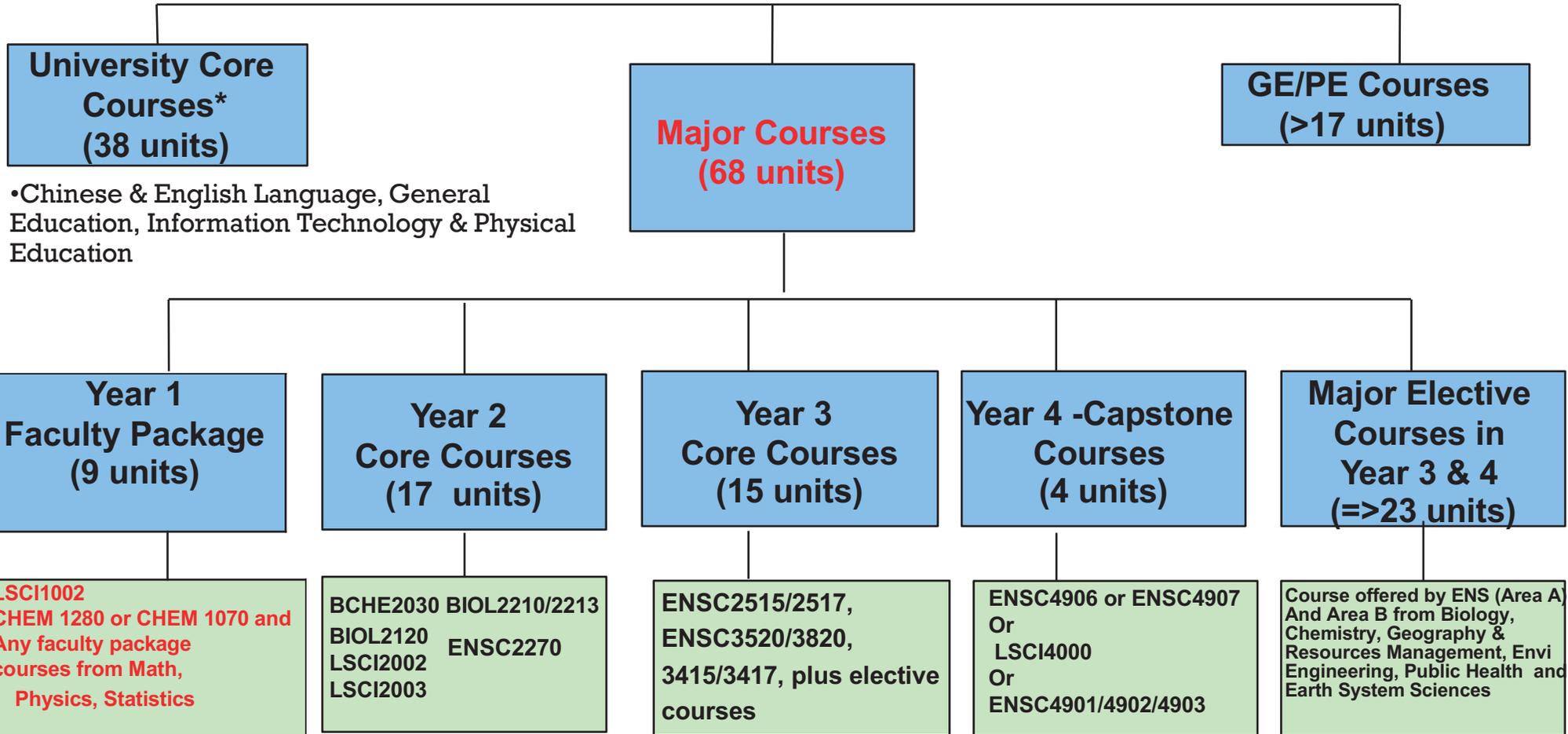
Career Field of 2013 Full-Time First Degree in Environmental Science Programme



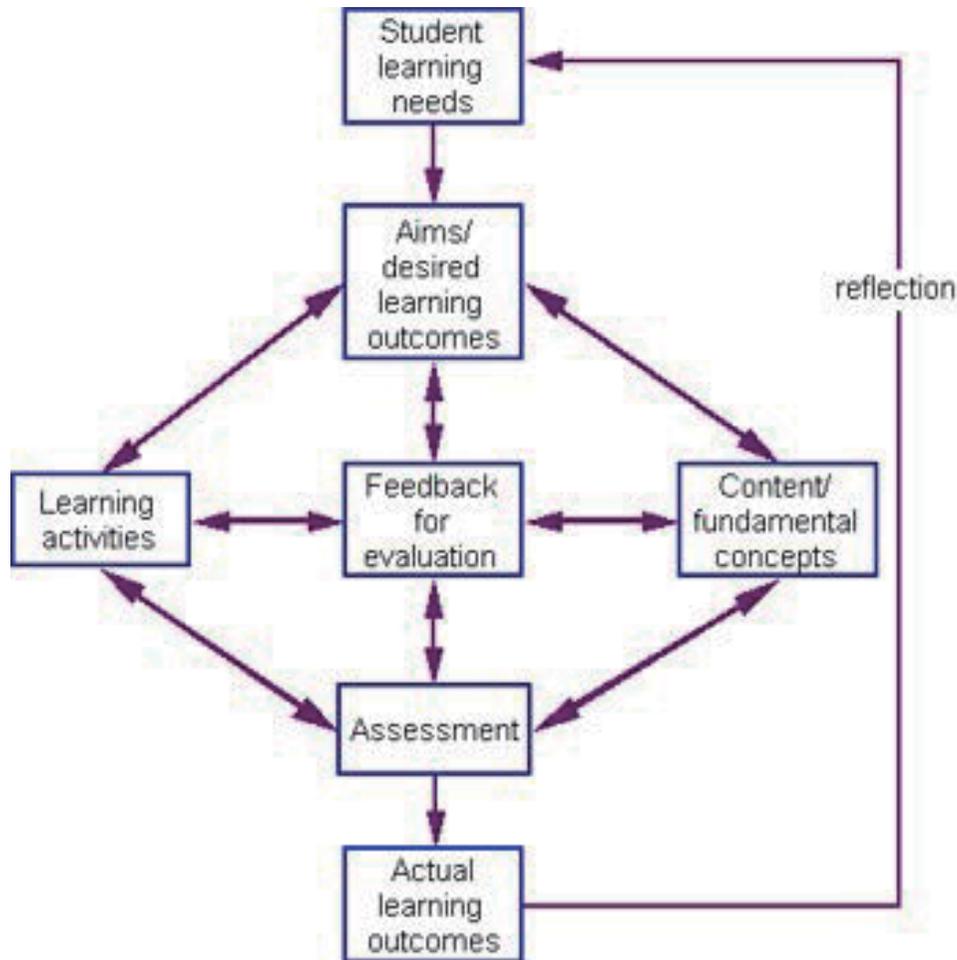
Environmental Science Program Study Scheme and Requirements



At least 123 units to graduate



OBA Practice in CUHK



Feedbacks:

Curriculum Forum,

**Course Teaching
Evaluation.**

**Staff-Student
Consultation Committee**

**Program Committee
Meeting**

ENSC Program Learning Outcomes (Revised on April 27, 2012)

Upon completing the program, our students are able to advance in their studies and careers, and are able to:

- [1] **work independently** with good communication, analytical, research, and technical skills, with a sense of professionalism;
- [2] develop themselves as **active researcher in various areas of environmental science**;
- [3] **adapt to the changing social and research environments** to stay competitive in the job markets and further studies.

For knowledge outcomes, upon completing the program, our students are able to:

- [4] possess the **basic knowledge of related subjects, i.e. ecology**, biodiversity, conservation, biochemistry and metabolism, toxicology and health, environmental chemistry and instrumental techniques for chemical analysis;
- [5] possess **inter-disciplinary knowledge of related subjects**, i.e. environmental management and pollution control, environmental impact assessments, concepts of molecular actions of chemicals, chemical techniques for environmental analyses;
- [6] possess **specialized understanding of related subjects** or particular field of study in one of the following subjects: environmental biotechnology, marine environmental research, ecology and conservation biology, toxicology and health, chemical treatment and environmental chemistry;
- [7] use **scientific approach and principles** to understand environmental issues and propose solutions to tackle these issues.

For skills outcomes, upon completing the program, our students be able to:

- [8] collect representative **samples through field study and operate instruments** for chemical analysis of environmental samples;
- [9] apply knowledge to the field of environmental control, conservation and protection of biodiversity;
- [10] **orally communicate** with others in an effective manner;
- [11] **collect and analyze data**, with adequate information technology skills, and draw conclusions from them;
- [12] communicate **effectively in written format and formulate relevant hypothesis** for problem solving in complex issues.

