REGULATIONS FOR THE DEGREE OF MASTER OF SCIENCE IN ENVIRONMENTAL MANAGEMENT (MSc[EnvMan])

(See also General Regulations)

Any publication based on work approved for a higher degree should contain a reference to the effect that the work was submitted to the University of Hong Kong for the award of the degree.

Admission requirements

Sc40 To be eligible for admission to the courses leading to the degree of Master of Science in Environmental Management a candidate

(a) shall comply with the General Regulations;

(b) shall hold:

(i) a Bachelor's degree with honours of this University; or

(ii) another qualification of equivalent standard from this University or from another University or comparable institution accepted for this purpose; and

(c) shall satisfy the examiners in a qualifying examination if required.

Sc40A A candidate who does not hold a Bachelor's degree with honours of this University or another qualification of equivalent standard may in exceptional circumstances be permitted to register if he/she demonstrates adequate preparation for studies at this level and satisfies the examiners in a qualifying examination.

Qualifying examination

Sc41

(a) A qualifying examination may be set to test the candidate's formal academic ability or his/her ability to follow the courses of study prescribed. It shall consist of one or more written papers or their equivalent.

(b) A candidate who is required to satisfy the examiners in a qualifying examination shall not be permitted to register until he/she has satisfied the examiners in the examination.

Award of degree

Sc42 To be eligible for the award of the degree of Master of Science in Environmental Management a candidate

(a) shall comply with the General Regulations; and

(b) shall complete the curriculum and satisfy the examiners in accordance with the regulations set out below.

Length of curriculum

Sc43 The curriculum shall extend over not less than two academic years of part-time study, with a minimum of 300 hours of prescribed work and shall include a written examination.

Completion of curriculum

Sc44 To complete the curriculum, a candidate

(a) shall follow courses of instruction and complete all prescribed written work, practical work and field work;

(b) shall complete and present a satisfactory dissertation on an approved subject; and

(c) shall satisfy the examiners in all courses prescribed in the syllabuses.

Dissertation

Sc45 The title of the dissertation shall be submitted by June 1 of the first academic year and the dissertation shall be submitted by a date specified by the Board of Studies; the candidate shall submit a statement that the dissertation represents their own work undertaken after registration as a candidate for the degree. 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; and the dissertation and presentation shall count as 9 credits.

Examinations

Sc46 The examination in any course shall consist of elements prescribed by the course teachers, and will normally comprise either written coursework alone, or coursework combined with formal examination; in either case participation in field work or practical work may form part of the examination.

Sc47 A candidate who fails to satisfy the examiners at the first attempt in any course examined at the end of a semester may be permitted to present himself/herself for re-examination in the failed course(s) at supplementary examination(s) to be held in May (for failures in Semester I) and August (for failures in Semester II).

Sc47A A candidate who presents himself/herself for re-examination in any subject shall not be eligible for the award of more than a pass mark in that subject.

Sc48 A candidate who has failed to satisfy the examiners in any course examined during a year of study (but excluding the dissertation in the second year of study) or in any course at a repeated attempt, may be (a) required to repeat a year of the curriculum and present himself/herself for examination in the prescribed courses for the repeated year; or (b) recommended for discontinuation of studies.

Sc49 A candidate who has failed to satisfy the examiners in the dissertation :

(a) may be required to make minor corrections and amendments as specified by the Board of Examiners, and to submit the corrected/amended dissertation by a specified date, without the necessity for a fresh examination; or

(b) may be required to submit for examination a new or revised dissertation by a date to be specified by the Board of Examiners. Such a candidate shall not be eligible for more than a pass mark for the dissertation. A candidate who failed to satisfy the examiners in the revised or new dissertation may be recommended for discontinuation of studies. Similarly a candidate who fails to submit the revised or new dissertation may be recommended for discontinuation of studies.

Sc50 A candidate who is unable because of his/her illness to be present for one or more papers in any written examination may apply for permission to present himself/herself at a supplementary examination to be held before the beginning of the following academic year. Any such application shall be made on the form prescribed within two weeks of the first day of the candidate's absence from the examination. An examination in these circumstances shall not be subject to regulation Sc47A above.

Examination results

Sc51 At the conclusion of the examination, a pass list shall be published. A candidate who has shown exceptional merit at the whole examination may be awarded a mark of distinction, which shall be recorded in the candidate's degree diploma.

SYLLABUSES FOR THE DEGREE OF MASTER OF SCIENCE IN ENVIRONMENTAL MANAGEMENT

A candidate shall follow and be examined in at least 48 credits: normally 24 credits in their first year of study and 24 credits in their second year of study. A 3-credit course will normally consist of 18-24 hours of lectures, seminars, workshops or field trips.

A. COURSE STRUCTURE

The list of courses, and their contents set out thereafter, will be changed from time to time.

FIRST YEAR

Core courses (24 credits) *

ENVM7003 Introduction to ecology (3 credits)
ENVM7012 Environmental economics and analysis (3 credits)
ENVM7013 Principles of sustainable development (3 credits)
ENVM7014 Environmental quality management (6 credits)
ENVM7015 Research methods and report writing in environmental management (3 credits)
ENVM7016 Environmental policy (3 credits)
ENVM7017 Environmental law in Hong Kong (3 credits)

By June 1 students must have submitted their dissertation titles to the Board of Studies. They will be expected to make a start on the work for this dissertation during the long vacation.

* Alternative courses from other taught Masters programmes at HKU may be accepted at the discretion of the Programme Coordinator.

SECOND YEAR

Core courses (12 credits)

ENVM8004 Dissertation (9 credits) #
ENVM8006 Environmental impact assessment (3 credits)

Elective courses (12 credits) [Indicative only: courses available will vary from year to year]

ENVM8003 Conservation biology and management (3 credits)
ENVM8010 Earth science and environmental management (3 credits)
ENVM8011 Environmental auditing and reporting (3 credits)
ENVM8012 Environmental risk assessment (3 credits)
ENVM8013 Air and noise pollution control and management (3 credits)
ENVM8014 Special topics in environmental management (3 credits)
ENVM8015 Directed studies in environmental management (3 credits)
ENVM8016 Conservation and management of freshwater ecosystems (3 credits)

Relevant courses from other taught Masters programmes at HKU can be taken as electives with the agreement of both Programme Coordinators.

\# Students are also required to attend a colloquium at which presentations are made based on the work for the dissertations. The presentations will be assessed and this will contribute to the final grade awarded for the dissertation. On the successful completion of the degree, a copy of the dissertation will be lodged in the University Library, so all material included in the dissertation should be suitable for public access.

B. COURSE CONTENTS

FIRST YEAR

ENVM7003. Introduction to ecology (3 credits)

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 based at the Swire Institute of Marine Science.

ENVM7012. Environmental economics and analysis (3 credits)

The aim of this course is to equip students with the ability to undertake an economic analysis of the environment. It will examine the environment in the context of the market mechanism and policies for improving environmental performance. There will be an emphasis on market failure and strategies for internalizing the external costs of environmental damage. A good deal of attention will be paid to cost-benefit analysis and methodologies for the valuation of the environment. There will also be a consideration of alternative policy instruments from an economic perspective. The aim is also to examine way of managing resources in a way that is both economically and environmentally efficient.

ENVM7013. Principles of sustainable development (3 credits)

This course examines the emergence of the sustainable development paradigm and its role in guiding the design of environmental policy. The concept of sustainable development is discussed in its historical context and alternative formulations and interpretations are reviewed. The relationships between sustainable development and other emerging bodies of theory and practice, such as ecological modernization, are also examined. The course reviews how policies for enhanced sustainability can be develop and implemented at the urban, regional and international levels. These issues will be demonstrated in the context of Hong Kong, China and countries elsewhere in the world.

ENVM7014. Environmental quality management (6 credits) *(equivalent to 2 courses)*

This course introduces students to the types, sources and effects of environmental pollution and some of the key strategies used in combating pollution. Topics include water and air quality management, solid waste management and noise pollution control, with an emphasis on the situation in Hong Kong. Aspects of pollution control legislation and its enforcement, environmental education and conservation will also be covered.

ENVM7015. Research methods and report writing in environmental management (3 credits)

This course is intended both as preparation for the dissertation, which forms a major part of the second year of the programme, and as a general introduction to writing reports on environmental issues. It will be taught as a series of lectures, seminars and workshops spread over the first year. Subjects covered will include: selecting a topic; the scientific method; asking questions; searching for information; surveys and interviews; the case study approach; formats, styles and presentation; avoiding plagiarism; citing sources; giving oral presentations; dealing with the media.

ENVM7016. Environmental policy (3 credits)

This course focuses on processes of environmental policy making: how policy agendas emerge and evolve, the drivers and barriers influencing policy development, institutional structures for environmental policy making, stakeholder engagement, and the implementation of environmental policy. Theories of policy making are explored in relation to the environment and sustainable development. Environmental policy making systems and outcomes are reviewed through local and international case studies.

ENVM7017. Environmental law in Hong Kong (3 credits)

This course will focus 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.

SECOND YEAR

ENVM8003. Conservation biology and management (3 credits)

Conservation biology is the science of preserving biological diversity. Like medicine, it is an inexact, applied, mission-oriented, multi-disciplinary science, with built-in values. This course is concerned with biodiversity issues in environmental management. It aims to teach, in a non-technical way, the basic principles of conservation biology and show how they can be applied in conservation management. Wherever possible, local examples will be used.

ENVM8004. Dissertation (9 credits) *(equivalent to 3 courses)*

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 suggested by faculty members. Normally, the student develops the research outline in collaboration with his or her faculty advisor and then collects data, carries out analysis and writes the report prior to the colloquium.

ENVM8006. Environmental impact assessment (3 credits)

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 systems for EIA, assessments at the project and strategic levels (SIA), and case study applications in Hong Kong.

ENVM8010. Earth science and environmental management (3 credits)

This course will examine 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 will be 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 (3 credits)

This course is dedicated to the construction of an integrated environmental management system (EMS). The course will consider the design of the system, its implementation and issues of continuous improvement. Environmental auditing will be dealt with in the context of the systems-based approach and will examine audit methodology, measurement and quality assurance. The approach will be extended to the auditing of supply chains (particularly in China). Emphasis will be placed on practical approaches to improving environmental performance over time. Methods and techniques of reporting on systems and auditing will include both environmental reports as well as social and sustainable development reporting.

ENVM8012. Environmental risk assessment (3 credits)

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 will introduce 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 (e.g. 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.

ENVM8013. Air and noise pollution control and management (3 credits)

Micrometeorology - mixing height, lapse rate, stability classification; Introduction to air dispersion modelling; Advanced air pollution control - process modification, energy audit, emission trading, case studies on control of emissions from stationary and mobile source; Concept of sound propagation; Basic principles of noise control; Assessment of and technical mitigation measures for construction, industrial, road traffic, railway and aircraft noise.

ENVM8014. Special topics in environmental management (3 credits)

The contents of this course will vary from year to year, depending on the availability of teachers, and will be announced before course selection for the second year. The course will cover one or more topical issues in depth.

ENVM8015. Directed studies in environmental management (3 credits)

This course provides an opportunity for students to study a topic of particular interest under the supervision of a specialist. The contents of this course will be agreed individually between the student and a teacher, and may include directed reading, written assignment, laboratory or field work, and other activities. The contents and mode of assessment must be agreed beforehand by the Programme Coordinator.

ENVM8016. Conservation and management of freshwater ecosystems (3 credits)

Fresh water is an essential requirement of humans, plants and animals, but only a tiny fraction of the water on Earth (0.03%) is available for use. Furthermore, because water is used by humans in multiple ways (e.g. domestic and industrial consumption, agriculture, hydropower generation, navigation and transport), and is subject to a variety of anthropogenic impacts (pollution, flow regulation and dewatering, over-exploitation of fisheries, etc.), there is potential for conflict among different interest groups (e.g. those in the upstream and downstream parts of river basins). Such conflicts will be exacerbated by ongoing changes in global climate that impact water availability. In addition, environmental requirements for water to maintain biodiversity as well as ecosystem goods and services need to be taken into consideration alongside human demands if global water use is to be sustainable. This course offers an introduction to the problems associated with human use of water and current patterns of water resource management, and explains how the characteristics of natural systems constrain sustainable use of water. Emphasis will be placed on examples of river and lake management that can indicate the reasons for success and failure of sustainable water resource use, with particular emphasis placed on regional examples. 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.