



McGill



Program Proposal Form

(09/2003)

AC-04-107

<p>1.0 Degree Title <i>Bachelor of Science</i></p> <p>1.1 Major (Subject) <i>Environment</i></p> <p>1.2 Concentration (Option) <i>Ecol Determs Health - Cellular</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>1.3 Minor</p> <p>1.4 Complete Program Title <i>B.Sc.; Environment; Ecological Determinants of Health Domain – Cellular</i></p>	<p>2.0 Administering Faculty <i>Arts</i></p> <p style="padding-left: 40px;">Offering Faculty <i>Science</i></p> <p>3.0 Effective Term of Offering: <i>200509</i> (eg. 200409)</p> <p>4.0 Program Info</p> <p>4.1 Program Type: <i>Bachelor</i></p> <p>4.2 Category: <i>Major</i></p> <p>4.3 Level: <i>Undergraduate</i></p> <p>5.0 Total Credits: <i>63</i></p> <p>6.0 Consultation with Related Units <i>Yes</i> Morton Mendelson, AD Academic, Science Sharon Bezeau, Recorder, Science Marj Russell, Degree Eval. Officer, ARR</p> <p>Financial Consult <i>No</i></p>
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7.0 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 the physiological level.

8.0 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 - Cellular Stream: Complementary Courses (36 credits)

18 credits of Fundamentals, maximum of 3 credits from any one category:

Toxicology

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

Cellular Biology

AEBI 202 (3) Cellular Biology (M)
 ANSC 234 (3) Biochemistry 2 (M)
 BIOL 201 (3) Cell Biology and Metabolism

Genetics

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

Molecular Biology

BIOL 200 (3) Molecular Biology
 FDSC 211 (3) Biochemistry 1(M)

Statistics

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

Nutrition

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

12 credits chosen from Human Health, maximum of 3 credits from any one category:

Immunology and Pathogenicity

MICR 341 (3) Mechanisms of Pathogenicity (M)

MIMM 314 (3) Immunology
PARA 438 (3) Immunology (M)
PATH 300 (3) Human Disease

Infectious Disease

ANSC 400 (3) Eukaryotic Cells and Viruses (M)
MIMM 324 (3) Fundamental Virology
MIMM 413 (3) Parasitology
WILD 424 (3) Parasitology (M)

Nutrition

NUTR 403 (3) Nutrition in Society (M)
NUTR 512 (3) Herbs, Foods and Phytochemicals (Video conference Downtown and Macdonald)

Drugs and Hormones

ANSC 424 (3) Metabolic Endocrinology (M)
PHAR 300 (3) Drug Action

Physiology

ANSC 323 (4) Mammalian Physiology (M)
PHGY 209 (3) Mammalian Physiology 1

6 credits chosen from the Natural Environment, maximum of 3 credits from any one category:

Hydrology and Climate

ABEN 217 (3) Hydrology and Water Resources (M)
AGRI 452 (3) Water Resources in Barbados (in Barbados)
GEOG 321 (3) Climatic Environments
GEOG 322 (3) Environmental Hydrology
NRSC 510 (3) Agricultural Micrometeorology (M)

Techniques and Management

ABEN 322 (3) Organic Waste Management (M)
CHEE 230 (3) Environmental Aspects of Technology
GEOG 302 (3) Environmental Management 1
URBP 507 (3) Sustainable Development Plans (in Barbados)
WILD 437 (3) Assessing Environmental Impact (M)

Pest Management

BIOL 350 (3) Insect Biology and Control
ENTO 352 (3) Control of Insect Pests (M)
PLNT 361 (3) Pest Management and the Environment (M)

Pollution Control and Management

ABEN 518 (3) Bio-Treatment of Wastes (M)
CHEM 307 (3) Analytical Chemistry of Pollutants
NRSC 333 (3) Physical and Biological Aspects of Pollution (M)

Ecology

BIOL 432 (3) Limnology
BIOL 465 (3) Conservation Biology
BIOL 553 (3) Neotropical Environments (in Panama)
ENVR (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 304 (3) Biology of Fungi (M)
PLNT 460 (3) Plant Ecology (M)
WILD 410 (3) Wildlife Ecology (M)
WOOD 410 (3) The Forest Ecosystem (M)

9.0 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 – Cellular 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. Change PARA 400 (3) Eukaryotic Cells and Viruses to ANSC 400 (3) Eukaryotic Cells and Viruses
3. Add AGRI 452 (3) Water Resources in Barbados to “hydrology and climate”
4. Add URBP 507 (3) Sustainable Development Plans to “techniques and management”
5. Add ENVR/BIOL 540 (3) Ecology of Species Invasions to “ecology”

Rationale:

1. ENVR 466 is being retired.
2. PARA 400 was changed to ANSC 400 last year. The course description was not changed.
3. AGRI 452 is part of the Barbados Field Study Semester, and is relevant to this section.
4. URBP 507 part of the Barbados Field Study Semester, and is relevant to this section.
5. ENVR/BIOL 540 is a cross listed course introduced two years ago. It deals in part with the health risks associated with invasive species.

10.0 Approvals

Routing Sequence	Name	Signature	Date
Department	Colin Chapman		
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
 Submission Date: November 2004

To be completed by ARR:

CIP Code: