REGULATIONS FOR THE DEGREES OF MASTER OF SCIENCE (MSc) AND MASTER OF SCIENCE IN ENVIRONMENTAL MANAGEMENT (MSc[Env Man])

For students admitted in 2012-2013 and thereafter

(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.

The degree of Master of Science is a postgraduate degree awarded for the satisfactory completion of a prescribed course of study in one of the following four fields: Applied Geosciences, Food Industry: Management and Marketing, Food Safety and Toxicology, and Material Science.

The degree of Master of Science in Environmental Management is a postgraduate degree awarded for the satisfactory completion of a prescribed course of study in Environmental Management.

Admission requirements

(i) a Bachelor's degree with honours of this University; or
(ii) another qualification of equivalent standard of this University or another University or comparable institution accepted for this purpose; and shall satisfy the examiners in a qualifying examination if required.

Sc21 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 the candidate can demonstrate adequate preparation for studies at this level and satisfies the examiners in a qualifying examination.

Qualifying examination

Sc22

A qualifying examination may be set to test the candidate's academic ability to follow the course of study prescribed. It shall consist of one or more written papers or equivalent and may include a project proposal.

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

Sc23

(a) To be eligible for the award of the degree of Master of Science or Master of Science in Environmental Management, a candidate
  (i) shall comply with the General Regulations; and
  (ii) shall complete the curriculum and satisfy the examiners in accordance with these regulations and syllabuses.

(b) A candidate (both full-time and part-time) who has not satisfied the examiners for the award of the Degree of Master of Science in the field of Applied Geosciences but has achieved good grades in 30 credits including 18 credits of core courses in the PGDES and satisfied the

requirements for award of PGDES may be allowed to exit with PGDES, subject to the approval of the Faculty Board. Those who are allowed to take this exit path will not be re-admitted to the Degree of Master of Science in the field of Applied Geosciences.

Transfer of candidature into the Master of Science in the field of Applied Geosciences

Sc24

(a) Subject to the approval of the Faculty Board, a candidate who has registered for the PGDES may be allowed to transfer to read the Master of Science in the field of Applied Geosciences and advanced credits of up to 30 credits may be granted. Application for the transfer must be made prior to the BoE's recommendation for conferment of the PGDES, or before August 31 of the final year of PGDES, whichever is earlier.

(b) A candidate who has transferred his/her candidature to the Master of Science in the field of Applied Geosciences will not be awarded the PGDES. If a candidate after transferring to the Master of Science in the field of Applied Geosciences fails to complete the Master of Science, he/she may be awarded the PGDES provided that he/she has satisfied the requirements of the PGDES.

Length of curriculum

Sc25 The part-time mode of the Master of Science and the Master of Science in Environmental Management shall extend over not less than two academic years of part-time study and the full-time mode of the Master of Science and the Master of Science in Environmental Management shall extend over not less than one academic year. Candidates in either degree shall not be permitted to complete the curriculum in more than 3 academic years, except with the approval of the Faculty Board.

Completion of curriculum

Sc26 To complete the curriculum of the Master of Science or Master of Science in Environmental Management, a candidate

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

(b) shall complete and present a satisfactory dissertation or project on an approved subject or complete courses with equivalent credits as a replacement; and

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

Dissertation or Project

Sc27 The title of the dissertation or project shall

(a) for the full-time mode of Master of Science (except MSc in Environmental Management), be submitted for approval by October 15 and the dissertation or project report shall be submitted not later than August 15 in the subsequent year;

(b) for the full-time curriculum of MSc in Environmental Management, be submitted by October 15 and the dissertation shall be submitted by a date specified by the Board of Studies;

(c) for the part-time curriculum (except MSc in Environmental Management), be submitted for approval by March 15 of the first year of study in which the teaching curriculum ends and the dissertation or project report shall be submitted not later than April 15 of the second year of study;

(d) for the part-time curriculum of MSc in Environmental Management, 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.

Sc 28 A candidate shall submit a statement that the dissertation or project represents his/her own work (or in the case of co-joint work, a statement countersigned by his/her worker, which shows his/her share of the work) undertaken after registration as a candidate for either degree.

Assessments

Sc29 The assessment 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 examinations; in either case participation in field work or practical work may form part of the assessment.

Sc30 A candidate who has failed to satisfy the examiners

(a) at his/her first attempt in any course in the examination held during any of the academic years of study may be permitted to present himself/herself for re-examination in the course or courses at a specified subsequent examination, with or without repeating any part of the curriculum;
(b) at his/her first submission of dissertation or project report may be permitted to submit a new or revised dissertation or project report within a specified period;
(c) in any prescribed fieldwork or practical work may be permitted to present himself/herself for re-examination in fieldwork or practical work within a specified period.

Sc31 Failure to take the examination as scheduled, normally results in automatic course failure. A candidate who is unable because of illness to be present at any examination of a course, may apply for permission to be present at some other time. Any such application shall be made on the form prescribed within two weeks of the examination.

Discontinuation

Sc32 A candidate who

(a) has failed to satisfy the examiners in more than half the number of credits of courses during any of the academic years or in any course at a repeated attempt, or
(b) is not permitted or fails to submit a new or revised dissertation or project report, or
(c) has failed to satisfy the examiners in their dissertation or project report at a second attempt,

may be recommended for discontinuation of studies.

Examination results

Sc33 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, and this mark shall be recorded in the candidate's degree diploma.

SYLLABUSES FOR THE DEGREE OF MASTER OF SCIENCE IN THE FIELD OF APPLIED GEOSCIENCES

(for students admitted in 2013-14)

A. COURSE STRUCTURE

To be eligible for the award of the MSc in the field of Applied Geosciences a student shall complete all core courses prescribed in a selected theme and elective courses totalling 66 credits.

SIX THEME OPTIONS

CLIMATE AND EARTH SCIENCES STUDIES THEME

Core Courses (51 credits)

GEOS7010/GEOS7023	* Geology Principles and Practice (6 credits)/Geology for Geotourism (6 credits)
GEOS7011	Advanced Geology of Hong Kong (6 credits)
GEOS7020	Project I (3 credits)
GEOS7021	Geological Fieldwork I (3 credits)
GEOS8002	Professional Practice in Applied Geosciences (3 credits)
GEOS8003	Seminars on Unforeseen Ground Conditions, Geotechnical and Environmental Failures (3 credits)
GEOS8020	Project II (9 credits)
GEOS8207	Global Climate (6 credits)
GEOS8208	Climate Change and the Environment (6 credits)
GEOS8209	Climate Change and Society (6 credits)

* Graduates in Earth Sciences cannot take this course. They must take course(s) worth 6 credits in its place.

ENGINEERING GEOLOGY THEME

Core Courses (63 credits)

GEOS7010/GEOS7023	* Geology Principles and Practice (6 credits)/Geology for Geotourism (6 credits)
GEOS7011	Advanced Geology of Hong Kong (6 credits)
GEOS7012	Site Investigation and Engineering Geological Techniques (6 credits)
GEOS7015	Rock Mechanics (3 credits)
GEOS7016	+ Soil Mechanics (3 credits)
GEOS7020	Project I (3 credits)
GEOS7021	Geological Fieldwork I (3 credits)
GEOS8001	Hydrogeology (3 credits)
GEOS8002	Professional Practice in Applied Geosciences (3 credits)
GEOS8003	Seminars on Unforeseen Ground Conditions, Geotechnical and Environmental Failures (3 credits)
GEOS8005	Field Testing and Instrumentation in Engineering Geology 3 credits)
GEOS8020	Project II (9 credits)
GEOS8101	Engineering Geology and Geotechnical Design (6 credits)
GEOS8102	Rock Engineering and Geomaterials (6 credits)

* Graduates in Earth Sciences cannot take this course. They must take course(s) worth 6 credits in its place.

+ Graduates in Civil Engineering cannot take this course for credits. They must take another 3 credit course in its place.

ENGINEERING GEOLOGY WITH HKIE APPROVED COURSES THEME

Core Courses (66 credits)

GEOS7012	Site Investigation and Engineering Geological Techniques (6 credits)
GEOS7015	Rock Mechanics (3 credits)
GEOS7016	Soil Mechanics (3 credits)
GEOS7020	Project I (3 credits)
GEOS7024	Management (3 credits)
GEOS8001	Hydrogeology (3 credits)
GEOS8002	Professional Practice in Applied Geosciences (3 credits)
GEOS8003	Seminars on Unforeseen Ground Conditions, Geotechnical and Environmental Failures (3 credits)

GEOS8005	Field Testing and Instrumentation in Engineering Geology (3 credits)
GEOS8020	Project II (9 credits)
GEOS8101	Engineering Geology and Geotechnical Design (6 credits)
GEOS8102	Rock Engineering and Geomaterials (6 credits)
GEOS8204	Basic Structural Mechanics and Behaviour (3 credits)
GEOS8205	Mathematics I (6 credits)
GEOS8206	Mathematics II (6 credits)

ENVIRONMENTAL GEOLOGY THEME

Core Courses (45 credits)

GEOS7004	Earth Science and Environmental Management (3 credits)
GEOS7010/GEOS7023	* Geology Principles and Practice (6 credits)/Geology for Geotourism (6 credits)
GEOS7011	Advanced Geology of Hong Kong (6 credits)
GEOS7012	Site Investigation and Engineering Geological Techniques (6 credits)
GEOS7020	Project I (3 credits)
GEOS7021	Geological Fieldwork I (3 credits)
GEOS8002	Professional Practice in Applied Geosciences (3 credits)
GEOS8003	Seminars on Unforeseen Ground Conditions, Geotechnical and Environmental Failures (3 credits)
GEOS8020	Project II (9 credits)
GEOS8201	Applied Geochemistry (3 credits)

* Graduates in Earth Sciences cannot take this course. They must take course(s) worth 6 credits in its place.

GEOSCIENCES WITH SUSTAINABLE DEVELOPMENT THEME

Core Courses (51 credits)

GEOS7004	Earth Science and Environmental Management (3 credits)
GEOS7010/GEOS7023	* Geology Principles and Practice (6 credits)/Geology for Geotourism (6 credits)
GEOS7011	Advanced Geology of Hong Kong (6 credits)
GEOS7012	Site Investigation and Engineering Geological Techniques (6 credits)
GEOS7020	Project I (3 credits)
GEOS7021	Geological Fieldwork I (3 credits)
GEOS8002	Professional Practice in Applied Geosciences (3 credits)
GEOS8003	Seminars on Unforeseen Ground Conditions, Geotechnical and Environmental Failures (3 credits)
GEOS8020	Project II (9 credits)
ENVM7013	Sustainability, Society and Environmental Management (3 credits)
ENVM7016	Environmental Policy (3 credits)
ENVM7017	Environmental Law in Hong Kong (3 credits)

* Graduates in Earth Sciences cannot take this course. They must take course(s) worth 6 credits in its place.

GENERAL APPLIED GEOSCIENCES THEME

Core Courses (33 credits)

GEOS7010/GEOS7023	* Geology Principles and Practice (6 credits)/Geology for Geotourism (6 credits)
GEOS7011	Advanced Geology of Hong Kong (6 credits)
GEOS7020	Project I (3 credits)
GEOS7021	Geological Fieldwork I (3 credits)
GEOS8002	Professional Practice in Applied Geosciences (3 credits)
GEOS8003	Seminars on Unforeseen Ground Conditions, Geotechnical and Environmental Failures (3 credits)
GEOS8020	Project II (9 credits)

* Graduates in Earth Sciences cannot take this course. They must take course(s) worth 6 credits in its place.

Elective Courses	
GEOS7027	Earth Systems (6 credits)
GEOS8021	Geological Fieldwork II (3 credits)
GEOS8202	Development and management of mineral resources (3 credits)
GEOS8213	Global Tectonics (6 credits)
GEOS8214	Structural Geology (6 credits)
GEOS8215	Sedimentology (6 credits)
GEOS8218	Meteorology (6 credits)
GEOS8219	Igneous and Metamorphic Petrology (6 credits)
GEOS8220	Mineralogy and Geochemistry (6 credits)
GEOS8221	Earth Resources (6 credits)
ENVM7012	Environmental Economics and Analysis (3 credits)
ENVM8006	Environmental Impact Assessment (3 credits)
ENVM8011	Environmental Auditing and Reporting (3 credits)
ENVM8012	Environmental Health and Risk Assessment (3 credits)
CIVL6079	Slope Engineering (6 credits)

Certain courses not included in the list above may be accepted as alternative electives at the discretion of the programme director. Timetabling of courses may limit availability of some elective courses. Certain courses have prerequisites and Grade bars, including those shown below.

B. COURSE CONTENTS (Provisional)

GEOS7004 Earth Science and Environmental Management (3 credits)

The course examines major issues of earth science of relevance to environmental management. Case studies relevant to coastal cities will be presented. Topics include chemical composition of earth materials, geochemical surveys for pollution monitoring, geology and human health, environmental change in the Quaternary Period, fluvial and coastal processes and management, environmental impact of mining and dredging, geological aspects of land use planning, water resource management and waste disposal.

GEOS7010 Geology Principles and Practice (6 credits)

A review of fundamental concepts in geoscience, including earth and geological processes, surface processes, minerals and rocks, geological structures and geological map interpretation. The course also introduces the rocks and geological formations of Hong Kong.

GEOS7011 Advanced Geology of Hong Kong (6 credits)

This advanced course examines specialist aspects of the rocks and geological formations and structures of Hong Kong and their significance in the context of geotechnical engineering, environmental management and resource development. Topics include volcanic and granitic rocks, sedimentary and metamorphic rocks, weathering processes, superficial deposits, geology and geological aspects of landslides.

Pre-requisite course: Pass in GEOS7010 / GEOS7023

GEOS7012 Site Investigation and Engineering Geological Techniques (6 credits)

A professional course on the concepts and skills used in geotechnical site investigation. Topics include the design of site investigations, desk study and walkover survey, aerial photographic interpretation, soil and rock description and classification, ground investigation technology and soil and rock laboratory testing.

GEOS7015 Rock Mechanics (3 credits)

The course introduces the basic concepts of rock mechanics used in geotechnical practice. Topics include index properties, strength and deformability of intact rock; distribution and measurement of in-situ stresses; and shear strength of discontinuities in rock masses.

GEOS7016 Soil Mechanics (3 credits)

An examination of the basic soil mechanics theory used in geotechnical practice. The course reviews phase relationships, soil classification, compaction, fluid flow and effective stress concepts; and provides a more detailed analysis of elasticity, shear strength and consolidation.

GEOS7020 Project I (3 credits)

The first phase of an independent study of a problem in applied geosciences. It involves literature review, data collection and data analysis. Students are required to write an inception report and give a presentation on their proposed study. Work is required on the project during the summer following the second semester. Professional geologists are expected to undertake a field mapping task as part of their project.

GEOS7021 Geological Fieldwork I (3 credits)

Self-directed study in the field over a 6-month period leading to the production of maps, field sheets, narrative accounts and other geological records for assessment. The fieldwork may be undertaken in association with the excursions of the Department of Earth Sciences, the local learned societies or independently. (Marked on a pass/fail basis.)

GEOS7023 Geology for Geotourism (6 credits)

This will be a joint course with GEOS7010 Geology Principles and Practice (6 credits).

GEOS7024 Management (3 credits)

This subject will cover most of the following. Engineering processes, programming and procurement strategies: project framework, common methods for obtaining investigation, design and construction services and project programming. Contract management: Engineer's and contractor's site organisation, common forms of contract, specifications, methods of measurement, quantities and cost estimation, variations and claims, approaches to dispute resolution. Construction site safety, health and environmental aspects: Relevant regulations, environmental impacts of works and mitigation strategies. Quality control and quality assurance.

GEOS7027 Earth Systems **(6 credits)**

To provide an appreciation of the Earth System and the interfaces between its component parts, in order that students might appreciate how informed decisions can be made on the future exploitation and preservation of the planet. To provide a forum for discussion of global issues facing earth scientists.

GEOS8001 Hydrogeology (3 credits)

To study the role of sub-surface water in engineering and environmental applications. Topics include the hydrologic cycle, properties of aquifers controlling the transmissivity storage and quality of groundwater, quantification of groundwater flow, the field investigation of groundwater and assessment of field parameters and applications of hydrogeology in engineering and environmental studies.

GEOS8002 Professional Practice in Applied Geosciences (3 credits)

An examination of issues in professional practice in applied geoscience, including regulation of practice, professional ethics and law, contracts and risk management.

GEOS8003 Seminars on Unforeseen Ground Conditions, Geotechnical and Environmental Failures (3 credits)

A series of student-led seminars on case histories of landslides, collapses of engineering structures, excessive ground settlement and environmental disasters. Presentations of facts and opinions are given by students based on suggested reading material.

GEOS8005 Field Testing and Instrumentation in Engineering Geology (3 credits)

The course introduces several commonly used geophysical methods and in-situ testing techniques, including penetration tests, seismic cones, land geophysical surveys such as seismic refraction, microgravity, magnetic and conductivity surveys, ground penetrating radar, electrical imaging and downhole geophysical logging, and marine geophysics such as seismic and side-scan sonar surveys.

GEOS8020 Project II (9 credits)

The second phase of an independent study of a problem in applied geosciences culminating in the preparation of a project report of about 8000 words. Students will be required to make a presentation of their preliminary results.

GEOS8021 Geological Fieldwork II (3 credits)

Self-directed study in the field over a 6-month period leading to the production of maps, field sheets, narrative accounts and other geological records for assessment. The fieldwork may be undertaken in association with the excursions of the Department of Earth Sciences, the local learned societies or independently. (Marked on pass/fail basis.)

GEOS8101 Engineering Geology and Geotechnical Design (6 credits)

An examination of civil engineering design methodology and the application of soil mechanics theory and empiricism in geotechnical design. Emphasis is given to soil slopes and embankments, earth pressure and retaining structures and shallow and deep foundations.

Pre-requisite course: Pass in GEOS7016

GEOS8102 Rock Engineering and Geomaterials (6 credits)

This course starts with a brief introduction to the design methodology and the systems approach in rock engineering, and is mainly focused on the collection and analyses of engineering geological data for the design of rock structures. Uses of rock mechanics input and empirical classifications in analysis and design of rock slopes, tunnel excavation and support systems, and rock foundations are demonstrated through case histories.

Pre-requisite course: Pass in GEOS7015

GEOS8201 Applied Geochemistry (3 credits)

Principles and hands-on experience of analytical techniques including nebulization ICP-MS, XRF and XRD; Basics of Environmental Geochemistry, Chemical Weathering, Clay Mineralogy, and Aqueous Geochemistry; Applications of Geochemistry to environmental problems; Case Studies, with an emphasis on Hong Kong

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GEOS8202 Development and Management of Mineral Resources (3 credits)

The course will give an overview of the life cycle of a mining project and insight into the making of investment decisions in mining projects. Environmental management systems will be introduced and economic issues in mining project development will be outlined.

GEOS8204 Basic Structural Mechanics and Behaviour (3 credits)

The subject will cover most of the following:
Behaviour of structural members subjected to tension, compression, bending, shear and torsion. Buckling of compression members. Statically determinate and indeterminate structures; including the concept of redundancy of structural members. Load transfer mechanisms of structural systems including foundations and shoring systems. General behaviour and basic concepts in design of reinforced concrete members. Structural design of foundations and retaining walls.

GEOS8205 Mathematics I (6 credits)

This course will cover the following topics: elementary and advanced calculus, matrix and vector algebra.

GEOS8206 Mathematics II (6 credits)

This course will cover the following topics: ordinary and partial differential equations, introduction to probability and statistics.

GEOS8207 Global Climate (6 credits)

Processes in the oceans and atmosphere. Heating the system, development of ocean currents, winds, clouds, and resources. Effects of coupling, climate change, pollution. Atmospheric structure and composition, global ocean and atmospheric circulation patterns, El Niño-La Niña and case studies of ocean-atmosphere feedbacks, formation of winds, storms and ocean currents.

GEOS8208 Climate Change and the Environment (6 credits)

The Quaternary Period comprises the last 2.6 million years of Earth history, an interval dominated by climate fluctuations and the waxing and waning of large northern hemisphere ice sheets. This course will cover the many types of evidence used to reconstruct ocean and atmospheric conditions through the Quaternary.

GEOS8209 Climate Change and Society (6 credits)

This course will explore the role of humans in global change and the environmental responses to such changes. It will also take a look at human evolution and migration from a paleoenvironmental perspective.

GEOS8213 Global Tectonics (6 credits)

This course is intended to provide students with an understanding of the driving forces of Earth processes and the global outcome of these processes through an examination of direct and indirect observations, the evolution of hypotheses, and critical thinking.

