ENVIRONMENTAL MANAGEMENT MAJOR CO-OP (EM:C)

School of Environmental Sciences and Department of Food, Agricultural and Resource Economics, Ontario Agricultural College

The major in Environmental Management focuses on the development of leaders in the areas of environmental science and technology. The program combines a solid background in environmental science and management with business, using a mix of theoretical and applied study. The flexibility provided in semesters 6 through 8 permits students to develop their understanding of specific areas of environmental science and business or take a variety of areas within the discipline. This flexibility also allows students to participate in international exchanges. Students have the opportunity to incorporate a variety of field trips, experiential learning in the workplace and independent research projects into their program.

A principal aim of the Co-op program in Environmental Management is to facilitate the transition of students from academic studies to a professional career by enhancing the integration of theory and practice.

Students taking the degree may also take a minor in another subject area. A maximum of 2.50 credits required for the BBRM.EM co-op program may be applied to meet the requirements of a minor. Students should note that completion of a minor may require additional credits beyond the 20.00 required for the program. Students intending to acquire a minor should consult with their Program Counsellor.

Program Requirements

The Co-op program in Environmental Management is a five-year program including four work terms. Students must complete a Fall, Winter and Summer work term, and must follow the academic work schedule as outlined below (also found on the Co-operative Education website: https://www.recruitguelph.ca/cecs/). Please refer to the Co-operative Education program policy with respect to adjusting this schedule.

Environmental Management Academic and Co-op Work Term Schedule

Year	Fall	Winter	Summer
1	Academic Semester 1	Academic Semester 2	Off
2	Academic Semester 3, COOP*1100	Academic Semester 4	COOP*1000 Work Term I
3	Academic Semester 5	Academic Semester 6	COOP*2000 Work Term II
4	COOP*3000 Work Term III	COOP*4000 Work Term IV	Off
5	Academic Semester 7	Academic Semester 8	N/A

To be eligible to continue in the Co-op program, students must meet a minimum 70% cumulative average requirement after second semester, as well as meet all work term requirements. Please refer to the Co-operative Education program policy with respect to work term performance grading, work term report grading and program completion requirements.

For additional program information students should consult with their Co-op Co-ordinator and Co-op Faculty Advisor, listed on the Co-operative Education website.

Credit Summary

(22.00 Total Credits)

Code	Title	Credits
Required Courses		11.50
Restricted Electives		6.50
Free Electives		2.00
Co-op Work Terms		2.00
Total Credits		**22**

Of these credits, a minimum of 6.00 credits are required at the 3000 level or higher, of which at least 2.00 credits must be at the 4000 level.

Major

Code	Title	Credits
Semester 1 - Fall		
BIOL*1070	Discovering Biodiversity	0.50
CHEM*1040	General Chemistry I	0.50
ENVS*1030	Introduction to Environmental Sciences	1.00
MGMT*2150	Introduction to Canadian Business Management	0.50
Semester 2 - Winter		
ACCT*1220	Introductory Financial Accounting	0.50
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
FARE*1040	Introduction to Environmental Economics, Law and Policy	1.00
HROB*2090	Individuals and Groups in Organizations	0.50
Summer Semester		
Off		
Semester 3 - Fall		
BIOL*2060	Ecology	0.50
COOP*1100	Introduction to Co-operative Education	0.00
ENVS*2060	Soil Science	0.50
ENVS*2230	Communications in Environmental Science	0.50
FARE*2700	Survey of Natural Resource Economics	0.50
GEOG*2480	Mapping and GIS	0.50
Semester 4 - Winter		
ENVS*2040	Plant Health and the Environment	0.50
ENVS*2080	Introduction to Environmental Microbiology	0.50
1.50 electives or restricted electives		1.50
Summer Semester		
COOP*1000	Co-op Work Term I	0.50
Semester 5 - Fall		
GEOG*2420	The Earth From Space	0.50
GEOG*2460	Analysis in Geography	0.50
or STAT*2060	Statistics for Business Decisions	
1.50 electives or restricted electives		1.50

Semester 6 - Winter		
ENVS*3020	Pesticides and the Environment	0.50
ENVS*3060	Groundwater	0.50
1.50 electives or restricted electives		1.50
Summer Semester		
COOP*2000	Co-op Work Term II	0.50
Fall Semester		
COOP*3000	Co-op Work Term III	0.50
Winter Semester		
COOP*4000	Co-op Work Term IV	0.50
Summer Semester		
Off		
Semester 7 - Fall		
2.50 electives or restricted electives		2.50
Semester 8 - Winter		
2.50 electives or restricted electives		2.50

Restricted Electives

Students should note that some restricted electives require other courses not included among the required courses for the major as prerequisites. Students should consult the most recent undergraduate calendar for specific requirements.

Students should consult with a faculty advisor before Semester 4 in planning their restricted elective choices. Students are advised to pay particular attention to prerequisite requirements when choosing individual courses and seek advice as needed.

