



McGill



Program Proposal Form

(09/2003)

AC-04-108

<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>Water Environ & Ecosys - Biol</i> (Note: This is a <u>Domain</u> in the Major Program in Environment, and is offered by both Agricultural & Environmental Sciences and by Science.)</p> <p>1.3 Minor</p> <p>1.4 Complete Program Title <i>B.Sc.; Environment; Water Environments and Ecosystems Domain - Biological</i></p>	<p>2.0 Administering Faculty <i>Arts</i></p> <p style="text-align: center;">Offering Faculty <i>Science</i></p> <p>3.0 Effective Term of Proposal: <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 Credit Weight: <i>57</i></p> <p>6.0 Consultation With Related Units: <i>yes</i> Morton Mendelson, AD Academic, Science Sharon Bezeau, Recorder, Faculty of Science Marj Russell, Degree Evaluation Officer, ARR</p>
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7.0 Description (150 words max)

This program explores in depth the mechanisms regulating the different forms of life in water bodies. The physical mechanisms controlling water properties are also covered.

Graduates of this Domain are qualified to enter the work force or to pursue advanced studies in fields such as marine biology, geography, physical oceanography and atmospheric science.

8.0 Proposed program course lists

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

Proposed Program (57 credits)

NOTE: Students are required to take a maximum of 30 credits at the 200-level and a minimum of 12 credits at the 400-level or higher. 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 Course (3 credits)

ATOC 215 (3) Oceans, Weather and Climate

Domain: Complementary Courses (33 credits)

6 credits chosen from:

ABEN 217 (3) Hydrology and Water Resources (M)

or GEOG 322 (3) Environmental Hydrology

WILD 205 (3) Principles of Ecology (M)

or BIOL 308 (3) Ecological Dynamics

3 credits of math and statistics from:

AEMA 202 (3) Intermediate Calculus (M)

AEMA 310 (3) Statistical Methods 1 (or equivalent) (M)

MATH 203 (3) Principles of Statistics 1

MATH 222 (3) Calculus 3

3 credits chosen from:

BIOL 331 (3) Ecology/Behaviour Field Course (at Mont St. Hilaire)

GEOG 495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)

GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)

or an equivalent aquatic field course

3 credits chosen from:

AGEC 333 (3) Resource Economics (M)

AGRI 413 (3) Globalization: Issues of Change (in Barbados)

ANTH 339 (3) Ecological Anthropology

ANTH 418 (3) Environment and Development

ECON 225 (3) Economics of the Environment

ECON 326 (3) Ecological Economics

ENVR 465 (3) Environment and Social Change (at Bay of Fundy)

GEOG 404 (3) Environmental Management 1 (in Panama)

GEOG 498 (3) Humans in Tropical Environments (in Panama)

POLI 345 (3) International Organization

POLI 466 (3) Public Policy Analysis

SOC 565 (3) Social Change in Panama (in Panama)

18 credits, minimum, from lists A and B below

List A, 9 to 12 credits chosen from:

AGRI 435 (3) Soil and Water Quality Management (M)

BIOL 432 (3) Limnology

BIOL 441 (3) Biological Oceanography

BIOL 442 (3) Marine Biology

BIOL 465 (3) Conservation Biology

BIOL 553 (3) Neotropical Environments (in Panama)

BIOL 570 (3) Advanced Seminar in Evolution

ENTO 535 (3) Aquatic Entomology (M)

ENVR 540 or BIOL 540 (3) Ecology of Species Invasions

GEOG 305 (3) Soils and Environment

or SOIL 210 (3) Principles of Soil Science (M)

GEOG 350 (3) Ecological Biogeography

MICR 331 (3) Microbial Ecology (M)

NRSC 315 (3) Science of Inland Waters (M)

NRSC 333 (3) Physical and Biological Aspects of Pollution (M)

PARA 410 (3) Environment and Infection (M)

WILD 401 (4) Fisheries and Wildlife Management (M)

List B, 6 to 10 credits chosen from:
 ABEN 430 (3) GIS for Bioresource Management (M)
 ATOC 308 (3) Principles of Remote Sensing
 or GEOG 308 (3) Principles of Remote Sensing
 ATOC 219 (3) Introduction to Atmospheric Chemistry
 or CHEM 219 (3) Introduction to Atmospheric Chemistry
 ATOC 419 (3) Advances in Chemistry of Atmosphere
 or CHEM 419 (3) Advances in Chemistry of Atmosphere
 CHEM 257D1 (2) Introductory Analytical Chemistry
 CHEM 257D2 (2) Introductory Analytical Chemistry
 EPSC 220 (3) Principles of Geochemistry
 GEOG 201 (3) Introductory Geo-Information Science
 GEOG 372 (3) Running Water Environments
 GEOG 522 (3) Advanced Environmental Hydrology
 GEOG 537 (3) Advanced Fluvial Geomorphology
 GEOG 550 (3) Quaternary Paleoecology

9.0 Rationale

Originally, the Water Environments and Ecosystems Domain was offered with two separate “Streams”, one called “Biological”, and the other “Physical”. 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 Water Environments and Ecosystems Domain – Biological Stream as offered in 2004-05, with minor maintenance changes. These changes are outlined below, with their rationales.

Changed from 2004-05 (no change in credit total):

Core: Complementary Courses

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

Domain: Complementary Courses

2. Add AGRI 413 (3) Globalization: Issues of Change to the fourth complementary course list (begins with AGECE 333).

Rationale

1. ENVR 466 is being retired.
2. AGRI 413 is part of the Barbados Field Study Semester, and is relevant to this domain.

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:

To be completed by ARR:

CIP Code: