Master of Science in
Environmental Management

Apply now for entry in September 2018
The MSc(EnvMan) is an inter-faculty multi-disciplinary coursework programme. The programme will involve part-time study for a period of two years or full-time study for one year. The programme provides comprehensive training in the field of environmental management, addressing both the major environmental problems and their social, legal and economic context. The contents of the programme have evolved as the World has changed, but the basic objective of providing a broad, integrated overview has remained the same. The teachers are internationally-recognized experts in their fields and have many years of experience in Hong Kong. The programme started in 1989 and over 970 graduates are now pursuing successful careers in government departments, environmental consultancies, NGOs and various industries. For more information about the programme, please visit the following website:

http://www.scifac.hku.hk/pg/prospective/tpg/envm/admission

Admission in September 2018

The Programme offers:

- A multi-disciplinary coursework programme with most teaching on weekday evening. The programme will involve part-time study for a period of two years or full-time study for one year.

- An integrated overview of the field of environmental management, addressing both the major environmental problems and their social, legal, ecological and economic contexts.

- Course materials focused on Hong Kong, but with a strong international and comparative dimension.

- Courses taught by ecologists, engineers, earth scientists, planners, economists, lawyers, and environmentalists from HKU, as well as local practitioners in the field.

Targeted Students

Most students who enter the programme have experience in one of the relevant sub-disciplines – engineering, ecology, environmental chemistry, teaching, planning, journalism etc. However, the MSc is also suitable for fresh graduates and people working in other areas who intend to pursue a career in environmental management, or simply want to enhance their understanding of the field.
Programme Structure
To be eligible for the award of the MSc in Environmental Management, a student shall complete at least 60 credits of courses including core courses (42 - 45 credits) and elective courses (15 - 18 credits).

Part-time Mode (from 2018-2019 onwards):
The list of courses and their contents may be changed from time to time.

Year 1: Core Courses (30-33 credits):
ENVM7003  Introduction to ecology (3 credits)
ENVM7012  Environmental economics and analysis (5 credits)
ENVM7015  Sustainability, society and environmental management (5 credits)
ENVM7014  Environmental quality management (6 credits)
ENVM7015  Research methods and report writing in environmental management (6 credits)
ENVM7016  Environmental policy (5 credits)
ENVM7017  Environmental law in Hong Kong (5 credits)
ENVM7018  Environmental field studies (5 credits)
ENVM7019  Ecological field studies (5 credits)

Year 2: Core Courses (12 credits):
ENVM8004  Dissertation (9 credits)
ENVM8006  Environmental impact assessment (3 credits)

Elective Courses (select any 15 credits if both ENVM7018 & 7019 are taken; OR 18 credits if either ENVM7018 or 7019 is taken only):
(Indicative only: the availability of courses will vary from year to year)
ENVM8003  Conservation biology and management (5 credits)
ENVM8010  Earth science and environmental management (5 credits)
ENVM8011  Environmental auditing and reporting (3 credits)
ENVM8012  Environmental health and risk assessment (3 credits)
ENVM8013  Air and noise pollution control and management (5 credits)
ENVM8014  Special topics in environmental management (5 credits)
ENVM8015  Directed studies in environmental management (6 credits)
ENVM8016  Conservation and management of freshwater resources (5 credits)
ENVM8017  Conservation and management of marine resources (5 credits)
ENVM8018  Urban planning and environmental management (5 credits)
ENVM8019  Corporate sustainability (3 credits)
ENVM8020  Green buildings and energy management (5 credits)

Full-time Mode (from 2018-2019 onwards):
The list of courses and their contents may be changed from time to time.

Core Courses (42-45 credits):
ENVM7003  Introduction to ecology (3 credits)
ENVM7012  Environmental economics and analysis (5 credits)
ENVM7015  Sustainability, society and environmental management (5 credits)
ENVM7014  Environmental quality management (5 credits)
ENVM7015  Research methods and report writing in environmental management (6 credits)
ENVM7016  Environmental policy (5 credits)
ENVM7017  Environmental law in Hong Kong (5 credits)
ENVM8004  Dissertation (9 credits)
ENVM8006  Environmental impact assessment (3 credits)

Select at least one course from the following list:
ENVM7018  Environmental field studies (5 credits)
ENVM7019  Ecological field studies (5 credits)

Elective Courses (select any 15 credits if both ENVM7018 & 7019 are taken; OR 18 credits if either ENVM7018 or 7019 is taken only):
(Indicative only: the availability of courses will vary from year to year)
ENVM8003  Conservation biology and management (5 credits)
ENVM8010  Earth science and environmental management (5 credits)
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ENVM8012  Environmental health and risk assessment (3 credits)
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ENVM8015  Directed studies in environmental management (3 credits)
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ENVM8017  Conservation and management of marine resources (5 credits)
ENVM8018  Urban planning and environmental management (5 credits)
ENVM8019  Corporate sustainability (3 credits)
ENVM8020  Green buildings and energy management (5 credits)

Course Contents - Core Course
ENVM7003  Introduction to ecology
This course deals with the ecological processes determining the distribution and abundance of organisms, and which in turn govern the structure and function of communities and ecosystems. The focus of the course is on how an understanding of ecology is important for environmental management. Together with lectures and student-centered learning, this course also incorporates a practical fieldwork component.

ENVM7012  Environmental economics and analysis
The aim of this course is to equip students with the ability to undertake economic analyses of the environment. The course provides an introduction to economic concepts and principles and applies them to the analysis and management of environmental problems. The course covers the economic understanding of environmental problems (e.g. external costs and benefits, public goods, resource scarcity), economic instruments for environmental management (e.g. taxes, subsidies, tradable permits), methods for valuing environmental goods and services (market and non-market approaches), and economic tools for supporting decision-making (e.g. cost-benefit analysis). All topics will be illustrated with current environmental and policy issues to emphasize their relevance and applicability.

ENVM7013  Sustainability, society and environmental management
This course begins with the intellectual debates on the definitions, conceptions and different interpretations of the notion of sustainable development. The course then moves on to exploring ways of analysing and implementing sustainable development at the macro- and the micro- levels, covering international agreements and campaigns to local projects and practice. A number of tools for sustainable development are also explained including community engagement and sustainability assessment. The course ends with case studies illustrating sustainability solutions such as development of low carbon societies, partnerships for community revitalisation and co-learning approach for sustainability.

ENVM7014  Environmental quality management
This course introduces students to the types, sources and effects of environmental pollution and some of the key principles and strategies used in combating pollution and managing environmental quality. Topics include water and air quality management, solid waste management and noise pollution control, with an emphasis on the situation in Hong Kong.

ENVM7015  Research methods and report writing in environmental management
This course is intended both as preparation for the dissertation, which forms an important part of the study, and as a general introduction to writing reports on environmental issues. Subjects covered include: research design, research methodology (quantitative and qualitative methods, basic data processing and analysis) and report writing. Other research skills such as avoiding plagiarism, literature search and review, report writing and giving oral presentations may also be taught.

ENVM7016  Environmental policy
This course focuses on key aspects of environmental policy making and the policy-implementation processes, such as how policy agendas emerge and evolve, how environmental discourse shapes policy outputs, and how institutions affect the trajectories and outcomes of environmental policy measures. Making references to local, national and international cases of successful and not-so-successful policies that pertain to the sustainable development agenda, the course also examines the theories and praxis of policy transfer and policy convergence, as well as the perennial problematics of policy integration, policy learning and policy failure.
ENVM7017 Environmental law in Hong Kong

This course focuses on the statutory interpretation of the four principal Ordinances and subsidiary legislation dealing with pollution in Hong Kong, namely the Water Pollution Control Ordinance, the Air Pollution Control Ordinance, the Noise Control Ordinance and the Waste Disposal Ordinance. Some consideration will also be given to the Dumping at Sea Ordinance, the Radiation Ordinance, the Merchant Shipping (Prevention and Control of Pollution) Ordinance, the Environmental Impact Assessment Ordinance, the Ozone Layer Protection Ordinance and international conventions effecting the law. Students will study the nature of environmental offences, including the requirement for proving “mens rea” (intent) in order for certain offences to be successfully prosecuted. Students will also be introduced to the principles of judge made law (the Common Law) and will learn to read and interpret relevant case law in order to better understand the current sentencing policies towards environmental offenders, both locally and in other Common Law jurisdictions.

ENVM7018 Environmental field studies

This is an experiential learning course. This course aims to broaden students’ horizon and knowledge base on key aspects of environmental management and nature conservation through a series of field studies and visits to local and overseas organizations. Topics include, but not limited to, conservation and biodiversity management, waste and wastewater treatment processes, water treatment processes, and corporate environmental management in practices. Field studies will be conducted in form of guided visits, field work, and invited lectures or forums according to the topics involved. Study trips outside Hong Kong such as Macau, Mainland China and Taiwan may be considered. Students are required to attend at least 6 sessions organized over the study period.

ENVM7019 Ecological field studies

This is an experiential learning course. This course aims to teach students with the field survey and study skills in biodiversity assessment through an intensive residential field course and some optional field trips. Rapid biodiversity assessment methods and report writing skills will be taught. Students taking this course have to conduct hands on field surveys of common plant and animal groups in Hong Kong such as vascular plants, mammals, birds, amphibians, reptiles and butterflies. Students completing this course shall be able to take part in ecological assessments.

ENVM8004 Dissertation

The dissertation is an individual, independent research project carried out under the supervision of one or more faculty members. Students may propose their own topics and approach possible supervisors, or they may consider those topics suggested by faculty members. Normally, the student develops the research outline in collaboration with his or her Faculty advisor(s) and then collects data, carries out analysis and writes the report prior to the research colloquium where the student will present his/her work. The candidate shall make a formal presentation on the subject of his/her dissertation as required by the programme organizers, during the final semester of the teaching programme.

ENVM8006 Environmental impact assessment

Environmental Impact Assessment (EIA) is one of the most important contemporary instruments of environmental management. Used widely around the world to identify the impacts of development projects as well as strategic plans and policies, EIA plays a key role in many regulatory systems for the environment. This course reviews the development of different approaches to EIA, basic analytical principles, administrative and legal systems for EIA, assessments at the project and strategic levels (SIA), and case study applications in Hong Kong.

Course Contents - Elective Courses

ENVM8003 Conservation biology and management

Conservation biology is the essential scientific element in biodiversity conservation. The course will cover the basic principles and methods of conservation biology from a management perspective. In reality, successful biodiversity conservation projects often require an integration of the welfare of local communities. As such, practical examples from Hong Kong and elsewhere will be used as case studies to illustrate the importance of different elements in conserving the world’s biodiversity.

ENVM8010 Earth science and environmental management

This course examines major issues of earth science of relevance to environmental management. Case studies based on past experiences with application to Hong Kong and other major coastal cities are emphasized. Topics include: chemical composition of earth materials; geochemical surveys; aspects of human health; quaternary record of environmental change; aspects of water resource management; natural and human-induced hazards; coastal management; aspects of waste disposals, etc.

ENVM8011 Environmental auditing and reporting

This course provides an introduction on the concepts of environmental management, auditing and reporting. It is dedicated to the construction, implementation and continuous improvement of an EMS based on ISO14001:2015. This course also examines audit methodology and skills based on ISO19011:2011. Emphasis is placed on practical approaches to improving environmental performance from the audit results. Environmental reporting covers reporting on systems and auditing as well as social and sustainability reporting in accordance to Global Reporting Initiative (GRI). A short introduction is given to energy management standard ISO50001:2011 and carbon auditing standards ISO14064:2006.

ENVM8012 Environmental health and risk assessment

Environmental Risk Assessments (ERAs) are a tool to determine the likelihood that contaminant releases, either past, current, or future, pose an unacceptable risk to human health or the environment. Currently, ERAs are required under various regulations in many developed countries so as to support decision-makers in risk characterization or the selection of cost-effective remedial cleanup. This course introduces the theory and practice of human and ecological risk assessments. Students completing the course will gain a sound knowledge of the concepts and principles of ERAs, management and communication as applied in practice; understand the basic risk assessment tools (i.e. prospective, retrospective and tiered approaches) to environmental risk management; be able to select and apply the simpler tools to tackle risk issues; and appreciate the interpretations of risk and its role in environmental policy formulation and decision making.
Course Contents - Elective Courses

**ENVM8013  Air and noise pollution control and management**

This advanced course focuses on various technical aspects related to air and noise pollution control and their management issues. The topics include micrometeorology; air dispersion modelling; advanced air pollution control (e.g. process modification, energy audit and emission trading); case studies on control of emissions from stationary and mobile source; concept of sound propagation; basic principles of noise control; noise impact assessment and technical mitigation measures for construction, industrial, road traffic, railway and aircraft noise.

**ENVM8014  Special topics in environmental management**

The contents of this course will vary from year to year, depending on the availability of teachers and topics, and will be announced before course selection each year. Hot topics in Hong Kong or overseas that are related to environmental management will be selected. Examples of such topics could include urban tree management; slope greening; nature conservation versus development in rural Hong Kong and China; sustainable development movements. With careful consideration of different needs of various stakeholders, various management options are reviewed and evaluated.

**ENVM8015  Directed studies in environmental management**

This course provides an opportunity for students to study a topic of particular interest under the supervision of a specialist (i.e., a Faculty member) or undertake an internship (Full-time students only) under the supervision of an experienced Environmental Practitioner. The contents of this course will be agreed individually between the student and the supervisor, and may include research project, directed reading, written assignment, laboratory or field work, and/or other activities relevant to environmental management.

**ENVM8016  Conservation and management of freshwater resources**

The overall aim of this course is to introduce the global importance of freshwater resources to sustainable development of mankind. The first half of the course will give an overview of freshwater as a resource for human beings and the global water crisis; human abstractions and pollution of water and impacts on the environment especially aquatic biodiversity. The rest of the course will focus on water management strategy; new and alternative water resources; and challenges and future outlook of freshwater resources especially under the climate change scenarios. Students taking this course will gain an appreciation of the trade-offs inherent in water resource management, and the practices that can be adopted to conserve freshwater biodiversity in the complex context of maintaining human livelihoods.

**ENVM8017  Conservation and management of marine resources**

The marine environment has been an important source of its fortunes but today suffers from a range of perturbations, from pollution and habitat destruction, to community loss and over-exploitation. This course primarily deals with pressing issues of marine resource conservation and management in Hong Kong. An overview of the current global situation of marine resources will be presented with an emphasis on the local situation. The past and present exploitation of marine resources and human impacts on the marine ecosystem are addressed with a view to identifying problems and providing practical solutions. Real cases are taken from Hong Kong as example to illustrate the crisis and its management options. Various management options are reviewed and evaluated with careful consideration of different needs of various stakeholders. The key topics of this course include marine pollution, habitat destruction, biological invasion, biodiversity conservation, fisheries, mariculture and harmful algal bloom.

**ENVM8018  Urban planning and environmental management**

This course lays down the challenges of achieving environmental sustainability in cities. It highlights the important role of urban planning and its related tools and instruments in managing development pressure, mitigating environmental impacts and conserving the ecological sensitive areas. The course begins with an introduction to the fundamental functions and processes of planning. Illustrated with real-life case studies, the course then focuses on the application of various planning tools and methods and their effectiveness in conservation and resolving urban-rural conflicts. These include land-use planning, planning law and enforcement, public-private partnership models, green building initiatives, etc. Through a series of Problem-based Learning (PBL) sessions, students debate on a chosen current affair on environmental planning such as planning and development of ecological sensitive area on private land, planning for facilities with environmental nuisances, agricultural planning for conservation.
Programme Duration and Class Schedules
This programme will involve part-time study for a period of two years or full-time study for one year. Teaching takes place mainly on weekday evenings, but there may be a few sessions on Saturday, as well as a small number of field trips. All lectures are given in English.

Assessment
Courses in the programme are assessed in a variety of ways, by written coursework, examinations, or both. A dissertation on a topic of the student’s choice forms an important part of the study.

Tuition Fees
The composition fee for the full-time programme is HK$120,000 for 2018-19 intake and that for the part-time programme is HK$60,000 per year for two years. The fee shall be payable in two installments over one year for full-time study or in four installments over two years for part-time study. In addition, students are required to pay Caution Money (HK$350, refundable on graduation subject to no claims being made) and Graduation Fee (HK$350). For occasional students, the tuition fee is HK$2,000 per credit.

Prizes
Each year Ada and Arthur Hill Prize in Environmental Management and Fred Kan and Co Prize are awarded to meritorious students.

Admission Requirements
A Bachelor’s degree with Honours in any field. Work experience is useful but not essential.

Application
Application will be considered immediately until all places are filled. The closing dates for non-local and local applications are April 30, 2018 and June 29, 2018 respectively.

Course details can be downloaded from http://www.biosch.hku.hk/envm/index.html or http://www.scifac.hku.hk/pg/prospective/tpg
Online application can be accessed via http://www.aal.hku.hk/tpg/

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http://www.biosch.hku.hk/envm/index.html

ENVM8019 Corporate sustainability
Corporate sustainability focuses on the business sector’s role and contribution to achieving sustainability. In recent years, the expectations of business to act sustainably are higher than ever before. The scope has extended from contributing to the social welfare of the society or avoiding environmental degradation to a new business approach that creates long term value for the business by embracing opportunities and managing risks deriving from economic, environmental and social developments. The course examines the commonly used tools in corporate sustainability and corporate social responsibility (CSR), including shared value, inclusive business, corporate community investment, environmental management systems, life-cycle analysis and clean production. It reviews the business relationships with the environment and society expressed in the concepts of sustainable production and consumption. The course also emphasizes the importance of learning about current practice in the business sector, and thus guests from corporate sector will be invited to share their experience with students.

ENVM8020 Green buildings and energy management
One of the ways to tackle global climate change is to significantly enhance energy efficiency especially in buildings. This course will introduce the global trends in the green building movement with focuses on current energy management in new and existing buildings in Hong Kong e.g. BEAM Plus. The course will introduce various aspects of energy efficiency including laws and codes; assessment tools; methods to analyse energy uses in different types of buildings and practical energy conservation measures. This course stresses on practical knowledge and experiences in energy management in buildings. Thus, experienced practitioners in the field are engaged to deliver some of the course content.

Professional Accreditation
This programme is accredited by the Institute of Environmental Management and Assessment (IEMA) http://www.iema.net

# Subject to approval