



<p>1.0 Degree Title Specify the two degrees for concurrent degree programs</p> <p>B.Science</p> <p>1.1 Major (Legacy= Subject) (30-char. max.) Environment</p> <p>1.2 Concentration (Legacy = Concentration/Option) If applicable (30 char. max.) Ecol. Det. of Health – Cellular stream</p> <p>1.3 Minor (with Concentration, if applicable) (30 char. max.)</p> <p>1.4 Category</p> <table border="0"> <tr> <td><input type="checkbox"/> Faculty Program (FP)</td> <td><input type="checkbox"/> Honours (HON)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Major</td> <td><input type="checkbox"/> Joint Honours Component (HC)</td> </tr> <tr> <td><input type="checkbox"/> Joint Major</td> <td><input type="checkbox"/> Internship/Co-op</td> </tr> <tr> <td><input type="checkbox"/> Major Concentration (CON)</td> <td><input type="checkbox"/> Thesis (T)</td> </tr> <tr> <td><input type="checkbox"/> Minor</td> <td><input type="checkbox"/> Non-Thesis (N)</td> </tr> <tr> <td><input type="checkbox"/> Minor Concentration (CON)</td> <td><input type="checkbox"/> Other</td> </tr> </table> <p style="margin-left: 200px;">Please specify</p> <p>1.5 B.Sc. Major Environment, Ecological Determinants of Health (Cellular) domain</p>	<input type="checkbox"/> Faculty Program (FP)	<input type="checkbox"/> Honours (HON)	<input checked="" type="checkbox"/> Major	<input type="checkbox"/> Joint Honours Component (HC)	<input type="checkbox"/> Joint Major	<input type="checkbox"/> Internship/Co-op	<input type="checkbox"/> Major Concentration (CON)	<input type="checkbox"/> Thesis (T)	<input type="checkbox"/> Minor	<input type="checkbox"/> Non-Thesis (N)	<input type="checkbox"/> Minor Concentration (CON)	<input type="checkbox"/> Other	<p>2.0 Administering Faculty/Unit</p> <p>Faculty of Agricultural & Environmental Sciences</p> <p>Offering Faculty/Department</p> <p>McGill School of Environment</p> <p>3.0 Effective Term of revision or retirement Please give reasons in 8.0 "Rationale" in the case of retirement (Ex. Sept. 2004 = 200409)</p> <p>Term</p> <p>Fall 2016</p> <p>4.0 Existing Credit Weight Proposed Credit Weight</p> <p>63 credits 63 credits</p> <p>5.0 Description (Maximum 150 words)</p> <p>Minor revisions to bring course sets up to date</p>
<input type="checkbox"/> Faculty Program (FP)	<input type="checkbox"/> Honours (HON)												
<input checked="" type="checkbox"/> Major	<input type="checkbox"/> Joint Honours Component (HC)												
<input type="checkbox"/> Joint Major	<input type="checkbox"/> Internship/Co-op												
<input type="checkbox"/> Major Concentration (CON)	<input type="checkbox"/> Thesis (T)												
<input type="checkbox"/> Minor	<input type="checkbox"/> Non-Thesis (N)												
<input type="checkbox"/> Minor Concentration (CON)	<input type="checkbox"/> Other												

6.0 List of existing program and proposed program

<p>Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)</p>	<p>Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)</p>
<p>See: bsc_bscagenvsc_EDH-CellularATTACHMENT_July 2015(2).doc</p>	

7.0 Consultation with Related Units

Yes No

Financial Consult Yes No

Attach list of consultations.

8.0 Rationale

Minor revisions are needed to bring the domain up-to-date (to add new courses, to remove courses that are retired or have not been offered recently).

9.0 Approvals

Routing Sequence	Name	Signature	Date
Department	Jaye Ellis, Acting Director, MSE		
Curric/Acad Committee	Kevin Manaugh, Chair, Undergrad Affairs		
Faculty 1			
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

Submitted by

To be completed by ARR:

Name	<input type="text"/>	CIP Code
Phone	<input type="text"/>	
Email	<input type="text"/>	
Submission Date	<input type="text"/>	

bsc_bscagenvsc_EDH-CellularATTACHMENT_July 2015(2)

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(bsc_environment_EDH-cellular_revision_2015.doc)

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Course list

Deleted courses shown as ~~strikeout~~, added courses or other changes are shown as underlined italics.

Numbers in ¹superscript refer to comments in the rationale.

<p>This domain (63 credits including core) is open only to students in the B.Sc. (Ag.Env.Sc.) Major Environment or B.Sc. Major Environment programs.</p>	<p>This domain (63 credits including core) is open only to students in the B.Sc. (Ag.Env.Sc.) Major Environment or B.Sc. Major Environment programs.</p>
<p>Program Requirements 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. Location Note: When planning their schedule and registering for courses, you should verify where each course is offered because courses for this program are taught at both McGill's Downtown campus and at the Macdonald campus in Sainte-Anne-de-Bellevue.</p>	<p>Program Requirements ¹ Note: Students are required to take a maximum of <u>33</u> 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. Location Note: When planning their schedule and registering for courses, you should verify where each course is offered because courses for this program are taught at both McGill's Downtown campus and at the Macdonald campus in Sainte-Anne-de-Bellevue.</p>
<p>Core: Required Courses (18 credits) Location Note: Core required courses are taught at both McGill's Downtown campus and at the Macdonald campus in Sainte-Anne-de-Bellevue. You should register in Section 001 of an ENVR course that you plan to take on the Downtown campus, and in Section 051 of an ENVR course that you plan to take on the Macdonald campus.</p>	<p>Core: Required Courses (18 credits) Location Note: Core required courses are taught at both McGill's Downtown campus and at the Macdonald campus in Sainte-Anne-de-Bellevue. You should register in Section 001 of an ENVR course that you plan to take on the Downtown campus, and in Section 051 of an ENVR course that you plan to take on the Macdonald campus.</p>
<p>ENVR 200 (3) The Global Environment ENVR 201 (3) Society, Environment and Sustainability 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>ENVR 200 (3) The Global Environment ENVR 201 (3) Society, Environment and Sustainability 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) Only 3 credits will be applied to the program; extra credits will count as electives.</p>	<p>Core: Complementary Course - Senior Research Project (3 credits) Only 3 credits will be applied to the program; extra credits will count as electives.</p>
<p>AGRI 519 (6) Sustainable Development Plans ENVR 401 (3) Environmental Research ENVR 451 (6) Research in Panama</p>	<p>² <u><i>AEBI 427 (6) Barbados Interdisciplinary Project</i></u> AGRI 519 (6) Sustainable Development Plans ENVR 401 (3) Environmental Research ENVR 451 (6) Research in Panama</p>
<p>Domain: Required Course (3 credits) PARA 410 (3) Environment and Infection</p>	<p>³ Domain: Required Course (3 <u>6</u> credits) PARA 410 (3) Environment and Infection ³ <u><i>GEOG 403 (3) Global Health and Environmental Change</i></u></p>

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<p>Domain: Complementary Courses (39 credits) 39 credits of complementary courses are selected as follows: 21 credits – Fundamentals, 3 credits from each category 12 credits – Human Health, maximum of 3 credits from any one category 6 credits – Natural Environment, maximum of 3 credits from any one category</p> <p>Fundamentals 21 credits of Fundamentals, 3 credits from each category</p> <p>Health, Society and Environment *Note: You may take GEOG 221 or NRSC 221, but not both. GEOG 221* (3) Environment and Health GEOG 303 (3) Health Geography NRSC 221* (3) Environment and Health SOC1 234 (3) Population and Society SOC1 309 (3) Health and Illness SOC1 331 (3) Population and Environment</p> <p>Toxicology ANSC 312 (3) Animal Health and Disease PHAR 303 (3) Principles of Toxicology</p> <p>Cellular Biology ANSC 234 (3) Biochemistry 2 BIOL 201 (3) Cell Biology and Metabolism LSCI 202 (3) Molecular Cell Biology</p> <p>Genetics BIOL 202 (3) Basic Genetics LSCI 204 (3) Genetics</p>	<p>³ Domain: Complementary Courses (39 <u>36</u> credits) 39 <u>36</u> credits of complementary courses are selected as follows: ³ 18 credits – Fundamentals, 3 credits from each category 12 credits – Human Health, maximum of 3 credits from any one category 6 credits – Natural Environment, maximum of 3 credits from any one category</p> <p>Fundamentals ³ 24 <u>18</u> credits of Fundamentals, 3 credits from each category</p> <p>Health, Society and Environment *Note: You may take GEOG 221 or NRSC 221, but not both. ⁴ <u>PPHS 529 (3) Global Environmental Health and Burden of Disease</u> GEOG 221* (3) Environment and Health GEOG 303 (3) Health Geography ⁴ <u>GEOG 503 (3) Advanced Topics in Health Geography</u> NRSC 221* (3) Environment and Health SOC1 234 (3) Population and Society SOC1 309 (3) Health and Illness SOC1 331 (3) Population and Environment</p> <p>³ Toxicology ANSC 312 (3) Animal Health and Disease PHAR 303 (3) Principles of Toxicology</p> <p>Cellular Biology ⁵ <u>*Note: You will not receive credit for either LSCI 211 or LSCI 202 if you have already received credit for both BIOL 200 and BIOL 201; you will not receive credit for either BIOL 200 or BIOL 201 if you have already received credit for both LSCI 202 and LSCI 211.</u> ANSC 234 (3) Biochemistry 2 BIOL 201 (3) Cell Biology and Metabolism LSCI 202 (3) Molecular Cell Biology</p> <p>Genetics BIOL 202 (3) Basic Genetics LSCI 204 (3) Genetics</p>
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<p>Molecular Biology BIOL 200 (3) Molecular Biology LSCI 211 (3) Biochemistry 1</p> <p>Statistics One of the following Statistics courses or equivalent: *Note: Credit given for Statistics courses is subject to certain restrictions. Students in Science should consult the "Course Overlap" information in the "Course Requirements" section for the Faculty of Science. AEMA 310 (3) Statistical Methods 1 MATH 203 (3) Principles of Statistics 1</p> <p>Nutrition *Note: NUTR 307 – Video conference Downtown and at the Macdonald campus. ANSC 330 (3) Fundamentals of Nutrition NUTR 307 (3) Human Nutrition</p> <p>Human Health: 12 credits chosen from Human Health, maximum of 3 credits from any one category:</p> <p>Immunology and Pathogenicity MICR 341 (3) Mechanisms of Pathogenicity MIMM 214 (3) Introductory Immunology: Elements of Immunity PARA 438 (3) Immunology PATH 300 (3) Human Disease</p> <p>Infectious Disease ANSC 400 (3) Eukaryotic Cells and Viruses MIMM 324 (3) Fundamental Virology MIMM 413 (3) Parasitology WILD 424 (3) Parasitology</p>	<p>Molecular Biology ⁵ <u>*Note: You will not receive credit for either LSCI 211 or LSCI 202 if you have already received credit for both BIOL 200 and BIOL 201; you will not receive credit for either BIOL 200 or BIOL 201 if you have already received credit for both LSCI 202 and LSCI 211.