For attitudes/values outcomes, upon completing the program, our students are able to:

- [13] **analyze information** collected to draw appropriate conclusions;
- [14] **design experiments to test** formulated hypothesis and draw appropriate conclusions;
- [15] **aware of current environmental issues** and criticize these issues in a logical manner, showing analytical skills for problem solving;
- [16] have a **passion for transferring a sense of environmental protection to the general public** and providing creative or innovative ideas from existing information;
- [17] **work independently and also in a team**, as a leader or regular group members, to tackle environmental problems;
- [18] **adapt to the changing socio-economical, and research environments by constantly up-grading themselves.**

- + Environmental Science Curriculum Major Units: 66
Students are also encouraged to minor in Geography and Resource Management, Earth System Science, or Public Health.

YEAR ONE (9 units):

- **LSCI 1002** Introduction to Biological Sciences
- **CHME 1280** Introduction to Organic Chemistry and Biomolecules
- Any one from MAT 1320, PHY 1001, PHY 1002, **STA 1012**
- + University GE, PE, and language courses



+ YEAR TWO (10 + 7 units) (17 units)

BCHE2030 Fundamentals of Biochemistry (3 U)

BIOL2120 Cell Biology (3 U)

LSCI2002 Basic Laboratory Techniques in Life Sciences (2 U)

LSCI 2003 Scientific Conduct and Ethics (2 U)

ENSC2270 Introduction to Environmental Science (3U)

BIOL2210 Ecology (3U)

BIOL2213 Ecology Lab (1U)

Term 1

Term 2



+ **YEAR THREE**

(5 + 10 units)

ENSC 2515
Environmental
Chemistry (3 U)

ENSC 2517
Environmental
Chemistry Lab (2 U)

Term 1

ENSC 3520 Environmental &
Biochemical Toxicology (3 U)

ENSC 3820 Environmental &
Biochemical Toxicology Lab (2 U)

ENSC 3415 Chemical
Instrumentation Techniques (3 U)

ENSC 3417 Chemical Instrumentation
Technique Lab (2 U)

Term 2

8



+ YEAR FOUR Total major core: 45 units
+ 23 units electives = 68 units

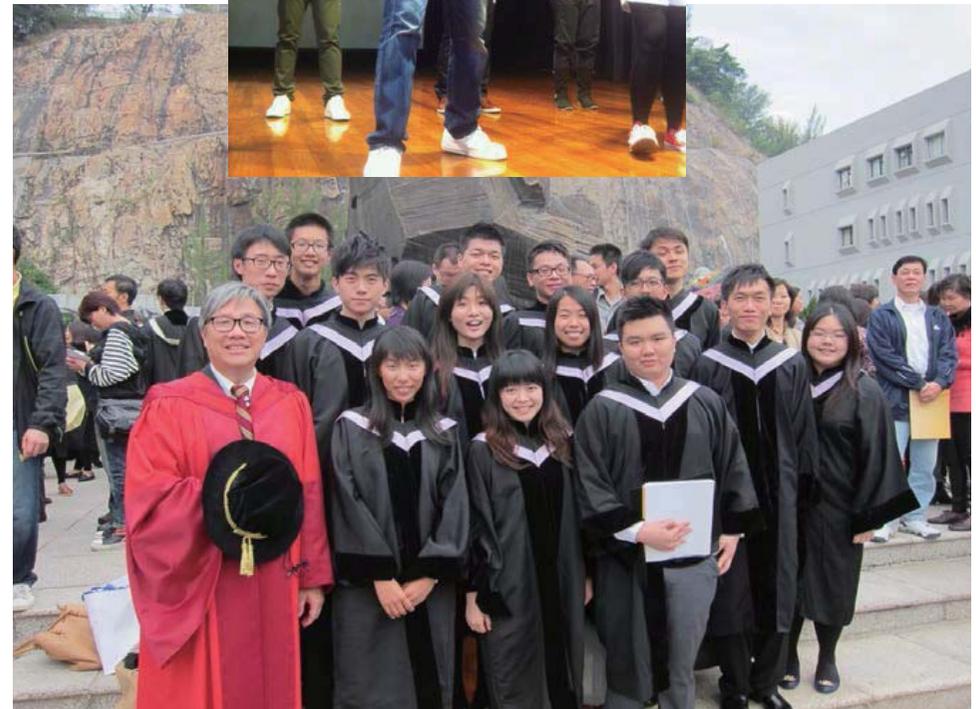
CAPSTONE COURSES = 4 to 6 units

**ENSC4901/4902/4903 Senior
Experimental Projects (I/II/III;
2+2+2 U = 6 U) or**

**LSCI4000 Senior Literature
Research (3 U)(Term 1 or
Term 2)**

ENSC4906 Internship (2U) or

ENSC4907 Field Study (2U)



Major Elective Courses (> 23 units)

At least 11 units from Group A:

- ENSC3230 Principles of Environmental Protection & Pollution Control (3 units)(or GRMD3230)
- ENSC4240/4242 Environmental Impact Assessment/Lab (3 + 2 units)
- ENSC4250/4252 Environmental Health (3 units)
- ENSC4310/4510 Methods in Toxicological Research/Lab (3 + 2 units)
- ENSC4525 Advanced Environmental Chemistry (3 units)
- ENSC4535 Chemical Treatment Processes (3 units)



Group B: Courses Offered by other Programmes

- BIOL3012/3022 Biodiversity Laboratory I (2 units)/ II (2 units)
- BIOL3410 General Microbiology (3 units)
- BIOL3560 Biology of Fungi and Non-Vascular Plant (2 units)
- BIOL3570 Biology of Vascular Plants (2 units)
- BIOL3610 Invertebrate Form and Function (2 units)
- BIOL3620 Vertebrate Life (2 units)
- BIOL3710 Marine Biology (3 units)
- BIOL4012 Field and Environmental Biology (2 units)
- BIOL4220 Environmental Biotechnology (3 units)
- BIOL4260 Conservation Biology (3 units)
- BIOL4510 Hong Kong Flora & Vegetation (3 units)
- CHME4280 Chemistry in Biofuel (2 units)
- CHME4400 Advanced Analytical Chemistry (2 units)
- CHME4430 Practices in Testing Laboratory (2 units)
- CHME4440 Food Testing and Environmental Analysis (2 units)
- ENER3020 Energy Utilization and Human Behaviour (2 units)
- ESSC3200 Atmospheric Science (3 units)
- ESSC3300 Introduction to Physical Oceanography (3 units)
- ESSC3600 Understanding Our Biosphere (3 units)
- ESSC4400 Hydrology (3 units)
- GRMD3202 Environmental Management (3 units)
- GRMD3203 Urban Environmental Problems (3 units)
- GRMD3323 Urban and Regional Planning (3 units)
- GRMD3403 Methods for Resource Evaluation and Planning (3 units)
- GRMD4202 Hydrology and Water Resources (3 units)
- GRMD4203 Ecosystem Restoration and Management (3 units)
- GRMD4204 Environmental Planning and Assessment (3 units)
- GRMD4401 Energy Resources (3 units)
- LAWS4310 The Environment and the Laws (3 units)
- PHPC3016 Environment and Health (3 units)
- STAT3210 Statistical Techniques in Life Sciences (3 units)
- URSP3300 Sustainable Urban Transport (3 units)
- URSP4100 Urban Planning Practise and Theory (3 units)

Bloom's Taxonomy Table

The knowledge dimension	The cognitive process dimension					
	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge						
Conceptual knowledge						
Procedural knowledge						
Meta-cognitive knowledge						

Assessments

(Affirmative and Summative with Criteria Referencing)

Assignment,

Term Paper,
Poster and Oral Presentations,
Group Project,

Final Examination.

Suggested Concentrations

Concentration 1: Environmental Management



Concentration 2: Environmental Technology



Field Trips and Field Studies



Field Study to Sabah studying pitcher plants



iSeahorse – The new insight of environmental conservation



Mount Kinabalu (4095.2 M)



Danum Valley, Sabah



The Chinese University of Hong Kong
ENSC4907 Field Study
Tsoi Tak Chi (1155057936)

Field Study to Philippines for seahorse survey (ENSC 4907)

**North East
New Territories
(NENT) Landfill
Gas Utilisation**



**Sha Lo Tung Field Study
(EIA Lab)**

Site visit at a metal finishing plant

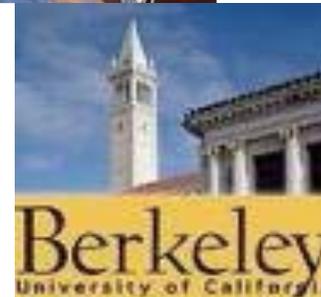
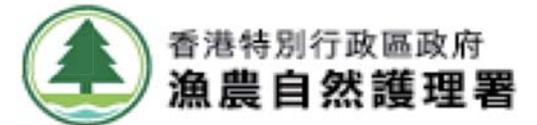


**Tai O Field Trip
(ENSC2270)**

INTERNSHIP



GREENPEACE
綠色和平



Scholarships



Chevening Aberdeen Scott Scholarship

http://www2.cuhk.edu.hk/gss/download/pdf/Scholarship/Scholarship_20141003_1.pdf

French Scholarships



<http://www.iso.cuhk.edu.hk/english/publications/letter/article.aspx?articleid=61846>

College Scholarships and Activity Funds

Exchange Programs

Over 20 students joined exchange programs to the following universities in the last decade.

Australia: ANU, NSW **Canada:**

UBC, U of T, Waterloo

Denmark: Copenhagen

Finland: Helsinki

Germany: Hannover

Japan: Christian U, Kyoto Sangyo

Mainland: Peking

Norway: Bergen

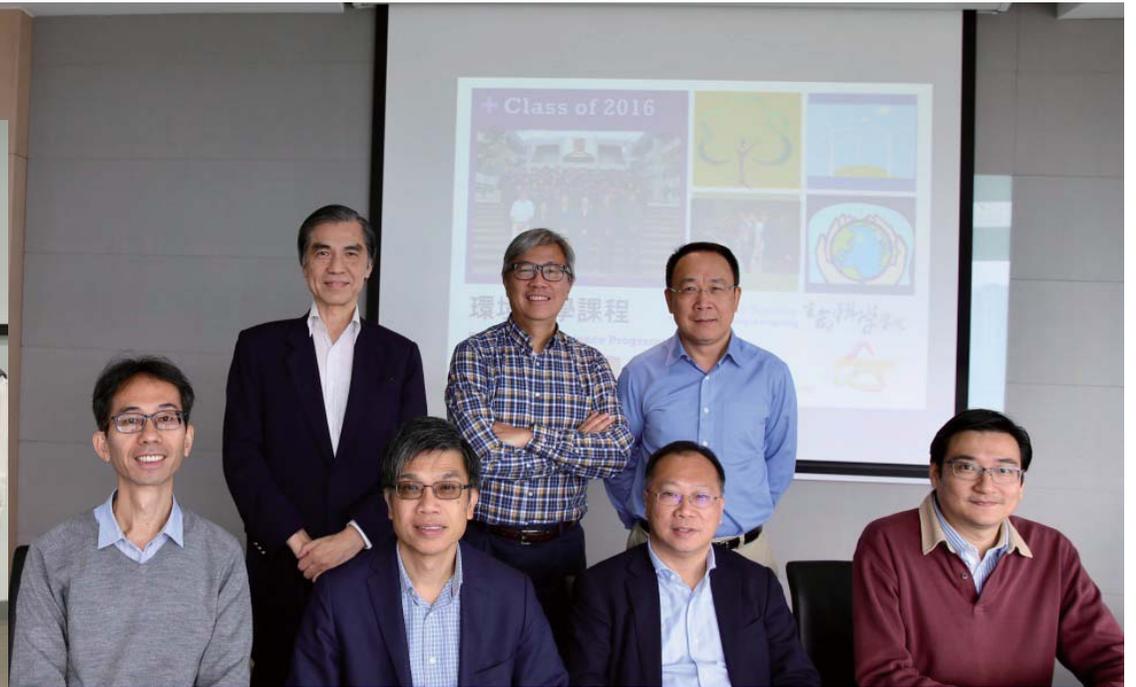
Sweden: Royal Ins. Of Technology

Switzerland: Lausanne

USA: Penn State, Ohio State,
Claremont McKenna



Alumni Sharing



ENSC Program Advisory Committee Meeting 2016

***Career
Talks
e.g. from
CIWEM***





Environmental Integrity & Excellence

<http://hkiqep.org>

HKIQEP

香港環專會

Our Institutional Partners

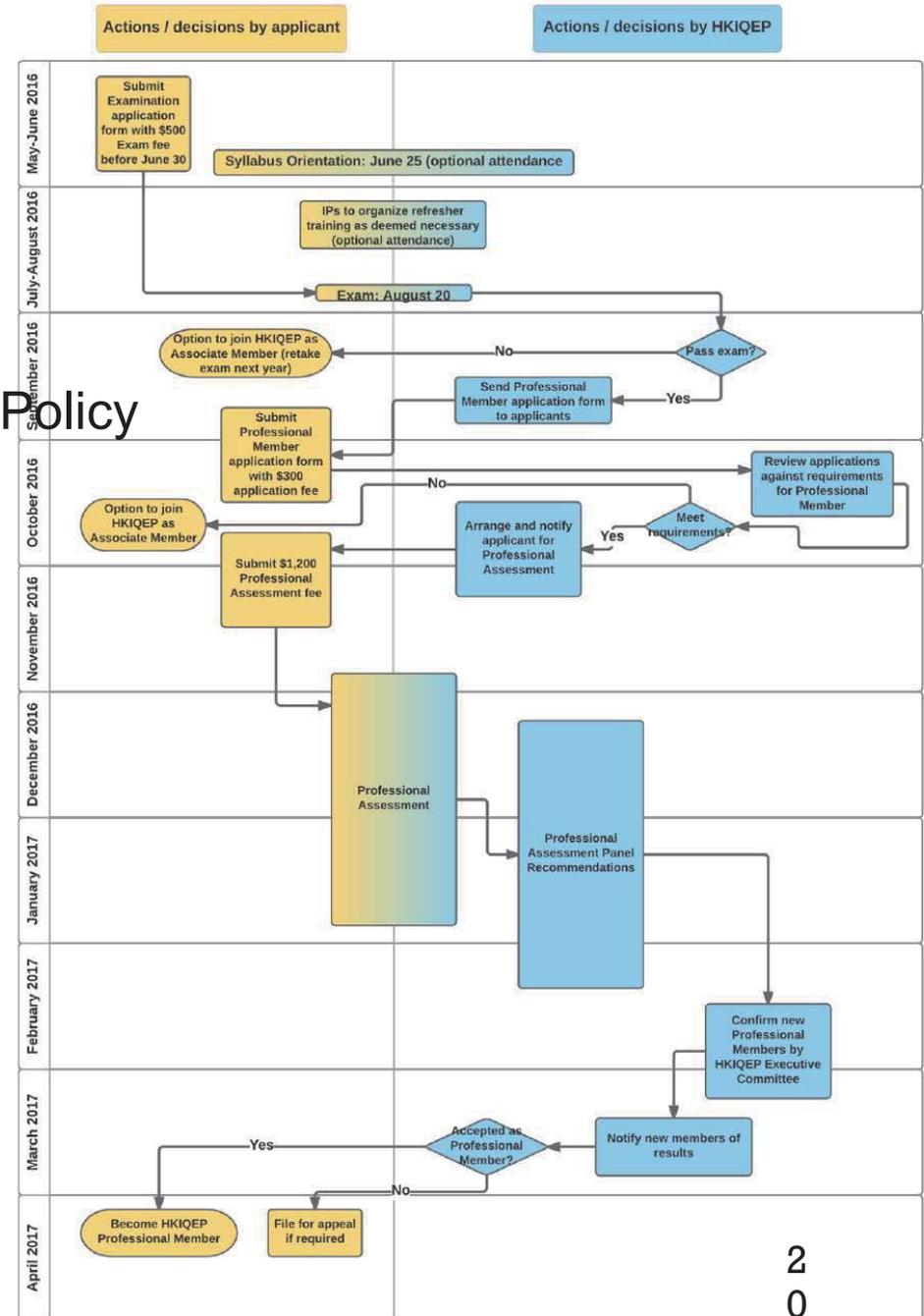
We collaborate with environmental professional institutions which share the same vision and goal of raising the standard of the environmental profession in Hong Kong. We work together with them to shape the qualification process for environmental professionals, as well as to mutually support each other in our missions. Our Institutional Partners include:

- Chartered Institution of Water and Environmental Management (CIWEM HK);
- Environmental Management Association of Hong Kong (EMAHK);
- Hong Kong Institute of Acoustics (HKIOA);
- Hong Kong Institute of Environmental Impact Assessment (HKIEIA); and
- Hong Kong Institute of Environmental Protection Officers (HKIEPO).

<http://hkiqep.org/membership/qualification-process-2016-17/>

- 1.Environmental Science, Management & Policy
- 2.Air
- 3.Noise
- 4.Water
- 5.Waste
- 6.EIA (&HA)

<http://hkiqep.org/wp-content/uploads/2016/04/HKIQEP-Syllabus-Suggested-Materials-21March2016.pdf>



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