



McGill



Program Revision Form

(09/2003)

AC-04-102

<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>Environmetrics</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 Category <i>Major Program</i></p> <p>1.5 Complete Program Title <i>B.Sc.; Environment; Environmetrics Domain</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 Revision: <i>200509</i> (eg. 200409)</p> <p>4.0 Existing Credit Weight: <i>63</i> Proposed Credit Weight: <i>63</i></p> <p>5.0 Description (150 words max) <i>no change to program description</i></p>
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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
<p>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</p> <p>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) ENVR 466 (6) Research in Atlantic Canada (at Bay of Fundy) * Only 3 credits will be applied to the program; extra credits will count as electives.</p> <p>Domain: Required Courses (6 credits) AEMA 403 (3) Environmetrics Stage (internship) (M) AEMA 414 (3) Temporal and Spatial Statistics (M)</p>	<p>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</p> <p>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) ¹ENVR 466 (6) Research in Atlantic Canada (at Bay of Fundy) * Only 3 credits will be applied to the program; extra credits will count as electives.</p> <p>Domain: Required Courses (6 credits) AEMA 403 (3) Environmetrics Stage (internship) (M) AEMA 414 (3) Temporal and Spatial Statistics (M)</p>

<p>Domain - Complementary Courses (36 credits, minimum) 15 credits from: WILD 205 (3) Principles of Ecology (M) or BIOL 308 (3) Ecological Dynamics MIME 308 (3) Social and Economic Impacts of Technology or NRSC 437 (3) Assessing Environmental Impact (M) AEMA 306 (3) Mathematical Methods in Ecology (M) or BIOL 309 (3) Mathematical Models in Biology ABEN 430 (3) GIS for Bioresource Management (M) or GEOG 201 (3) Introductory Geo-Information Science AEMA 411 (3) Experimental Designs (M) or CIVE 555 (3) Environmental Data Analysis</p> <p>3 credits of basic environmental science: ABEN 217 (3) Hydrology and Water Resources (M) CIVE 323 (3) Hydrology and Water Resources GEOG 305 (3) Soils and Environment GEOG 322 (3) Environmental Hydrology GEOG 350 (3) Ecological Biogeography SOIL 210 (3) Principles of Soil Science (M)</p> <p>6 credits of Statistics, one of the following two options: Option 1: MATH 323 (3) Probability Theory MATH 324 (3) Statistics Option 2: AEMA 310 (3) Statistical Methods 1 (M) or BIOL 373 (3) Biometry plus one 3-credit complementary applied statistics course of the statistics and mathematics section.</p> <p>6 credits of statistics and mathematics chosen from:</p> <p>ABEN 252 (3) Computing for Engineers (or equivalent) (M) ABEN 319 (3) Engineering Mathematics (or equivalent) (M) GEOG 351 (3) Quantitative Methods GEOG 501 (3) Modelling Environmental Systems MATH 223 (3) Linear Algebra</p> <p>MATH 423 (3) Regression and Analysis of Variance MATH 447 (3) Stochastic Processes MATH 525 (4) Sampling Theory and Applications SOC 461 (3) Quantitative Data Analysis SOC 504 (3) Quantitative Methods 1 SOC 505 (3) Quantitative Methods 2 SOC 580 (3) Social Research Design and Practice.</p> <p>6 credits, minimum, of environmental sciences chosen from:</p> <p>AGRI 550 (3) Sustained Tropical Agriculture (in Panama) BIOL 331 (3) Ecology/Behavior Field Course (at Mont St. Hilaire) BIOL 553 (3) Neotropical Environments (in Panama) GEOG 300 (3) Human Ecology in Geography</p>	<p>Domain - Complementary Courses (36 credits, minimum) 15 credits from: WILD 205 (3) Principles of Ecology (M) or BIOL 308 (3) Ecological Dynamics MIME 308 (3) Social and Economic Impacts of Technology or NRSC 437 (3) Assessing Environmental Impact (M) AEMA 306 (3) Mathematical Methods in Ecology (M) or BIOL 309 (3) Mathematical Models in Biology ABEN 430 (3) GIS for Bioresource Management (M) or GEOG 201 (3) Introductory Geo-Information Science AEMA 411 (3) Experimental Designs (M) or CIVE 555 (3) Environmental Data Analysis</p> <p>3 credits of basic environmental science: ABEN 217 (3) Hydrology and Water Resources (M) CIVE 323 (3) Hydrology and Water Resources GEOG 305 (3) Soils and Environment GEOG 322 (3) Environmental Hydrology GEOG 350 (3) Ecological Biogeography SOIL 210 (3) Principles of Soil Science (M)</p> <p>6 credits of Statistics, one of the following two options: Option 1: MATH 323 (3) Probability Theory MATH 324 (3) Statistics Option 2: AEMA 310 (3) Statistical Methods 1 (M) or BIOL 373 (3) Biometry plus one 3-credit complementary applied statistics course of the statistics and mathematics section.</p> <p>⁴12 credits total chosen from the following two lists: 6 credits 3 credits, minimum, of statistics and mathematics chosen from: ABEN 252 (3) Computing for Engineers (or equivalent) (M) ABEN 319 (3) Engineering Mathematics (or equivalent) (M) GEOG 351 (3) Quantitative Methods GEOG 501 (3) Modelling Environmental Systems MATH 223 (3) Linear Algebra ²MATH 326 (3) Nonlinear Dynamics and Chaos MATH 423 (3) Regression and Analysis of Variance MATH 447 (3) Stochastic Processes MATH 525 (4) Sampling Theory and Applications SOC 461 (3) Quantitative Data Analysis SOC 504 (3) Quantitative Methods 1 SOC 505 (3) Quantitative Methods 2 SOC 580 (3) Social Research Design and Practice.</p> <p>⁴6 credits 3 credits, minimum, of environmental sciences chosen from: ³AGRI 452 (3) Water Resources in Barbados (in Barbados) AGRI 550 (3) Sustained Tropical Agriculture (in Panama) BIOL 331 (3) Ecology/Behavior Field Course (at Mont St. Hilaire) BIOL 553 (3) Neotropical Environments (in Panama) GEOG 300 (3) Human Ecology in Geography</p>
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<p>GEOG 302 (3) Environmental Management 1 GEOG 404 (3) Environmental Management 2 (in Panama) GEOG 494 (3) Urban Field Studies GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy) GEOG 499 (3) Subarctic Field Studies (in Schefferville) MIME 451 (3) Environmental Controls: Met'l Plants NRSC 333 (3) Physical and Biological Aspects of Pollution (M) PLNT 460 (3) Plant Ecology (M) WILD 313 (3) Phylogeny and Zoogeography (M) WILD 401 (4) Fisheries and Wildlife Management (M) WOOD 300 (3) Urban Forests and Trees (M) WOOD 420 (3) Environmental Issues: Forestry (M)</p>	<p>GEOG 302 (3) Environmental Management 1 GEOG 404 (3) Environmental Management 2 (in Panama) GEOG 494 (3) Urban Field Studies GEOG 497 (3) Ecology of Coastal Waters (at Bay of Fundy) GEOG 499 (3) Subarctic Field Studies (in Schefferville) MIME 451 (3) Environmental Controls: Met'l Plants NRSC 333 (3) Physical and Biological Aspects of Pollution (M) PLNT 460 (3) Plant Ecology (M) WILD 313 (3) Phylogeny and Zoogeography (M) WILD 401 (4) Fisheries and Wildlife Management (M) WOOD 300 (3) Urban Forests and Trees (M) WOOD 420 (3) Environmental Issues: Forestry (M)</p>
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7.0 Consultation with Related Units

- 2, 4. Pierre Dutilleul, Domain Advisor
- 3. Robert Bonnell, Barbados Field Study Semester Coordinator

8.0 Rationale

- 1. ENVR 466 is being retired.
- 2. An understanding of chaotic behavior is useful when modeling complex environmental processes.
- 3. AGRI 452 is part of the Barbados Field Study Semester, and is relevant to this section.
- 4. This allows students to concentrate more on mathematics and statistics or on environmental sciences, if they wish. The credit total remains the same.

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

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Submission Date:

To be completed by ARR:

CIP Code: