

Department of Environmental Health

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The mission of the Department of Environmental Health is to sustain excellence in teaching, research and community service relevant to environmental issues and their impact on human health.

The department offers a graduate program leading to the MS degree in Environmental Sciences (Major: Environmental Health). For details regarding the MS degree, refer to the Admissions section of this catalogue and the section of the Interfaculty Graduate Environmental Sciences Program (pp. 31–42, 460).

In view of the increasing interest in development and its impact on the human environment, a variety of courses offered by this department are made available to students in other fields.

Graduates of the Environmental Health program may occupy senior or intermediate posts in:

- Government agencies such as the Ministry of Health, Ministry of the Environment, municipalities, or health centers
- The private sector, which offers a variety of job opportunities in industry, research institutions, universities, schools, and private business
- International agencies

ENHL 300 Introduction to Environmental Health 2.0; 2 cr.

A course that introduces students to the physical life support system and interactions with the socio-economic context. Emphasis is placed on assessing, preventing, and controlling environmental hazards affecting human health and ecological wellbeing. The role of local and global regulatory systems in impacting change and sustaining a healthy environment is highlighted. Enabling communities through this process of sustainable development is critically assessed.

ENHL 302 Principles of Environmental Assessment 2.0; 2 cr.

A course that provides a critical understanding of the nature and extent of ecosystem degradation resulting from developmental projects. This course introduces ecological and socio-economic methodologies for environmental impact-assessment of projects of public health importance.

ENHL 303 Pollution of Marine Environment 2.0; 2 cr.

A course that outlines the marine environment, focusing on sources and types of pollutants, environmental degradation, and its impact. Emphasis is placed on marine pollution management. International legislation for the conservation of the marine environment is introduced.

ENHL 304 Advanced Water and Wastewater Quality and Treatment 3.0; 3 cr.

A course that covers water source characteristics, factors influencing water quality and consequent public health impacts, regulatory protection of source waters, source water and wastewater control techniques, and public health concerns of wastewater reclamation and reuse.

ENHL 306 Management of Hazardous Wastes 3.0; 3 cr.

A course that covers sources and types of hazardous wastes, treatment and disposal technologies, hazardous waste management: components and priorities, risk assessment and risk management, and site remediation and public health concerns.

ENHL 307 Food Safety and Health 3.0; 3 cr.

The course will focus on the safety and management of processed food products. It will address the advantages and limitations of food processing techniques and in specific the application of food additives. Areas covered will relate mainly to food safety and quality control, health impacts, types and limitations of food processing methods, use of food additives, exposure estimation, toxicological implications, risks and benefits governing use and quality control measures and applications both at the national and international levels.

ENHL 308 Tutorial 1–3 cr.

A tutorial on special environmental health projects of interest to the students. A written report is required.

ENHL 310 Toxicology and Environmental Health Hazards 3.0; 3 cr.

A course that reviews the essentials of toxicology: dose response, toxicokinetics (absorption, distribution, metabolic conversion, elimination), and the molecular basis for toxic action, target organ toxicity, mutagenesis, teratogenesis, and carcinogenesis. Selected chemical and biological agents that adversely affect man and environmental quality are introduced as case studies.

ENHL 312 Occupational Health 2.3; 3 cr.

An introduction to the general principles relating to occupational health. Issues related to work, work environment and organization, and their impact on the physical and mental well-being of employees. Principles of recognizing, evaluating, and controlling work hazards with an emphasis on the multidisciplinary nature of the field of occupational health. Various disciplines involved in occupational health and used by occupational health professionals to safeguard the health of employees, including toxicology, safety, hygiene, epidemiology, ergonomics, occupational medicine, psychology, and sociology. This course is designed for students of multiple educational and training backgrounds and does not require prerequisite knowledge.

ENHL 320A Special Topics in Environmental Risk Analysis 3.0; 3 cr.

This course introduces the principles of environmental risk analysis, including: 1. risk characterization (dose-response relationships, threshold concept and no-observed-adverse health effect, margins of safety, allowable intakes); 2. risk management (exposure assessment methodology of different environmental agents and chemicals, and their potential hazard to health and the environment, extrapolation of toxicological data to humans and sensitive groups, analysis of the different risk prediction models [probit, logit, multi-stage models], and their applications and limitations); and 3. risk communication (health and safety guidelines of chemicals and margins of safety and standard setting needs and processes).

ENHL 314/ Environmental Management Systems 3.0; 3 cr.
ENSC 642

This course provides an overview of the most common international standards for environmental management systems, primarily the International Standards Organization (ISO) harmonized management systems, and its implications for different firms. It provides students with the skills to design, implement and assess such management systems. Though the first part of the course is mainly lecture based, student participation in the form of questions and discussion is always welcomed and encouraged. Critical thinking will be promoted throughout the course. Students will be expected to prepare a technical report on a firm or industry of their choice and to communicate project findings to their colleagues through verbal presentation. Emphasis is placed on solving environmental problems using an integrated approach in order to achieve an optimized management performance. *Alternate years.*

ENSC 699 Thesis 6cr.

ENSC 697 Project 3cr.

The project must be undertaken, in partial fulfillment of the requirements for the degree, upon the completion of at least 27 credits of core and elective courses.

A student who is unable to finish the project in one semester can register for one additional time.