# Program Revision Form

(09/2003)

AC-04-101

| | |
|---|---|
| **1.0 Degree Title**<br>*Bachelor of Science*<br><br>**1.1 Major (Subject)**<br>*Environment*<br><br>**1.2 Concentration (Option)**<br>*Biodiversity and Conservation*<br>(Note: This is a Domain in the Major Program in Environment, and is offered by both Agricultural and Environmental Sciences and by Science.)<br><br>**1.3 Minor**<br><br>**1.4 Category**<br>*Major Program*<br><br>**1.5 Complete Program Title**<br>*B.Sc.; Environment; Biodiversity and Conservation Domain* | **2.0 Administering Faculty** *Arts*<br><br>**Offering Faculty** *Science*<br><br>**3.0 Effective Term of Revision:** *200509*<br>(eg. 200409)<br><br>**4.0 Existing Credit Weight**: *63*<br>**Proposed Credit Weight:** *63*<br><br>**5.0 Description (150 words max)**<br>*no change to program description* |

**6.0 Existing and Proposed program course lists**

Additions are in ***Bold Italics***, and deletions are in ~~Strikeout~~. Numbered changes refer to items in the Rationale and the consultation list. Courses offered at Macdonald Campus are marked with (M).

| Current Program | Proposed Program |
|---|---|
| **Core: Required Courses** (18 credits)<br>ENVR 200 (3) The Global Environment<br>ENVR 201 (3) Society and Environment<br>ENVR 202 (3) The Evolving Earth<br>ENVR 203 (3) Knowledge, Ethics and Environment<br>ENVR 301 (3) Environmental Research Design<br>ENVR 400 (3) Environmental Thought | **Core: Required Courses** (18 credits)<br>ENVR 200 (3) The Global Environment<br>ENVR 201 (3) Society and Environment<br>ENVR 202 (3) The Evolving Earth<br>ENVR 203 (3) Knowledge, Ethics and Environment<br>ENVR 301 (3) Environmental Research Design<br>ENVR 400 (3) Environmental Thought |
| **Core: Complementary Course – Senior Research Project** (3 credits*)<br>AGRI 519 (6) Sustainable Development Plans (in Barbados)<br>ENVR 401 (3) Environmental Research<br>ENVR 451 (6) Research in Panama (in Panama)<br>ENVR 466 (6) Research in Atlantic Canada (at Bay of Fundy)<br>* Only 3 credits will be applied to the program; extra credits will count as electives. | **Core: Complementary Course – Senior Research Project** (3 credits*)<br>AGRI 519 (6) Sustainable Development Plans (in Barbados)<br>ENVR 401 (3) Environmental Research<br>ENVR 451 (6) Research in Panama (in Panama)<br>[1]~~ENVR 466 (6) Research in Atlantic Canada (at Bay of Fundy)~~<br>* Only 3 credits will be applied to the program; extra credits will count as electives. |
| **Domain: Required Courses** (9 credits) | **Domain: Required Courses** (9 credits) |

| | |
|---|---|
| 9 credits, basic courses in the biological principles of diversity, systematics and conservation:<br>BIOL 304 (3) Evolution<br>BIOL 305 (3) Animal Diversity<br>BIOL 465 (3) Conservation Biology | 9 credits, basic courses in the biological principles of diversity, systematics and conservation:<br>BIOL 304 (3) Evolution<br>BIOL 305 (3) Animal Diversity<br>BIOL 465 (3) Conservation Biology |
| **Domain: Complementary Courses** (33 credits)<br>6 credits of ecology and statistics:<br><br>BIOL 308 (3) Ecological Dynamics<br>or WILD 205 (3) Principles of Ecology (M)<br><br><br>BIOL 373 (3) Biometry<br>or AEMA 310 (3) Statistical Methods 1 (M) | **Domain: Complementary Courses** (33 credits)<br>[2]~~6 credits of ecology and statistics~~:<br>[2]***3 credits of ecology***<br>BIOL 308 (3) Ecological Dynamics<br>or WILD 205 (3) Principles of Ecology (M)<br><br>[2]***3 credits of statistics***<br>BIOL 373 (3) Biometry<br>or AEMA 310 (3) Statistical Methods 1 (M) |
| 9 credits, interface between science, policy and management:<br>ANTH 418 (3) Environment and Development<br>ECON 208 (3) Microeconomic Analysis and Applications<br><br>ECON 225 (3) Economics of the Environment<br>GEOG 302 (3) Environmental Management 1<br><br>GEOG 408 (3) Geography of Development<br>GEOG 410 (3) Geography of Underdevelopment: Current Problems | 9 credits, interface between science, policy and management:<br>ANTH 418 (3) Environment and Development<br>ECON 208 (3) Microeconomic Analysis and Applications<br>[3]***or AGEC 200 (3) Principles of Microeconomics (M)***<br>ECON 225 (3) Economics of the Environment<br>GEOG 302 (3) Environmental Management 1<br>[4]***GEOG 380 (3) Adaptive Environmental Management***<br>GEOG 408 (3) Geography of Development<br>GEOG 410 (3) Geography of Underdevelopment: Current Problems |
| 3 credits of field courses:<br>BIOL 331 (3) Ecology/Behaviour Field Course (at Mont St. Hilaire)<br>BIOL 334 (3) Applied Tropical Ecology (in Barbados)<br>BIOL 553 (3) Neotropical Environments (in Panama)<br>GEOG 495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)<br>GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)<br>GEOG 499 (3) Subarctic Field Studies (in Schefferville)<br>WILD 475 (3) Desert Ecology (in Arizona) | 3 credits of field courses:<br>BIOL 331 (3) Ecology/Behaviour Field Course (at Mont St. Hilaire)<br>BIOL 334 (3) Applied Tropical Ecology (in Barbados)<br>BIOL 553 (3) Neotropical Environments (in Panama)<br>GEOG 495 (3) Field Studies - Physical Geography (at Mont St. Hilaire)<br>GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy)<br>GEOG 499 (3) Subarctic Field Studies (in Schefferville)<br>WILD 475 (3) Desert Ecology (in Arizona) |
| 6 credits of general scientific principles:<br>ABEN 430 (3) GIS for Bioresource Management (M)<br>or GEOG 306 (3) Raster Geo-Information Science<br>BIOL 324 (3) Ecological Genetics<br>BIOL 341 (3) History of Life<br>BIOL 432 (3) Limnology<br>BIOL 441 (3) Biological Oceanography<br>BIOL 442 (3) Marine Biology<br>BIOL 505 (3) Diversity and Systematics Seminar<br>GEOG 272 (3) Earth's Changing Surface<br>GEOG 321 (3) Climatic Environments<br>GEOG 350 (3) Ecological Biogeography<br>MICR 331 (3) Microbial Ecology (M)<br>NRSC 437 (3) Assessing Environmental Impact (M)<br>PLNT 460 (3) Plant Ecology (M)<br>WILD 313 (3) Phylogeny and Zoogeography (M)<br>WILD 375 (3) Issues: Environmental Sciences (M)<br>WILD 410 (3) Wildlife Ecology (M)<br>WOOD 410 (3) The Forest Ecosystem (M)<br>WOOD 420 (3) Environmental Issues: Forestry (M)<br>(A second field course from the Domain curriculum may also be taken) | 6 credits of general scientific principles:<br>ABEN 430 (3) GIS for Bioresource Management (M)<br>or GEOG 306 (3) Raster Geo-Information Science<br>BIOL 324 (3) Ecological Genetics<br>BIOL 341 (3) History of Life<br>BIOL 432 (3) Limnology<br>BIOL 441 (3) Biological Oceanography<br>BIOL 442 (3) Marine Biology<br>BIOL 505 (3) Diversity and Systematics Seminar<br>GEOG 272 (3) Earth's Changing Surface<br>GEOG 321 (3) Climatic Environments<br>GEOG 350 (3) Ecological Biogeography<br>MICR 331 (3) Microbial Ecology (M)<br>NRSC 437 (3) Assessing Environmental Impact (M)<br>PLNT 460 (3) Plant Ecology (M)<br>WILD 313 (3) Phylogeny and Zoogeography (M)<br>WILD 375 (3) Issues: Environmental Sciences (M)<br>WILD 410 (3) Wildlife Ecology (M)<br>WOOD 410 (3) The Forest Ecosystem (M)<br>WOOD 420 (3) Environmental Issues: Forestry (M)<br>(A second field course from the Domain curriculum may also be taken) |