1. Students must select a minimum of 6.50 credits from the following lists of restricted electives.

List A

Students must select a minimum of 3.50 credits from any of the following courses without regard to group of which at least 1.00 credits must be at the 4000 level:

Code	Title	Credits
Aquatic Science		
BIOL*3450	Introduction to Aquatic Environments	0.50
CHEM*3360	Environmental Chemistry and Toxicology	0.50
EDRD*3450	Watershed Planning Practice	0.50
ENVS*3220	Terrestrial Chemistry	0.50
ENVS*4030	Ecohydrology	0.50
ENVS*4370	Natural and Anthropogenic Compounds in the Environment	0.50
GEOG*3610	Environmental Hydrology	0.50
Atmospheric Science		
ENVS*2030	Meteorology and Climatology	0.50
ENVS*2310	Introduction to Biogeochemistry	0.50
ENVS*3340	Environmental Data Analysis	0.50
GEOG*2110	Climate and the Biophysical Environment	0.50
Conservation Biodiversity Science		
BIOL*3060	Populations, Communities and Ecosystems	0.50
BIOL*3130	Conservation Biology	0.50
ENVS*2210	Apiculture and Honey Bee Biology	0.50
ENVS*2330	Current Issues in Ecosystem Science and Biodiversity	0.50
ENVS*3000	Nature Interpretation	0.50
ENVS*3010	Climate Change Biology	0.50
ENVS*3090	Insect Diversity and Biology	0.50
ENVS*3230	Agroforestry Systems	0.50
ENVS*3250	Forest Health and Disease	0.50
ENVS*3270	Forest Biodiversity	0.50
ENVS*4070	Pollinator Conservation	0.50
ENVS*4230	Biology of Aquatic Insects	0.50
ENVS*4260	Field Entomology	0.50
ENVS*4350	Forest Ecology	0.50
GEOG*3320	Food Systems: Issues in Security and Sustainability	0.50
Ecosystem and Resource Management		
BIOL*4500	Natural Resource Policy Analysis	0.50
ENVS*2120	Introduction to Environmental Stewardship	0.50
ENVS*2240	Fundamentals of Environmental Geology	0.50
ENVS*4000	Toxicological Risk Assessment	0.50
ENVS*4390	Soil Variability and Land Evaluation	1.00
GEOG*2210	Environment and Resources	0.50
GEOG*3020	Global Environmental Change	0.50
GEOG*3110	Biogeography	0.50
GEOG*3210	Indigenous-Settler Relationships in Environmental Governance	0.50
GEOG*3420	Remote Sensing of the Environment	0.50
GEOG*3480	GIS and Spatial Analysis	0.50
GEOG*4110	Environmental Systems Analysis	1.00
GEOG*4220	Local Environmental Management	0.50
GEOG*4230	Environmental Impact Assessment	0.50
Plant Health		
ENVS*3040	Natural Chemicals in the Environment	0.50
ENVS*3210	Plant Pathology	0.50
ENVS*4100	Integrated Management of Invasive Insect Pests	0.50
ENVS*4180	Insecticide Biological Activity and Resistance	0.50
ENVS*4190	Biological Activity of Herbicides	0.50
PBIO*4530	Plants and Environmental Pollution	0.50
Soil and Nutrient Management		
ENVS*3080	Soil and Water Conservation	0.50
ENVS*3310	Soil Biodiversity and Ecosystem Function	0.50
ENVS*4090	Soil Management	0.50
ENVS*4160	Soil and Nutrient Management	0.50
ENVS*4320	Laboratory and Field Methods in Soil Biodiversity	1.00
ENVS*4390	Soil Variability and Land Evaluation	1.00

List B

Students must select a minimum of 1.50 credits from list B. At least 0.50 credits must be at the 4000 level:

Code	Title	Credits
Accounting		
ACCT*1240	Applied Financial Accounting	0.50
ACCT*2230	Management Accounting	0.50
ACCT*3230	Intermediate Management Accounting	0.50
ACCT*4230	Advanced Management Accounting	0.50
Business and Management		
MGMT*3020	Corporate Social Responsibility	0.50
MGMT*3320	Financial Management	0.50
Food, Agriculture and Resource Economics		
FARE*2410	Agri-food Markets and Policy	0.50
FARE*3170	Cost-Benefit Analysis	0.50
FARE*3310	Operations Management	0.50
FARE*4290	Land Economics	0.50
FARE*4310	Resource Economics	0.50
FARE*4360	Marketing Research	0.50
FARE*4370	Food & Agri Marketing Management	0.50
Leadership and Communications		
EDRD*2020	Interpersonal Communication	0.50
EDRD*3140	Organizational Communication	0.50
EDRD*3400	Sustainable Communities	0.50
EDRD*4120	Leadership Development in Small Organizations	0.50
HROB*2010	Foundations of Leadership	0.50
HROB*4010	Leadership Certificate Capstone	0.50

List C

Students may also select any of the following courses as restricted electives:

Code	Title	Credits
AGR*3450	Research Methods in Agricultural Science [1]	0.50
AGR*4450	Research Project I [1]	1.00
AGR*4460	Research Project II [1]	1.00
AGR*4600	Agriculture and Food Issues Problem Solving	1.00
BIOC*2580	Introduction to Biochemistry	0.50
CHEM*1050	General Chemistry II	0.50
ECON*1100	Introductory Macroeconomics	0.50
ENVS*4410	Introduction to Advanced Independent Research [1]	0.50
ENVS*4420	Advanced Independent Research [1]	0.50
ENVS*4430	Advanced Independent Research [1]	1.00
FARE*4550	Independent Studies I [1]	0.50
FARE*4560	Independent Studies II [1]	0.50
GEOG*1300	Introduction to the Biophysical Environment	0.50
GEOG*1350	Earth: Hazards and Global Change	0.50

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Students considering graduate studies are encouraged to take at least 1.00 of these credits.