

# ENVIRONMENTAL ECONOMICS AND POLICY (EEP)

Department of Food, Agricultural and Resource Economics, Ontario Agricultural College

This major provides the foundation for applying science and economics to environmental issues to produce effective environmental policy. Students gain an understanding of the policy tools and market mechanisms for managing our natural resources effectively. Knowledge and skills learned in this major will enable students to identify, prioritize and solve environmental problems by integrating both scientific and economic theories and data. Equipped with the ability to look at current topics from the perspectives of economics, politics and environmental sciences, students have a number of interesting career opportunities in the public, private and NGO sectors. At the same time, the major fully prepares students to move onto professional and research graduate programs.

## Major Requirements (Honours)

This is a major within the degree: Bachelor of Science in Environmental Sciences.

Code	Title	Credits
<b>Semester 1</b>		
BIOL*1070	Discovering Biodiversity	0.50
CHEM*1040	General Chemistry I	0.50
ENVS*1030	Introduction to Environmental Sciences	1.00
MATH*1080	Elements of Calculus I	0.50
<b>Semester 2</b>		
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
CHEM*1050	General Chemistry II	0.50
FARE*1040	Introduction to Environmental Economics, Law and Policy	1.00
GEOG*1300	Introduction to the Biophysical Environment	0.50
<b>Semester 3</b>		
ECON*1100	Introductory Macroeconomics	0.50
FARE*2700	Survey of Natural Resource Economics	0.50
1.50 electives or restricted electives		1.50
<b>Semester 4</b>		
ECON*2310	Intermediate Microeconomics	0.50
ECON*2410	Intermediate Macroeconomics	0.50
ECON*2770	Introductory Mathematical Economics	0.50
ECON*2740	Economic Statistics <sup>1</sup>	0.50
or STAT*2040	Statistics I	
0.50 electives or restricted electives		0.50
<b>Semester 5</b>		
ECON*2100	Economic Growth and Environmental Quality	0.50
ECON*3740	Introduction to Econometrics	0.50
1.50 electives or restricted electives		1.50
<b>Semester 6</b>		
FARE*3170	Cost-Benefit Analysis	0.50

2.00 electives or restricted electives 2.00

<b>Semester 7</b>		
ECON*4930	Environmental Economics	0.50
ENVS*4001	Project in Environmental Sciences	0.50
FARE*4290	Land Economics	0.50
1.00 electives or restricted electives		1.00
<b>Semester 8</b>		
ENVS*4002	Project in Environmental Sciences	0.50
FARE*4310	Resource Economics	0.50
1.50 electives or restricted electives		1.50

<sup>1</sup> Students interested in the Statistics and Environmental Risk Assessment sequence in their restricted electives should choose STAT\*2040 Statistics I to satisfy the statistics requirement in the ENVS core.

## Restricted Electives

Students in the Environmental Economics and Policy major are required to complete 3.00 credits in restricted electives.

Courses in the following lists may be taken to satisfy the restricted electives requirement. Courses are grouped to assist students selecting programs of study aimed at different educational and career paths.

### List A

1. Students must select a minimum of 0.50 credits from the following:

Code	Title	Credits
ECON*3100	Game Theory	0.50
ECON*3710	Advanced Microeconomics	0.50

2. An additional 1.50 credits in Economics (ECON) or Food, Agriculture, and Resource Economics (FARE) at the 3000 level or higher.

### List B

Students must select a minimum of 1.00 credits from the following lists:

#### 1. Remote Sensing, Geographical Information Systems and Spatial Analysis

Code	Title	Credits
GEOG*2420	The Earth From Space	0.50
GEOG*2480	Mapping and GIS	0.50
GEOG*3420	Remote Sensing of the Environment	0.50
GEOG*3480	GIS and Spatial Analysis	0.50
GEOG*4480	Applied Geomatics	1.00

#### 2. Statistics and Environmental Risk Assessment

Code	Title	Credits
STAT*2050	Statistics II	0.50
STAT*3510	Environmental Risk Assessment	0.50

**Note:** Students interested in this sequence should take STAT\*2040 Statistics I rather than ECON\*2740 Economic Statistics to satisfy the statistics requirement in the ENVS core.

#### 3. Earth Sciences

Code	Title	Credits
ENVS*2030	Meteorology and Climatology	0.50
ENVS*2060	Soil Science	0.50

ENVS*2310	Introduction to Biogeochemistry	0.50
ENVS*3060	Groundwater	0.50

#### 4. Ecology and Conservation Biology

Code	Title	Credits
BIOL*2060	Ecology	0.50
BIOL*3060	Populations, Communities and Ecosystems	0.50
BIOL*3130	Conservation Biology	0.50
BIOL*4150	Wildlife Conservation and Management	0.50
BIOL*4500	Natural Resource Policy Analysis	0.50
ENVS*2330	Current Issues in Ecosystem Science and Biodiversity	0.50

#### 5. Toxicology and Environmental Chemistry

Code	Title	Credits
ENVS*3020	Pesticides and the Environment	0.50
ENVS*3040	Natural Chemicals in the Environment	0.50
ENVS*3220	Terrestrial Chemistry	0.50
TOX*2000	Principles of Toxicology	0.50
TOX*3360	Environmental Chemistry and Toxicology	0.50

#### 6. Experiential Learning

Code	Title	Credits
IAEF*3500	Experiential Education	0.50
IAEF*3510	Interdisciplinary Flexible Internship	0.50

### Credit Summary

(20.00 Total Credits)

Code	Title	Credits
	Environmental Sciences Core	7.00
	Environmental Economics and Policy Required Courses	5.00
	Environmental Economics and Policy Restricted Electives	3.00
	Free Electives	5.00
	<b>Total Credits</b>	<b>20</b>

Students are encouraged to seek advice on their choices from their faculty advisor.

Students are reminded that 6.00 credits of their B.Sc.(Env.) degree must be at the 3000-4000 level, and no program may include more than 7.00 credits at the 1000 level.

### Co-op Requirements (Honours)

This is a major within the degree: Bachelor of Science in Environmental Sciences.

The Co-op program in Environmental Economics and Policy 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.

### Academic and Co-op Work Term Schedule

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

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 web site.

### Credit Summary

(22.00 Total Credits)

Code	Title	Credits
	Environmental Sciences Core	7.00
	Environmental Economics and Policy Required Courses	5.00
	Environmental Economics and Policy Restricted Electives	3.00
	Free Electives	5.00
	Co-op Work Terms	2.00
	<b>Total Credits</b>	<b>22</b>

Students are reminded that 6.00 credits of their B.Sc.(Env.) degree must be at the 3000-4000 level, and no program may include more than 7.00 credits at the 1000 level.

### Recommended Program Sequence

Code	Title	Credits
<b>Semester 1 - Fall</b>		
BIOL*1070	Discovering Biodiversity	0.50
CHEM*1040	General Chemistry I	0.50
ENVS*1030	Introduction to Environmental Sciences	1.00
MATH*1080	Elements of Calculus I	0.50
<b>Semester 2 - Winter</b>		
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
CHEM*1050	General Chemistry II	0.50
COOP*1100	Introduction to Co-operative Education	0.00
FARE*1040	Introduction to Environmental Economics, Law and Policy	1.00
GEOG*1300	Introduction to the Biophysical Environment	0.50
<b>Summer Semester</b>		
No academic semester or work term		
<b>Semester 3 - Fall</b>		
ECON*1100	Introductory Macroeconomics	0.50

FARE*2700	Survey of Natural Resource Economics	0.50
ECON*2310	Intermediate Microeconomics	0.50
1.00 electives or restricted electives		1.00

**Winter Semester**

COOP*1000	Co-op Work Term I	0.50
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**Summer Semester**

COOP*2000	Co-op Work Term II	0.50
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**Semester 4 - Fall**

ECON*2100	Economic Growth and Environmental Quality	0.50
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ECON*2410	Intermediate Macroeconomics	0.50
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ECON*2770	Introductory Mathematical Economics	0.50
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ECON*2740	Economic Statistics <sup>2</sup>	0.50
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or STAT*2040	Statistics I	
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0.50 electives or restricted electives		0.50
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**Semester 5 - Winter**

ECON*3740	Introduction to Econometrics	0.50
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FARE*3170	Cost-Benefit Analysis	0.50
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1.50 electives or restricted electives		1.50
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**Summer Semester**

COOP*3000	Co-op Work Term III	0.50
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**Fall Semester**

COOP*4000	Co-op Work Term IV	0.50
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**Semester 6 - Winter**

FARE*4310	Resource Economics	0.50
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2.00 electives or restricted electives		2.00
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**Summer Semester**

No academic semester or work term

**Semester 7 - Fall**

ECON*4930	Environmental Economics	0.50
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ENVS*4001	Project in Environmental Sciences	0.50
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FARE*4290	Land Economics	0.50
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1.00 electives or restricted electives		1.00
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**Semester 8 - Winter**

ENVS*4002	Project in Environmental Sciences	0.50
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2.00 electives or restricted electives		2.00
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<sup>2</sup> Students can choose to take ECON\*2740 Economic Statistics in Semester 5 instead of STAT\*2040 Statistics I. Students interested in the Statistics and Environmental Risk Assessment sequence in their restricted electives should choose STAT\*2040 Statistics I to satisfy the statistics requirement in the ENVS core.

**Restricted Electives**

Students in the Environmental Economics and Policy major are required to complete 3.00 credits in restricted electives.

Courses in the following lists may be taken to satisfy the restricted electives requirement. Courses are grouped to assist students selecting programs of study aimed at different educational and career paths.

**List A**

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**List B**

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1. **Remote Sensing, Geographical Information Systems and Spatial Analysis**

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Code	Title	Credits
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**Note:** Students interested in this sequence should take STAT\*2040 Statistics I rather than ECON\*2740 Economic Statistics to satisfy the statistics requirement in the ENVS core.

3. **Earth Sciences**

Code	Title	Credits
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ENVS*2060	Soil Science	0.50
ENVS*2310	Introduction to Biogeochemistry	0.50
ENVS*3060	Groundwater	0.50

4. **Ecology and Conservation Biology**

Code	Title	Credits
BIOL*2060	Ecology	0.50
BIOL*3060	Populations, Communities and Ecosystems	0.50
BIOL*3130	Conservation Biology	0.50
BIOL*4150	Wildlife Conservation and Management	0.50
BIOL*4500	Natural Resource Policy Analysis	0.50
ENVS*2330	Current Issues in Ecosystem Science and Biodiversity	0.50

5. **Toxicology and Environmental Chemistry**

Code	Title	Credits
ENVS*3020	Pesticides and the Environment	0.50
ENVS*3040	Natural Chemicals in the Environment	0.50
ENVS*3220	Terrestrial Chemistry	0.50
TOX*2000	Principles of Toxicology	0.50
TOX*3360	Environmental Chemistry and Toxicology	0.50