| | |
|---|---|
| 3 credits of social science:<br>AGEC 333 (3) Resource Economics (M)<br><br>ANTH 339 (3) Ecological Anthropology<br>ANTH 416 (3) Environment/Development: Africa (in Africa)<br>ECON 326 (3) Ecological Economics<br>ENVR 465 (3) Environment and Social Change (at Bay of Fundy)<br>GEOG 404 (3) Environmental Management 2 (in Panama)<br>GEOG 498 (3) Humans in Tropical Environments (in Panama)<br>GEOG 510 (3) Humid Tropical Environments<br>WILD 415 (2) Conservation Law (M)<br>(If this course is taken, 1 additional credit of complementary courses must be taken.)<br>WILD 421 (3) Wildlife Conservation (M)<br><br>6 credits, organisms and diversity:<br><br>BIOL 327 (3) Herpetology<br>BIOL 335 (3) Marine Mammals (at Bay of Fundy)<br>BIOL 350 (3) Insect Biology and Control<br>BIOL 358 (3) Canadian Flora<br>or PLNT 358 (3) Flowering Plant Diversity (M)<br>ENTO 352 (3) Control of Insect Pests (M)<br>ENTO 440 (3) Systematic Entomology (M)<br>ENVR 540 or BIOL 540 (3) Ecology of Species Invasions<br>PLNT 304 (3) Biology of Fungi (M)<br>PLNT 458 (3) Flowering Plant Systematics (M)<br>WILD 212 (3) Evolution and Systematics (M)<br>WILD 307 (3) Natural History of Vertebrates (M)<br>WILD 350 (3) Mammalogy (M)<br>WILD 420 (3) Ornithology (M)<br>WILD 424 (3) Parasitology (M) | 3 credits of social science:<br>AGEC 333 (3) Resource Economics (M)<br>[5]***AGRI 413 (3) Globalization: Issues of Change (in Barbados)***<br>ANTH 339 (3) Ecological Anthropology<br>ANTH 416 (3) Environment/Development: Africa (in Africa)<br>ECON 326 (3) Ecological Economics<br>ENVR 465 (3) Environment and Social Change (at Bay of Fundy)<br>GEOG 404 (3) Environmental Management 2 (in Panama)<br>GEOG 498 (3) Humans in Tropical Environments (in Panama)<br>GEOG 510 (3) Humid Tropical Environments<br>WILD 415 (2) Conservation Law (M)<br>(If this course is taken, 1 additional credit of complementary courses must be taken.)<br>WILD 421 (3) Wildlife Conservation (M)<br><br>6 credits, organisms and diversity:<br>[6]***AGRI 340 (3) Principles of Ecological Agriculture (M)***<br>BIOL 327 (3) Herpetology<br>BIOL 335 (3) Marine Mammals (at Bay of Fundy)<br>BIOL 350 (3) Insect Biology and Control<br>[7]~~BIOL 358 (3) Canadian Flora~~<br>~~or~~ PLNT 358 (3) Flowering Plant Diversity (M)<br>ENTO 352 (3) Control of Insect Pests (M)<br>ENTO 440 (3) Systematic Entomology (M)<br>ENVR 540 or BIOL 540 (3) Ecology of Species Invasions<br>PLNT 304 (3) Biology of Fungi (M)<br>PLNT 458 (3) Flowering Plant Systematics (M)<br>WILD 212 (3) Evolution and Systematics (M)<br>WILD 307 (3) Natural History of Vertebrates (M)<br>WILD 350 (3) Mammalogy (M)<br>WILD 420 (3) Ornithology (M)<br>WILD 424 (3) Parasitology (M) |

## 7.0 Consultation with Related Units

1. Graham Bell and David Green, Domain advisors
4. Garry Peterson, GEOG 380 instructor
5. Robert Bonnell, Barbados Field Study Semester Coordinator
6. Caroline Begg, AGRI 340 instructor

## 8.0 Rationale

1. ENVR 466 is being retired.
2. Dividing the list makes it clearer.
3. BIOL 358 is being retired by the Biology dept.
4. AGEC 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. GEOG 380 is a new course that is relevant to this section. It does not duplicate the content of GEOG 302 Environmental Management.

6. AGRI 413 is part of the Barbados Field Study Semester, and is relevant to this section.
7. AGRI 340 deals in part with species diversity and ecology in agricultural lands.

**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
Submission Date:

To be completed by ARR:

CIP Code: