

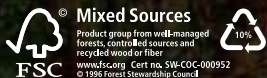
Environmental Applied Science and Management PhD / MAsC

Yeates SCHOOL OF GRADUATE STUDIES

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**RYERSON
UNIVERSITY**

Everyone Makes a Mark



Ryerson University, 350 Victoria Street
Toronto, ON M5B 2K3 Canada
September 2010 (70716)

**RYERSON
UNIVERSITY**

Everyone Makes a Mark

Environmental Applied Science and Management

PhD / MASc

PhD

The doctoral program has a focus in two fields: environmental science and policy, and environmental management and decision-making.

Program features include:

- A balance of applied science and environmental management subjects offering the opportunity to integrate knowledge from a variety of perspectives within a program that is multidisciplinary in its students, faculty and curriculum structure.
- The opportunity to conduct substantial and recognized research in a wide range of aspects within the fields of environmental applied science and management.
- Opportunities for interactions with the scholarly community and with applied research agencies in the environment industry and government.

MASc

This innovative program of advanced study in the environmental sciences and environmental management leads to a master of applied science degree.

Program features include:

- Multidisciplinary study in the applied environmental sciences and in the fields of environmental management and decision-making.
- The integration of science and management in environmental research.
- A Thesis option for academic study programs.
- A Professional Project option (research paper).
- A path to professional certification in environmental management.
- Full- and part-time study options.

Faculty Areas of Research Expertise

Course instruction and research supervision are provided by faculty members with expertise in specific disciplinary areas in environmental science and management. Faculty members in Environmental Applied Science and Management are drawn from 19 departments and schools across the university representing the following disciplines: business management; chemistry and biology; chemical, civil, industrial, aerospace and mechanical engineering; economics; geography; sociology; philosophy; history; economics; architectural science; occupational and public health; politics and public administration; hospitality and tourism management; and urban and regional planning. This multidisciplinary program structure gives students an opportunity to interact with a wide range of scholars.

Faculty members of this program are engaged in teaching, supervision and research in many areas including the following.

Applied Science

- air pollution
- ecosystem ecology
- ecotoxicology
- energy efficiency and conservation
- environmental biology
- environmental biotechnology
- environmental modelling
- environmental reclamation
- microbial ecology
- pollution transport
- solid waste management
- storm water management
- wastewater and water microbiology
- water and wastewater treatment and pollution control

Management

- climate change
- corporate sustainability
- environmental accounting
- environmental assessment
- environmental design
- environmental economics
- environmental justice
- environmental law and policy
- environmental management systems
- facility siting and environmental risk assessment
- food security
- GIS in environmental management
- planning and decision-making
- risk analysis
- sustainable tourism
- urban sustainability

Requirements & Curriculum

PhD

Doctoral candidates must complete a minimum of four courses: Research Methods in Environmental Applied Science and Management, Advanced Studies in Environmental Policy and Management, and one course in each of the two fields of study (Group A and Group B). At the recommendation of the candidate's supervising committee and with the approval of the program director, one or more additional courses may be required for students who need additional graduate preparation leading to the candidacy examination.

In addition, the doctoral program includes three milestones: a doctoral seminar course which requires attendance in each term until degree completion, a candidacy examination directed toward the candidate's area of research specialization and the dissertation.

MASc

This program offers courses in environmental applied science and environmental management. Students may complete the MASc degree requirements by pursuing the Thesis option or the Professional Project option. All students are required to complete three core courses: one in environmental policy or law, a second in environmental applied science, and a capstone seminar in environmental applied science and management.

In addition to the three core courses, Thesis option students must complete a minimum of one course in each the Environmental Applied Science elective group (Group A) and the Environmental Management elective group (Group B); and two courses from Group A, Group B and/or Group C; and a master's thesis.

In addition to the three core courses, Professional Project option students must complete a minimum of two courses in each the Environmental Applied Science elective group (Group A) and the Environmental Management elective group (Group B); and three additional courses selected from Group A, Group B and/or Group C; and a project paper.

PhD Courses

Core and Required Courses

- ES9001 Advanced Studies in Environmental Policy and Management
- ES9002 Research Methods in Environmental Applied Science and Management
- Doctoral Research Seminar (Milestone)
- Candidacy Examination (Milestone)
- Dissertation (Milestone)

Elective Courses

Students select one course from each of Group A and Group B listed under MAsC Courses.

MAsC Courses

Core and Required Courses

- ES8901 Chemical and Biological Pathways
- ES8930 Seminar in Environmental Applied Science and Management

Students must also take one of the following two courses:

- ES8920 Environmental Policy and Management
- ES8921 Environmental Law

Elective Courses

- Thesis option: four program electives with at least one course from each of Group A and Group B.
- Professional Project option: seven program electives with at least two courses from each of Group A and Group B.

