



**McGill**



**Program Proposal Form**

(09/2003)

AC-04-106

<p><b>1.0 Degree Title</b> <i>Bachelor of Science</i></p> <p><b>1.1 Major (Subject)</b> <i>Environment</i></p> <p><b>1.2 Concentration (Option)</b> <i>Ecol Determs Health - Popul</i> (Note: This is a <u>Domain</u> in the Major Program in Environment, and is offered by both Agricultural and Environmental Sciences and by Science.)</p> <p><b>1.3 Minor</b></p> <p><b>1.4 Category</b> <i>Major Program</i></p> <p><b>1.5 Complete Program Title</b> <i>B.Sc.; Environment; Ecological Determinants of Health Domain – Population</i></p>	<p><b>2.0 Administering Faculty</b> <i>Arts</i></p> <p style="text-align: center;"><b>Offering Faculty</b> <i>Science</i></p> <p><b>3.0 Effective Term of Offering:</b> <i>200509</i> (eg. 200409)</p> <p><b>4.0 Existing Credit Weight:</b> <i>63</i> <b>Proposed Credit Weight:</b> <i>63</i></p>
<p><b>1.6</b></p>	

**5.0 Description (150 words max)**

This Domain considers the interface between the environment and human wellbeing, with particular focus on the triad that ties human health to the environment through the elements of food and infectious agents.

For example, agricultural practices shift the balance between beneficial and harmful ingredients of food. Use of insecticides presents dilemmas with regard to the environment, economics and human health. The distribution of infectious diseases is influenced by the climatic conditions that permit vectors to coexist with man, by deforestation, by urbanization, and by human interventions ranging from the building of dams to provision of potable water.

In designing interventions that aim to prevent or reduce infectious contaminants in the environment, or to improve food production and nutritional quality, not only is it important to understand methods of intervention, but also to understand social forces that influence how humans respond to such interventions. These interventions are explored at an ecosystem level that looks at society, land and population health.

## 6.0 Proposed program course lists

Courses offered at Macdonald Campus are marked with (M).

### Proposed Program (63 credits)

NOTE: Students are required to take a maximum of 31 credits at the 200-level and a minimum of 12 credits at the 400-level or higher in this program. This includes Core and Required courses.

#### Core: Required Courses (18 credits)

ENVR 200 (3) The Global Environment  
 ENVR 201 (3) Society and Environment  
 ENVR 202 (3) The Evolving Earth  
 ENVR 203 (3) Knowledge, Ethics and Environment  
 ENVR 301 (3) Environmental Research Design  
 ENVR 400 (3) Environmental Thought

#### Core: Complementary Course – Senior Research Project (3 credits\*)

AGRI 519 (6) Sustainable Development Plans (in Barbados)  
 ENVR 401 (3) Environmental Research  
 ENVR 451 (6) Research in Panama (in Panama)

\* Only 3 credits will be applied to the program; extra credits will count as electives.

#### Domain: Required Courses (6 credits)

PARA 410 (3) Environment and Infection (M)  
 SOCI 234 (3) Population and Society

#### Domain - Population Stream: Complementary Courses (36 credits)

18 credits of fundamentals, maximum of 3 credits from each category:

##### Toxicology

NUTR 420 (3) Toxicology and Health Risks (M)  
 PHAR 303 (3) Principles of Toxicology

##### Genetics

BIOL 202 (3) Basic Genetics  
 CELL 204 (4) Genetics (M)

##### Biology

BIOL 200 (3) Molecular Biology  
 BIOL 201 (3) Cell Biology and Metabolism  
 FDSC 211 (3) Biochemistry 1(M)

##### Statistics

AEMA 310 (3) Statistical Methods 1 (M)  
 MATH 203 (3) Principles of Statistics 1  
 equivalent

##### Nutrition

ANSC 330 (3) Fundamentals of Nutrition (M)  
 NUTR 207 (3) Nutrition and Health (M)  
 NUTR 307 (3) Human Nutrition (Video conference Downtown and Macdonald)

##### Advanced Ecology

AEMA 306 (3) Mathematical Methods in Ecology (M)  
 BIOL 465 (3) Conservation Biology  
 BIOL 553 (3) Neotropical Environments (in Panama)  
 ENVR 540 (3) Ecology of Species Invasions  
 or BIOL 540

GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)  
 MICR 331 (3) Microbial Ecology (M)  
 PLNT 460 (3) Plant Ecology (M)  
 WILD 410 (3) Wildlife Ecology (M)  
 WOOD 410 (3) The Forest Ecosystem (M)

6 credits from the following List A, maximum of 3 credits from each category:

Hydrology, Climate, and Agriculture

ABEN 217 (3) Hydrology and Water Resources (M)  
 AGRI 340 (3) Principles of Ecological Agriculture (M)  
 AGRI 452 (3) Water Resources in Barbados (in Barbados)  
 AGRI 550 (3) Sustained Tropical Agriculture (in Panama)  
 GEOG 321 (3) Climatic Environments  
 GEOG 322 (3) Environmental Hydrology  
 NRSC 510 (3) Agricultural Micrometeorology (M)

Decision Making and Social Change

AGEC 242 (3) Management Theories and Practices (M)  
 AGEC 200 (3) Principles of Microeconomics (M)  
 or ECON 208 (3) Microeconomic Analysis and Applications  
 AGRI 413 (3) Globalization: Issues of Change (in Barbados)  
 EDER 461 (3) Society and Change  
 ENVR 465 (3) Environment and Social Change  
 GEOG 302 (3) Environmental Management 1  
 GEOG 404 (3) Environmental Management 2 (in Panama)  
 PHIL 343 (3) Biomedical Ethics

Development and History

AGRI 210 (3) Agro-Ecological History (M)  
 ANTH 212 (3) Anthropology of Development  
 HIST 292 (3) History and the Environment  
 SOCI 254 (3) Development and Underdevelopment

12 credits from the following list B, maximum of 3 credits from each category:

Techniques and Management

ABEN 430 (3) GIS for Bioresource Management (M)  
 CHEE 230 (3) Environmental Aspects of Technology  
 GEOG 201 (3) Introductory Geo-Information Science  
 NRSC 437 (3) Assessing Environmental Impact (M)  
 URBP 507 (3) Sustainable Development Plans (in Barbados)

Immunology and Infectious Disease

ANSC 400 (3) Eukaryotic Cells and Viruses (M)  
 EPIB 637 (3) Infectious and Parasitic Disease Epidemiology  
 MIMM 314 (3) Immunology  
 MIMM 324 (3) Fundamental Virology  
 MIMM 413 (3) Parasitology  
 PARA 438 (3) Immunology (M)  
 WILD 424 (3) Parasitology (M)

Nutrition and Agriculture

NUTR 403 (3) Nutrition in Society (M)  
 AGRI 411 (3) International Agriculture (M)  
 NUTR 501 (3) Nutrition in Developing Countries (M)  
 NUTR 512 (3) Herbs, Foods and Phytochemicals (Video conference Downtown and Macdonald)

Populations and Place

CANS 407 (3) Understanding Atlantic Canada (at Bay of Fundy)  
 GEOG 300 (3) Human Ecology in Geography  
 GEOG 303 (3) Health Geography  
 GEOG 498 (3) Humans in Tropical Environments (in Panama)  
 PSYC 533 (3) International Health Psychology

Pollution and Pest Management  
 ABEN 322 (3) Organic Waste Management (M)  
 BIOL 350 (3) Insect Biology and Control  
 ENTO 352 (3) Control of Insect Pests (M)  
 NRSC 333 (3) Physical and Biological Aspects of Pollution (M)  
 PLNT 361 (3) Pest Management and the Environment (M)

## 7.0 Consultation with Related Units

Morton Mendelson, Associate Dean, Academic, Faculty of Science

Sharon Bezeau, Recorder, Faculty of Science

Marj Russell, Degree Evaluation Officer, ARR

## 8.0 Rationale

Originally, the Ecological Determinants of Health Domain was offered with two separate “Streams”, one called “Cellular”, and the other “Population”. Banner/Minerva does not recognize “Streams”, so the streams were not distinguished on the student’s transcript, nor in Degree Audit. By retiring these streams and proposing them as separate programs, this issue will be resolved. Note that current students will be allowed to finish and graduate from their original program, or transfer to this new one.

This program’s course list and credit count are the same as for the Ecological Determinants of Health Domain – Population Stream as offered in 2004-05, with minor maintenance changes. These changes are outlined below, with their rationales.

Changed from 2004-05:

Core: Complementary Courses

1. Delete ENVR 466 (6) Research in Atlantic Canada

Domain: Complementary Courses

2. Add ENVR/BIOL 540 (3) Ecology of Species Invasions to “advanced ecology”.
3. Add AGRI 452 (3) Water Resources in Barbados to “hydrology, climate and agriculture”.
4. Add AGECE 200 (3) Principles of Microeconomics to “decision making and social change” **as an alternative** to ECON 208.
5. Add AGRI 413 (3) Globalization: Issues of Change to “decision making and social change”.
6. Add URBP 507 (3) Sustainable Development Plans to “techniques and management”
7. Change PARA 400 (3) Eukaryotic Cells and Viruses to ANSC 400 (3) Eukaryotic Cells and Viruses.
8. Add GEOG 303 (3) Health Geography to “populations and place”.

Rationale:

1. ENVR 466 is being retired.
2. ENVR/BIOL 540 is a cross listed course introduced two years ago. It deals in part with the health risks associated with invasive species.
3. AGRI 452 is part of the Barbados Field Study Semester, and is relevant to this section.

4. AGECE 200 is functionally equivalent to ECON 208. These courses are often listed together in the MSE domains to allow greater flexibility for Macdonald students.
5. AGRI 413 is part of the Barbados Field Study Semester, and is relevant to this section.
6. URBP 507 is part of the Barbados Field Study Semester, and is relevant to this section.
7. PARA 400 was changed to ANSC 400 last year. The course description was not changed.
8. GEOG 303 is a relatively new course that looks at variations in health and health care between places.

**9.0 Approvals**

Routing Sequence	Name	Signature	Date
Department	Nigel Roulet		
Curric/Acad Cmty			
Faculty 1			
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

**Submitted by:**

Pete Barry, MSE Program Coordinator, Tel. 4306 Fax 1643, [Pete.barry@mcgill.ca](mailto:Pete.barry@mcgill.ca)

Submission Date:

To be completed by ARR:

CIP Code: