DOCTORATE ENVIRONMENTAL SUSTAINABILITY

Overview

Summary

The Institute of the Environment offers an MSc program in Environmental Sustainability, a collaborative master program in Environmental Sustainability, and a PhD program in Environmental Sustainability.

The PhD in Environmental Sustainability is an interdisciplinary degree that focuses on graduating professionals and academics specializing in the areas of environmental science, economics, law, and policy. The program is full time and offered in English and French. Under the regulations of the University of Ottawa, exams, assignments, or the thesis may be written in French or English. Students may also be supervised in French or English.

The objective of the PhD in Environmental Sustainability is to train leaders and professionals with the skills and capacities needed to be effective in developing, analyzing, and empirically evaluating public policies and institutions designed to address the multiple challenges associated with the transition to sustainability. Students will be trained in considering environmental problems from the perspective of various disciplines of inquiry (with an emphasis on science, law, economics and policy) all of which are critical to the development, implementation and evaluation of solutions to environmental problems.

The program aims to develop a strong comprehension of the complexity of environmental sustainability problems, a critical awareness of the broad range of contributing factors, and the methodological and communication skills required to develop and communicate candidate solutions.

The program is governed by the "Policies and Regulations" of the University of Ottawa, which are posted on the Administration and Governance
website.

Learn more about this program (https://www.uottawa.ca/faculty-social-sciences/public-international-affairs/graduate/environmental-sustainability-programs/)

Admission Requirements

For the most accurate and up to date information on application deadlines, language tests and other admission requirements, please visit the specific requirements (https://www.uottawa.ca/graduate-studies/programs-admission/apply/specific-requirements/) webpage.

To be eligible, candidates must:

- Hold a Master's degree with thesis or research paper in a relevant discipline. Examples of relevant disciplines include environmental studies broadly construed, geography, economics, environmental science, political science, international development, environmental engineering, and law;
- Have obtained a minimum average of 75% (B+) calculated according to university guidelines;
- Provide two confidential letters of recommendation;
- Provide a CV and a statement of interest outlining career goals;
- Identify at least one professor who is willing and available to act as thesis supervisor; and
- Provide an outline of the proposed research project.

Language Requirements

Applicants must be able to understand and fluently speak the language of instruction (French or English) in the program to which they are applying. Proof of linguistic proficiency may be required.

Applicants whose first language is neither French nor English must provide proof of proficiency in the language of instruction.

Note: Candidates are responsible for any fees associated with the language tests.

Fast-track from Master's to PhD

Students enrolled in the MSc program in Environmental Sustainability or other similar programs at the University of Ottawa have the opportunity to go directly to the PhD program without having to write the thesis provided the following conditions are met:

- Students transferring from the MSc in Environmental Sustainability:
  - have successfully completed all required course work for the first two terms of MSc program (minimum 16.5 credits) with an average of at least A;
  - have shown satisfactory progress in their research or have a demonstrated ability to do independent research
  - provide a letter of recommendation from the proposed doctoral thesis supervisor supported by members of the Thesis Advisory Committee (see below).
- Students transferring from other uOttawa graduate programs:
  - have successfully completed the mandatory coursework of the two first terms of their masters program and have successfully completed courses in at least two of the following disciplines: Law, Science, Policy or Economics with an average of at least A. The committee may require an addition of one or two electives if these conditions are not met.
  - have shown satisfactory progress in their research or have a demonstrated ability to do independent research
  - have a letter of recommendation from the proposed doctoral thesis supervisor that is supported and approved by members of the Thesis Advisory Committee to be an area relevant to Environmental Sustainability.

The student must make a written request to transfer to the PhD program no later than the end of the third term of enrollment in the master and must enroll in the doctoral program in the fourth term. Once the transition is made, all the requirements of the doctoral program must be met.

Program Requirements

Doctorate

The Institute may require students to take additional courses depending on their backgrounds.

Students must meet the following requirements:

Compulsory Courses:		
EVD 8100	Theory and Practice in Environmental Sustainability	3 Units
EVD 8901	Research Design and Methods for Environmental Sustainability [1]	3 Units
3 elective course units at the graduate level		3 Units
Qualifying Examination		
EVD 9997	Qualifying Examination	
Thesis Proposal		
EVD 9998	PhD Thesis Proposal	
Thesis		
THD 9999	Doctoral Thesis	

Note(s):

[1] EVD8901 has, as a prerequisite, an active knowledge of English and a passive knowledge of French. EVD8901 can be substituted by a detailed research methods course, related the students' research and, approved by the thesis advisory committee, and program director.

The student must complete both the written and oral component of the Qualifying Examination (QE). The QE Evaluation Committee, using the research proposal summary as a guide, will identify two fields of knowledge related to the student's proposed research. The written and oral component of the Qualifying Exam is usually completed no later than the end of the 5th term. Failure to meet this deadline results in a first failure of the Qualifying Exam and requires that the student register for the Qualifying Exam in the following term. Students will have one last opportunity to successfully complete both the written and oral components of the Qualifying Exam. In the event that the student should fail either of the two components, the Qualifying Exam would be considered failed for the second time; and the student would be withdrawn from the program.

Thesis Advisory Committee

The student's Advisory Committee normally includes (i) faculty members from at least two substantively different disciplines (such as, but not limited to, economics, science, law, policy, engineering, health sciences, geography, and management), and (ii) a non-academic stakeholder who may provide practical mentorship and encourage a link between research and practice, where appropriate.

Minimum Standards

The passing grade for all courses is B. Students whose progress is unsatisfactory, or who do not meet the requirements of their program, will be withdrawn from the program. Reasons for withdrawal include a) two failures in the program, whether of courses, Qualifying Exam, thesis proposal; b) unsatisfactory performance of research or field work; or c) two unsatisfactory progress reports.

Research
Research Fields & Facilities

Located in the heart of Canada's capital, a few steps away from Parliament Hill, the University of Ottawa is among Canada's top 10 research universities.

Professors affiliated with the Institute of the Environment conduct research on a variety of sustainability and environmental issues, including market instruments for environmental protection, community-based resource management, climate policy, the control of toxics as well as biodiversity loss and species at risk.

Our students can also collaborate with the Smart Prosperity Institute (SPI), a national research network and policy think tank based at the University of Ottawa's Institute of the Environment. SPI deliver world-class research and work with public and private partners - all to advance practical policies and market solutions for a stronger, cleaner economy.

With cutting-edge research, our graduate students, researchers and educators strongly influence national and international priorities

Courses

EVD 5100 Seminar in Environmental Sustainability (3 units)

Overview of environmental sustainability issues using climate change as an example. Application of integrated analyses based on concepts in science, law, economics and policy to devise policy solutions. The debate about the scientific evidence for climate change and international efforts to negotiate an agreement. The economic, political and social dimensions of climate change and measures taken both nationally and internationally to mitigate its effects.
Course Component: Seminar

EVD 5101 Economics of Environmental Law and Policy (3 units)

Environmental issues and the environmental policy framework from an economics perspective. Review of the underlying theory in relation to economic concepts such as efficiency, market failure, externalities, cost-benefit, and valuation. Overview of macroeconomic topics such as economic growth and green accounting, and their relation to law and policy. Application of these theoretical concepts to various environmental challenges, from climate change and energy regulation to managing ecosystem services and conserving biodiversity. Policy options for managing environmental challenges, from traditional command and control regulation to economic instruments such as environmental taxation, and cap and trade programs. Evaluation of the environmental, social, and economic effectiveness of the various policy options, and integration of economic theory into environmental policy development.
Course Component: Lecture

EVD 5109 Applied Environmental Sustainability (3 units)

Uses an environmental sustainability case study, such as climate change, to learn how to synthesize information about a problem from multiple disciplinary perspectives, to critically evaluate such information using rigorous methodological approaches, and to design and evaluate policy or regulatory solutions.
Course Component: Seminar

EVD 5111 Capstone Seminar in Environmental Sustainability (3 units)

Involves partnering with organization(s) working on a sustainability issue. Students work in interdisciplinary teams to identify the scientific, economic, legal and social dimensions of a particular environmental problem, evaluate a set of candidate solutions, and recommend an approach.
Course Component: Seminar

EVD 5113 Foundations of Environmental Policy (3 units)

Study of the key political and administrative factors affecting the formulation and implementation of environmental policy, including democratic institutions, various methods for citizen and stakeholder engagement and their influence on the decision-making process in government, public opinion and the framing of policy problems, values and the use of scientific evidence in policy-making, lobbying and the role of interest representation, federalism and multi-level environmental governance, and the international governance of environmental problems. Case studies will place Canada in a comparative context and explore the importance of political factors across areas of environmental policy.
Course Component: Seminar

EVD 5114 Professional Skills for Environmental Sustainability (1.5 units)

Oral and written communications skills, including presenting to parliamentary committees, preparing memos to cabinet, writing editorials, doing media interviews, and producing interdisciplinary public policy reports. Project and process management skills, including multi-stakeholder processes.
Course Component: Seminar

EVD 5121 Foundations of Environmental Science (3 units)

Provides students with a thematic understanding of the current state of environmental science. Major themes include: the set of environmental issues that are currently of major concern in Canada and abroad; the range of scientific approaches currently employed to understand and predict the effects of human activities on ecosystems; the nature of environmental science evidence; and how environmental sustainability is characterized from the perspective of environmental science.
Course Component: Seminar

EVD 5122 Foundations of Environmental Economics (3 units)

Key elements of economics including formal models and their underlying assumptions as they relate to the development of sustainability policy. Covers concepts such as public goods, market failure, non-market valuation, incentives, welfare economics, regulation, the equity-efficiency trade-off and market-based instruments. The course explains how fundamental economic concepts, particularly their advantages and limitations, are used to analyze issues at the interface of the economy and the environment. Examines renewable (e.g., fisheries, forests) and non-renewable (e.g., oil, gas, minerals) resource management and other topics (e.g., climate change, ozone depletion, cap and trade) in applied environmental economics. Explores the institutions and trade-offs that individuals and governments face in the context of sustainability policy.
Course Component: Seminar

EVD 5123 Evidence Synthesis and Evaluation (3 units)

Reviews different understandings of what constitutes research, both as it pertains to the production of evidence and to the evaluation of existing evidence relating to policy, to regulatory and statutory interventions and to identifying evidence gaps. Students learn research methodologies to design research so as to maximize its evidentiary value (given existing constraints); they will also learn to synthesize and assess the evidentiary value of existing research.
Course Component: Seminar

EVD 5124 Foundations of Environmental Law (3 units)

Foundations of environmental law, including theory of sustainability, constitutional division of powers, approaches to regulation of environmental issues, including examples of legal frameworks for different environmental problems, and access to justice.
Course Component: Seminar

EVD 5500 Séminaire en durabilité de l'environnement (3 crédits)

Survol des enjeux en durabilité de l'environnement en se servant du changement climatique comme exemple. Application d'analyses intégrant des concepts en sciences, en droit, en science économique et en études politiques. Le débat au sujet de la preuve scientifique du changement climatique et les efforts sur le plan international pour négocier une entente. Les dimensions économiques, sociales et politiques du changement climatique et les mesures à ce jour pour atténuer ses effets, au niveau international et au niveau national.
Volet : Séminaire

EVD 5501 Approche économique et le droit de l'environnement (3 crédits)

Les enjeux environnementaux et le système de réglementation du point de vue de la science économique. Étude de la théorie qui sous-tend certains concepts économiques, tels l'efficacité, la défaillance du marché, les externalités et la valuation. Survol des concepts macroéconomiques, tels la croissance économique et la comptabilité environnementale. Application de ces concepts théoriques aux défis environnementaux tels le changement climatique, la réglementation de l'énergie, la gestion des services écologiques et la conservation de la biodiversité. Les divers outils de réglementation pour la gestion des défis liés à l'environnement, incluant la réglementation traditionnelle de type « commande et contrôle », les moyens économiques tels que la taxation environnementale et les systèmes de droits d'échanges. Évaluation de l'efficacité environnementale, sociale et économique des diverses approches, et intégration de la théorie économique dans le développement de la réglementation environnementale.
Volet : Cours magistral

EVD 5509 Développement durable appliqué (3 crédits)

Étude de cas en développement durable (changements climatiques, par exemple) pour apprendre à synthétiser l'information sur un problème à partir de plusieurs perspectives disciplinaires, pour évaluer l'information selon un schéma critique, en faisant usage de méthodes rigoureuses, et pour concevoir et évaluer des politiques ou règlements.
Volet : Séminaire

EVD 5511 Séminaire d'intégration sur le développement durable (3 crédits)

Partenariat avec des organisations travaillant en développement durable. Les étudiants forment des équipes multidisciplinaires pour étudier les dimensions scientifiques, économiques, juridiques et sociales d'un problème environnemental particulier, pour évaluer un éventail de solutions possibles et pour recommander les mesures à prendre.
Volet : Cours magistral

EVD 5513 Rudiments des politiques environnementales (3 crédits)

Étude des principaux facteurs politiques et administratifs influençant la formulation et la mise en oeuvre des politiques environnementales, y compris les institutions démocratiques, les méthodes de participation des citoyens et des parties prenantes et leur influence sur les processus décisionnels des gouvernements, l'opinion publique et la définition des problèmes, le rôle des valeurs et de la science dans la formulation des politiques, le lobbying et la représentation des intérêts, le fédéralisme et la gouvernance multi-niveaux des enjeux environnementaux, et la politique internationale de l'environnement. Des études de cas situeront le Canada dans une perspective comparée et exploreront l'importance de ces facteurs politiques dans divers secteurs des politiques environnementales.
Volet : Cours magistral

EVD 5514 Compétences professionnelles pour le développement durable (1.5 crédits)

Compétences orales et écrites en communication, notamment les présentations aux comités parlementaires, la préparation de mémoires au cabinet, la rédaction d'éditoriaux, les entrevues médiatiques et la production de rapports multidisciplinaires sur les politiques publiques. Gestion de projet et de processus faisant intervenir de nombreux joueurs.
Volet : Cours magistral

EVD 5521 Rudiments des sciences de l'environnement (3 crédits)

Donne aux étudiants une compréhension thématique de l'état actuel des sciences environnementales. Principaux thèmes : éventail des enjeux environnementaux d'importance au Canada et à l'étranger; les démarches scientifiques déployées pour comprendre et prédire les conséquences des activités humaines pour les écosystèmes; la nature des preuves apportées par les sciences de l'environnement; la perspective des sciences de l'environnement sur le développement durable.
Volet : Cours magistral

EVD 5522 Rudiments de l'économie de l'environnement (3 crédits)

Principaux éléments de l'économie, y compris les modèles économiques officiels et les présuppositions afférentes à l'élaboration de politiques de développement durable. Étude de divers concepts : patrimoine commun; échec des marchés; non évaluation des valeurs courantes; mesures incitatives; économie du bien-être; réglementation; équilibre entre équité et efficience; instruments reposant sur les mécanismes de marché. On examinera plus en détail les concepts fondamentaux de l'économie et leurs avantages et inconvénients pour l'examen des enjeux au carrefour de l'économie et de l'environnement. Étude de la gestion des ressources renouvelables (pêches, forêts, etc.) et non renouvelables (pétrole, gaz, minerai, etc.) et d'autres sujets en économie de l'environnement appliquée (ex. changements climatiques, destruction de la couche d'ozone, programmes de plafonnement et d'échange). Étude des institutions et programmes de compensation auxquels sont confrontés les individus et les gouvernements dans le contexte des politiques de développement durable.
Volet : Cours magistral

EVD 5523 Synthèse et évaluation de données probantes (3 crédits)

La recherche vise soit à produire des données probantes, soit à évaluer les données probantes existantes en ce qu'elles ont trait à des interventions politiques, réglementaires et étatiques, y compris les lacunes en la matière. Ainsi, les étudiants acquièrent les compétences nécessaires qui leur permettent de concevoir un programme de recherche de façon à en optimiser la valeur probante (en fonction des contraintes existantes) et de synthétiser les résultats de recherches existantes et d'évaluer leur valeur probante.
Volet : Cours magistral

EVD 5524 Rudiments du droit de l'environnement (3 crédits)

Rudiments du droit de l'environnement, y compris la théorie du développement durable, la division constitutionnelle des pouvoirs, les démarches visant à réglementer les questions environnementales, avec exemples de cadres légaux pour différents problèmes environnementaux et accès à la justice.
Volet : Séminaire

EVD 6001 Stage coop I / Co-Op Work Term I (6 crédits / 6 units)

Expérience en milieu de travail. Évalué P (réussite) / F (échec) par un professeur du programme selon les résultats du rapport écrit et l'évaluation du superviseur de stage. Préalable : permission du responsable des études supérieures. / Experience in a workplace setting. Evaluated P (Pass) / F (Fail) by a professor in the program based on the written report and the evaluation of the internship supervisor.
Volet / Course Component: Stage / Work Term

EVD 6002 Stage coop II / Co-Op Work II (6 crédits / 6 units)

Expérience en milieu de travail. Évalué P (réussite) / F (échec) par un professeur du programme selon les résultats du rapport écrit et l'évaluation du superviseur de stage. Préalable : permission du responsable des études supérieures. / Experience in a workplace setting. Evaluated P (Pass) / F (Fail) by a professor in the program based on the written report and the evaluation of the internship supervisor.
Volet / Course Component: Stage / Work Term