Group A – Elective Courses in Environmental Applied Science*

- ES8902 Water Pollution Control Processes
- ES8903 Pollution Prevention
- ES8904 Waste Management
- ES8905 Air Pollution Science and Engineering
- ES8906 Water Pollution Transport
- ES8907 Wastewater Engineering
- ES8908 Soil Remediation
- ES8909 Environmental Biotechnology
- ES8910 Energy and the Environment
- ES8911 Ecotoxicology
- ES8912 Applied Ecology

Group B – Elective Courses in Environmental Management*

- ES8801 Facility Siting and Environmental Risk Assessment
- ES8920 Environmental Policy and Management
- ES8921 Environmental Law
- ES8922 GIS for Environmental Management
- ES8923 Environmental Assessment
- ES8924 Environmental Management Systems
- ES8925 Decision-Making and Strategic Planning in Management
- ES8926 Environmental Economics
- ES8927 Risk Assessment in Environmental Management

Group C – Other Courses*

- ES8950 Independent Study
- ES8951 International Environmental Field Research

Current PhD Research Areas

- food security
- antimicrobial metal coatings
- sustainable supply chain management
- urban forestry
- water and energy consumption in multi-use buildings
- water and wastewater treatment
- coastal habitat protection
- residential energy use
- climate change adaptation

Selected Master's Project Paper Titles

- Evaluating Municipal Wastewater Treatment Plant Impacts on Surface Water Quality Using the Canadian Water Quality Index: A Case Study of the Nith River, Ontario
- Magnetic Coagulation for Oily Waste Treatment
- Detection of Homoserine Lactones (Quorum Sensing Molecules) in Wastewater Microbial Floc
- Residential Energy Efficiency and Home Construction and Renovation: How much progress?
- Urban Growth Management in Two North American Cities
- ISO 14001 and Environmental Performance in an Automotive Manufacturing Plant
- The Use of Geographic Information Systems in the Development of a User-Pay Stormwater Utility in the Mimico Creek Watershed
- Photolytic and Photocatalytic Treatment of Linear Alkylbenzene Sulfonate in Water
- Effects of pH and Temperature on the Genotoxicity of Halogenated Disinfection By-products in Chlorinated Water

Selected Master's Thesis Topics

- A Land-based Oil Spill Management Planning Framework for the Petroleum Industry
- The Use of Geographic Information Systems in the Development of a User-pay Stormwater Utility in the Mimico Creek Watershed
- The Impacts of Climate Change on the Availability of Granular Resources in the Inuvialuit Settlement Region, Northwest Territories
- Integration and Persistence of *Escherichia coli* 0157: H7 86-24 in a Naturally Occurring Water Well Biofilm
- The Trophic Transfer of Pb and Cd from *Navicula pelliculosa* (Bacillariophyta) to *Hyalella azteca* (Amphipoda)
- Principles and Techniques towards Successful Development of Enzyme-linked Immunosorbent Assay (ELISA) for Dioxin Analysis
- Isolation, Separation and Identification of the Extracellular Polymeric Substance (EPS) Protein Fraction from the Activated Sludge Floc
- Examining the Contribution of Toronto's Press in Maintaining an Environmentally Detrimental Social Paradigm
- Determination of Polychlorinated Biphenyls, Organochlorine Pesticides and Chlorobenzenes in Sludge and Sediment Samples by GCxGC-ECD
- An Ecological Assessment of Invasive Plant Species in a Constructed Stormwater Wetland in Markham, Ontario, Canada
- A Critical Review of Health Impact Assessments in Ontario's Nuclear Industry
- Assessing the Feasibility of a Sustainable Winemaking Eco-label Initiative in Ontario
- Assessing Behavioural and Physiological Responses of Three Aquatic Invertebrates to Atrazine and Tributyl Tin in a Multi-species, Early-warning Biomonitoring Technology
- An Air Dispersion Model for the City of Toronto, Ontario, Canada

Admission

PhD

Admission requirements for the PhD program include the following:

- A master's degree in an environmentally related discipline.
- A minimum B+ average in the master's program.

Note: Master's degree holders in other academic disciplines will be considered on an individual basis.

MASc

Admission requirements for the master's program include the following:

- An honours degree (or an equivalent degree from a four-year program) in an environmentally related discipline such as chemical, civil, industrial, environmental or mechanical engineering; natural or physical sciences; public and occupational health; urban and regional planning; environmental studies; or geography.
- A minimum B average in the last two years of undergraduate study.
- Successful completion of one mathematics and one statistics course at the undergraduate level.

Note: Other four-year degree holders with good academic standing will be considered for admission on an individual basis.

English Language Proficiency Requirement

Applicants whose instruction during their undergraduate studies was in a language other than English are required to submit a test of English language proficiency. Applicants may demonstrate facility in English using one of the following methods:

- Test of English as a Foreign Language (TOEFL)
- International English Language Testing System (IELTS)
- Michigan English Language Assessment Battery (MELAB)

For more information, visit www.ryerson.ca/graduate/admissions.

Additional Information

For detailed program information, visit www.ryerson.ca/ensciman.

Program Contact Information

Telephone: 416-979-5000, ext. 7777

Email: ensciman@ryerson.ca

Financial Support

Ryerson University provides financial support in the form of scholarships, awards and assistantships for as many full-time students as possible. Financial support is offered on a competitive basis, and the number of scholarships, awards and assistantships in any given year will vary. For more information on available funding, visit www.ryerson.ca/graduate/funding.

How to Apply

Online application instructions are available at www.ryerson.ca/graduate/admissions.

Yeates School of Graduate Studies

Admissions

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