

La maîtrise en sciences interdisciplinaire en durabilité de l'environnement

Exemple de cours optionnels 2021-2022



Cours au choix – Durabilité de l’environnement

Vous trouverez ci-dessous une liste de cours au choix approuvés par l’Institut de l’environnement pour le programme collaboratif en durabilité de l’environnement et pour la maîtrise en durabilité de l’environnement. REMARQUE : L’inscription à ces cours nécessite habituellement l’approbation de votre ministère ainsi que l’approbation du formateur ou de la formatrice. Ces approbations sont nécessaires pour s’assurer que les places sont disponibles et que vous avez l’expérience requise pour réussir le cours.

De plus, si vous êtes au courant de cours supplémentaires qui se rapportent à la durabilité environnementale et qui pourraient être mieux adaptés à vos objectifs académiques, n’hésitez pas à nous demander s’il pourrait être approuvé comme un cours facultatif. Nous vous suggérons de soumettre une copie du programme de cours avec votre demande. Le directeur du programme sera heureux de l’examiner.

Automne 2021

ECO 6151A - Economics of the Environment (3 units)

The concept of scarcity rents in static and dynamic settings. Basic property regimes: open access, exclusive access and common property. Policy instruments. The importance of transaction costs. General-equilibrium and political-economic aspects of property regimes. Conflict. Elements of dynamic optimization. Renewable and non-renewable resources. This course is equivalent to ECON 5803 at Carleton University.

Hiver 2022

DVM 6102A - Livelihoods, Resources and Sustainability (3 units)

or DVM 6502A Modes de vie, ressources et durabilité (3 crédits)

Interaction between society and nature. Consideration of how power shapes the use of resources such as land, water, food, or energy, and on how livelihoods adapt to environmental change in various rural and urban contexts. Theoretical lenses include commons theory, social ecological resilience, political ecology, and political economy.

Interaction entre la société et la nature. Examen de la façon dont le pouvoir influence l’utilisation des ressources comme la terre, l’eau, l’alimentation ou l’énergie, et de la façon dont les moyens de subsistance s’adaptent aux changements environnementaux dans divers contextes ruraux et urbains. Les lentilles théoriques comprennent la théorie des communs, la résilience écologique sociale, l’écologie politique et l’économie politique.

ECO 6134 - Economics of Natural Resources (3 units)

The concept of scarcity rents in static and dynamic settings. Basic property regimes: open access, exclusive access and common property. Policy instruments. The importance of transaction costs. General-equilibrium and political-economic aspects of property regimes. Conflict. Elements of dynamic optimization. Renewable and non-renewable resources. This course is equivalent to ECON 5803 at Carleton University.

GEO 5143 - A00 Environmental Isotopes and Groundwater Geochemistry (3 units)

Geochemistry and environmental isotopes in studies of groundwater dynamics, age and contaminant hydrogeology. Environments from shallow groundwater and surface water to deep crustal brines are examined. Low temperature aqueous geochemistry and mineral solubility with emphasis on the carbonate system. This course is equivalent to EARTH 5403 at Carleton University.

ISP 5101 - Decision at the Interface of Science and Policy (3 units)

This course explores a number of critical issues in the design and implementation of science (or, more generally, evidence)-based policy. Topics will include: the nature of scientific evidence; who has standing in the provisioning of scientific evidence; the science and non-science of risk assessment; ethical dimensions of policy design and implementation; the role of science in policy design and implementation; the policy making process; and science policy performance evaluation.

Liste d'attente – Syllabus requis

Si l'un des cours ci-dessous vous intéresse, veuillez contacter le professeur pour obtenir :

- a) le programme de cours;
- b) l'autorisation du professeur de suivre le cours.

Envoyez les deux éléments ci-dessus à envirograd@uottawa.ca avec une justification expliquant comment le cours fera progresser votre recherche. Le directeur de programme examinera votre demande et vous informera si vous pouvez suivre le cours pour satisfaire aux exigences de votre programme.

Automne 2021

EVG 5800 Seminar for Master's Candidates in Environmental Engineering (1 unit)

This course is equivalent to ENVE 5800 at Carleton University

Topic: Research

*Note that this course is 1 unit. Students must take one 3 units course, or three 1 unit courses to fulfill their program requirements.

EVG 5801 Seminar for Doctoral Candidates in Environmental Engineering (3 units)

This course is equivalent to ENVE 7800 at Carleton University

Topic : Research

EVG 6300F Special Topics in Environmental Engineering (3 units)

Topic: Water Treatment in Northern Communities

EVG 7002 Topics in Environmental Engineering (3 units)

This course is equivalent to ENVE 5702 at Carleton University.

Topic: Air Pollut & Emissions Control

EVG 7003 Topics in Environmental Engineering (3 units)

This course is equivalent to ENVE 5703 at Carleton University.

Topic: Contaminant Hydrogeology

EVG 7004 Topics in Environmental Engineering (3 units)

This course is equivalent to ENVE 5704 at Carleton University.

Topic: Lighting / Daylighting

EVG 7005IA Topics in Environmental Engineering (3 units)

This course is equivalent to ENVE 5705 at Carleton University.

Topic: Resili.infras.&sustain urb.fut

EVG 7005IB Topics in Environmental Engineering (3 units)

This course is equivalent to ENVE 5705 at Carleton University.

Topic: Enviro imp. of energy res.deve

EVD 5113A 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.

*Required course for the Master of Science in Environmental Sustainability. Possible optional course for the Specialization in Environmental Sustainability.

EVD 5114A 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.

*Required course for the Master of Science in Environmental Sustainability. Possible optional course for the Specialization in Environmental Sustainability.

*Note that this course is 1.5 units. Students must take one 3 units course, or two 1.5 units courses to fulfill their program requirements.

EVD 5121A 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.

*Required course for the Master of Science in Environmental Sustainability. Possible optional course for the Specialization in Environmental Sustainability.

EVD 5122A 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.

*Required course for the Master of Science in Environmental Sustainability. Possible optional course for the Specialization in Environmental Sustainability.

EVD 5124A 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.

*Required course for the Master of Science in Environmental Sustainability. Possible optional course for the Specialization in Environmental Sustainability.

EVD 8100A 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.

*Required course for the Master of Science in Environmental Sustainability. Possible optional course for the Specialization in Environmental Sustainability.

Hiver 2022

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.

*Optional course for the Master of Science in Environmental Sustainability. Required course for the Specialization in Environmental Sustainability.

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.

*Required course for the Master of Science in Environmental Sustainability (Research Paper option). Possible optional course for the Master of Science in Environmental Sustainability (Thesis option) and the Specialization in Environmental Sustainability.

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 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

*Required course for the Master of Science in Environmental Sustainability (Research Paper option). Possible optional course for the Master of Science in Environmental Sustainability (Thesis option) and the Specialization in Environmental Sustainability.

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

*Required course for the Master of Science in Environmental Sustainability (Research Paper option). Possible optional course for the Master of Science in Environmental Sustainability (Thesis option) and the Specialization in Environmental Sustainability.

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.

*Required course for the PhD in Environmental Sustainability. Possible optional course for the Master of Science in Environmental Sustainability and the Specialization in Environmental Sustainability.

ECO 6134 Topics in Environmental and Resource Economics (3 units)

Topics may include international dimensions of environmental regulation, including treaties, competitiveness, and the effects of trade liberalization; development issues, including fiscal sustainability, Dutch disease, the resource curse, and population growth; resource topics, including optimal taxation, green national accounts, sustainability theory, and scarcity of extractive resources. This course is equivalent to ECON 5805 at Carleton University.

EDU 6106 Science, Technology, Society and Environment (3 units)

(Teaching, Learning and Evaluation) Critical examination of the social impact of science and technology and their educational implications. Study of the roles of ecological and scientific literacies.

EVG 5800S Seminar for Master's Candidates in Environmental Engineering (1 unit)

This course is equivalent to ENVE 5800 at Carleton University.

Topic : Research

EVG 5801S Seminar for Doctoral Candidates in Environmental Engineering (3 units)

This course is equivalent to ENVE 7800 at Carleton University

Topic: Research

EVG 7001IW Topics in Environmental Engineering (3 units)

This course is equivalent to ENVE 5701 at Carleton University.

Topic: Research methods for building energy

EVG 7002IW Topics in Environmental Engineering (3 units)

This course is equivalent to ENVE 5702 at Carleton University

Topic: Energy & resource recovery from waste

CHM 5606I Environmental Chemistry and Toxicology (1.5 units)

Overview of environmental chemistry and toxicology principles including chemical sources, fate, and effects in the environment. Examining organic reactions occurring in abiotic environments and biological systems, and study aspects of toxicant disposition and biotransformation. Emphasis on contemporary problems in human health and the environment. This course is equivalent to CHEM 5606 at Carleton University

*Note that this course is 1.5 units. Students must take one 3 units course, or two 1.5 units courses to fulfill their program requirements.

SOC 7103 Sociology of the Environment (3 units)

Origins of environmental problems and conflicts; social theories of environmental degradation, controversies and disasters; perspectives on human-nature interactions.

MBA 6295D Seminar in Management I (1.5 units)

The seminars focus on current issues and topics in management.

Topic: Today Global Business Environment-Strategic Market

*Note that this course is 1.5 units. Students must take one 3 units course, or two 1.5 units courses to fulfill their program requirements.

MBA 6295DV Seminar in Management I (1.5 units)

The seminars focus on current issues and topics in management.

Topic: Today Global Business Environment-Strategic Market

*Note that this course is 1.5 units. Students must take one 3 units course, or two 1.5 units courses to fulfill their program requirements.

Printemps-été 2022

EVD 5111 Capstone Seminar in Environmental Sustainability (3units)

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