GEOS8214 Structural Geology (6 credits)

The course covers the mechanical properties of rocks and how they are deformed, geological maps and their use in interpreting structure. Topics which may be covered include: Stress-strain relationships; use of Mohr Circles, earthquakes, big faults, fault rocks; thrusts; folds; textures, kinematic indicators and strain analysis; Shear zones; extensional faulting; basins; strike-slip faults; joints; deformation mechanisms. Practical classes will look at the use of stereonets; theoretical maps, real maps and an introduction to stereograms. These sessions will be both quantitative and descriptive.

GEOS8215 Sedimentology (6 credits)

The course deals with sedimentary rocks and processes. Contents include some of the following: Physical properties of sediments; processes of weathering, transportation and deposition; sedimentary rocks, carbonates, siliclastic sediments, and sandstone petrography; diagenesis; sedimentary environments and facies; sedimentation and tectonics; geological record of environments through time.

GEOS8218 Meteorology (6 credits)

The course is a survey of the earth's atmospheric structure and its behaviour, instrumental observation, application of remote sensing to meteorological studies, weather elements and weather systems.

GEOS8219 Igneous and Metamorphic Petrology (6 credits)

The course provides a comprehensive treatment of the principles and techniques used in the study of igneous and metamorphic rocks and rock-forming processes. It covers petrogenesis, magmas and magmatic differentiation, igneous petrography, intrusive and extrusive rock suites, metamorphic processes & reactions and metamorphic facies and metamorphic petrography.

GEOS8220 Mineralogy and Geochemistry (6 credits)

The course provides students with an appreciation of mineralogical principles as a basis for understanding the petrography of igneous, sedimentary and metamorphic rocks. Its contents include the properties of minerals in hand specimen and thin section, the optical properties of minerals and the polarizing microscope and the characteristics of the major rock-forming minerals.

GEOS8221 Earth Resources (6 Credits)

To provide students with knowledge about the classification of mineral deposits and their basic features, the processes that lead to their formation and mining procedures. Its contents include the concepts in mineral deposits and the mining industry; exploration and mining methods, classification of mineral deposits, mineral deposit models, magmatic oxide and sulfide deposits, skarn deposits, porphyre deposits, volcanogenic massive sulfide deposits, coal, oil and gas, resource evaluation.

Pre-requisite course: Pass in GEOS7010 / GEOS7023

CIVL6079 Slope Engineering (6 credits)

Slope engineering in Hong Kong; geological models for slopes; slope stability analysis methods; landslip investigation; soil nailing; slope stabilization measures; surface drainage and protection; slope construction and monitoring; slope safety management and maintenance; natural terrain study.

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 examines the environment in the context of the market mechanism and policies for improving environmental performance. There is an emphasis on market failure and strategies for internalizing the external costs of environmental damage. A good deal of attention is paid to cost-benefit analysis and methodologies for the valuation of the environment. There is also a consideration of alternative policy instruments from an economic perspective. This course further examines means of managing resources in a way that is both economically and environmentally efficient.

ENVM7013 Sustainability, Society and Environmental Management (3 credits)

This course begins with the intellectual debates on the definitions, conceptions and different schools of thought of the notion of sustainable development. The course then moves on to exploring ways of analyzing sustainable development at the macro- and the micro- levels, ranging from governance issues, frameworks, policies to projects. A number of tools for sustainable development are also explained including community engagement, sustainability assessment, life cycle assessment, etc. Each year there will be a special focus on a thematic area such as sustainable energy, low carbon living, or planning for sustainable cities, to illustrate the challenges of implementing both local and global sustainability.

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 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.

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

ENVM8011 Environmental Auditing and Reporting (3 credits)

This course is dedicated to the construction of an integrated environmental management system (EMS). The course considers the design of the EMS, its implementation and issues of continuous improvement. Environmental auditing is dealt with in the context of the systems-based approach. This course examines audit methodology, measurement and quality assurance. The approach is extended to the auditing of supply chains (particularly in China). Emphasis is placed on practical approaches to

improving environmental performance over time. Methods and techniques of reporting on systems and auditing include both environmental reports as well as social and sustainable development reports.

ENVM8012 Environmental Health and 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 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.