EVD 6112 Selected Topics in Environmental Sustainability (3 units)

In-depth examination of a question or topic linked to new trends or research areas in environmental sustainability.
Course Component: Lecture

EVD 6512 Thèmes choisis en durabilité de l'environnement (3 crédits)

Analyse approfondie d'une problématique ou d'une question liée aux nouvelles tendances en recherche ou aux nouveaux thèmes de recherche en durabilité de l'environnement.
Volet : Cours magistral

EVD 6912 Thèmes choisis en durabilité de l'environnement / Selected Topics in Environmental Sustainability (3 crédits / 3 units)

Analyse approfondie d'une problématique ou d'une question liée aux nouvelles tendances en recherche ou aux nouveaux thèmes de recherche en durabilité de l'environnement. / In-depth examination of a question or topic linked to new trends or research areas in environmental sustainability.
Volet / Course Component: Cours magistral / Lecture
Préalable : connaissance passive de l'anglais. / Prerequisite: passive knowledge of French

EVD 6932 Lectures dirigées en durabilité de l'environnement / Directed Readings in Environmental Sustainability (3 crédits / 3 units)

Cours individuel ayant pour objectif d'approfondir les connaissances de l'étudiant dans un domaine particulier ou de lui permettre de se familiariser avec un nouveau domaine. Le sujet est déterminé et développé en consultation avec le professeur responsable et en conformité avec les directives de l'Institut de l'environnement. Le travail remis dans ce cours doit être différent de ce qui a pu être soumis dans d'autres cours, y compris le projet de recherche, la thèse ou le mémoire. On permet un maximum d'un cours de lectures dirigées par étudiant et la permission n'est accordée que dans des circonstances exceptionnelles. / Individual course aimed at deepening a student's knowledge of a particular area or at gaining knowledge of a new area. The topic is selected and developed in consultation with the supervising professor in accordance with institute guidelines. The work submitted for this course must be different from that submitted for other courses, including the research proposal, the thesis or the research paper. Maximum of one directed readings course per student, and permission is granted only under exceptional circumstances.
Volet / Course Component: Recherche / Research
Préalable: Connaissance passive de l'anglais. / Prerequisite: Passive knowledge of French.

EVD 7997 Projet de thèse / Thesis Proposal

Volet / Course Component: Recherche / Research

EVD 8100 Theory and Practice in Environmental Sustainability (3 units)

Characterization of environmental sustainability from the perspective of economics, political science, environmental science, and law. Demonstration of how often-divergent perspectives and values of stakeholders from various backgrounds frame both sustainability problems themselves, and acceptable solutions.
Course Component: Seminar

EVD 8500 Théorie et pratique en durabilité environnementale (3 crédits)

La caractérisation de la durabilité environnementale du point de vue de la science économique, de la science politique, de la science environnementale et du droit. Démonstration de comment les perspectives et les valeurs divergentes des parties prenantes de divers horizons définissent à la fois les problèmes et les solutions acceptables en durabilité.
Volet : Séminaire

EVD 8901 Conception de recherche et méthodologie pour la recherche en durabilité de l'environnement / Research Design and Methods for Environmental Sustainability (3 crédits / 3 units)

Vue d'ensemble des méthodes de recherche employées dans les quatre domaines principaux de la durabilité (science de l'environnement, droit, politique et économie). À l'aide d'études de cas, examen des types d'inférences causales que l'on peut ou ne peut pas tirer d'un plan de recherche, les menaces à la déduction valable et les plans de recherche pouvant atténuer ces menaces. Accent particulier sera mis sur la relation entre les conceptions de recherche et la force de l'inférence causale. / Overview of research methods employed in the four main subject areas underlying sustainability (environmental science, law, policy and economics). Through case studies, examination of the kinds of causal inferences one can and cannot draw from a research design, threats to valid inference, and research designs that can mitigate those threats. Particular emphasis placed on the relationship between research designs and strength of causal inference.
Volet / Course Component: Séminaire / Seminar

EVD 9997 Examen d'entrée / Qualifying Examination

Examen d'entrée / Qualifying Examination
Volet / Course Component: Recherche / Research

EVD 9998 Projet de thèse / PhD Thesis Proposal

Projet de thèse / PhD Thesis Proposal
Volet / Course Component: Recherche / Research