</u> BIOL 200 (3) Molecular Biology LSCI 211 (3) Biochemistry 1</p> <p>Statistics One of the following Statistics courses or equivalent: *Note: Credit given for Statistics courses is subject to certain restrictions. Students in Science should consult the "Course Overlap" information in the "Course Requirements" section for the Faculty of Science. AEMA 310 (3) Statistical Methods 1 MATH 203 (3) Principles of Statistics 1</p> <p>Nutrition ¹² *Note: NUTR 307 – Video conference Downtown and at the Macdonald campus. ANSC 330 (3) Fundamentals of Nutrition ⁴ <u>ANSC 433 (3) Animal Nutrition and Metabolism</u> NUTR 307 (3) Human Nutrition ⁴ <u>NUTR 207 (3) Nutrition and Health</u></p> <p>Human Health: 12 credits chosen from Human Health, maximum of 3 credits from any one category:</p> <p>Immunology and Pathogenicity MICR 341 (3) Mechanisms of Pathogenicity MIMM 214 (3) Introductory Immunology: Elements of Immunity ⁴ <u>MIMM 314 (3) Intermediate Immunology</u> PARA 438 (3) Immunology PATH 300 (3) Human Disease</p> <p>Infectious Disease ⁸ <u>*Note: You can take MIMM 413 or WILD 424, but not both.</u> ANSC 400 (3) Eukaryotic Cells and Viruses MIMM 324 (3) Fundamental Virology ⁸ MIMM 413* (3) Parasitology ⁴ <u>PPHS 501 (3) Population Health and Epidemiology</u> ⁸ WILD 424* (3) Parasitology</p>
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<p>Nutrition NUTR 403 (3) Nutrition in Society NUTR 512 (3) Herbs, Food and Phytochemicals</p> <p>Drugs and Hormones ANSC 424 (3) Metabolic Endocrinology PHAR 300 (3) Drug Action</p> <p>Physiology ANSC 323 (3) Mammalian Physiology PHGY 209 (3) Mammalian Physiology 1</p> <p>Natural Environment 6 credits chosen from the Natural Environment, maximum of 3 credits from any one category:</p> <p>Hydrology and Climate *Note: You may take BREE 217 or GEOG 322, but not both. AGRI 452 (3) Water Resources in Barbados BREE 217* (3) Hydrology and Water Resources GEOG 321 (3) Climatic Environments GEOG 322* (3) Environmental Hydrology NRSC 510 (3) Agricultural Micrometeorology</p> <p>Techniques and Management BREE 322 (3) Organic Waste Management CHEE 230 (3) Environmental Aspects of Technology ENVB 437 (3) Assessing Environmental Impact GEOG 302 (3) Environmental Management 1</p>	<p>⁷ Nutrition NUTR 403 (3) Nutrition in Society NUTR 512 (3) Herbs, Food and Phytochemicals</p> <p>³ Toxicology ANSC 312 (3) Animal Health and Disease ⁹ PHAR 300 (3) Drug Action PHAR 303 (3) Principles of Toxicology ⁷ NUTR 512 (3) Herbs, Food and Phytochemicals</p> <p>¹⁰ Drugs and Hormones ⁵ <u>*Note: You will not receive credit for ANSC 424 if you have already received credit for both PHGY 209 and PHGY 210; you will not receive credit for PHGY 210 if you have already received credit for both ANSC 323 and ANSC 424.</u></p> <p>ANSC 424 (3) Metabolic Endocrinology ⁹ PHAR 300 (3) Drug Action ⁴ <u>PHGY 210 (3) Mammalian Physiology 2</u> ⁴ <u>PSYC 342 Hormones and Behaviour</u></p> <p>Physiology ⁵ <u>*Note: You will not receive credit for either ANSC 323 if you have already received credit for both PHGY 209 and PHGY 210; you will not receive credit for PHGY 209 if you have already received credit for both ANSC 323 and ANSC 424.</u></p> <p>ANSC 323 (3) Mammalian Physiology PHGY 209 (3) Mammalian Physiology 1</p> <p>Natural Environment 6 credits chosen from the Natural Environment, maximum of 3 credits from any one category:</p> <p>Hydrology and Climate *Note: You may take BREE 217 or GEOG 322, but not both. AGRI 452 (3) Water Resources in Barbados BREE 217* (3) Hydrology and Water Resources GEOG 321 (3) Climatic Environments GEOG 322* (3) Environmental Hydrology ⁶ NRSC 510 (3) Agricultural Micrometeorology</p> <p>Techniques and Management ² <u>AEBI 423 (3) Sustainable Land Use</u> ¹¹ BREE 322 (3) Organic Waste Management CHEE 230 (3) Environmental Aspects of Technology ENVB 437 (3) Assessing Environmental Impact</p>
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<p>URBP 507 (3) Planning and Infrastructure</p> <p>Pest Management *Note: You may take BIOL 350 or ENTO 350, but not both. BIOL 350* (3) Insect Biology and Control ENTO 350* (3) Insect Biology and Control ENTO 352 (3) Biocontrol of Pest Insects</p> <p>Pollution Control and Management BREE 518 (3) Bio-Treatment of Wastes NRSC 333 (3) Pollution and Bioremediation</p> <p>Ecology *Note: You may take ENVR 540 or BIOL 540, but not both. BIOL 432 (3) Limnology BIOL 465 (3) Conservation Biology BIOL 540* (3) Ecology of Species Invasions BIOL 553 (3) Neotropical Environments ENVB 410 (3) Ecosystem Ecology ENVR 540* (3) Ecology of Species Invasions MICR 331 (3) Microbial Ecology PLNT 304 (3) Biology of Fungi PLNT 460 (3) Plant Ecology</p>	<p>⁴ <u>ENVR 422 (3) Montreal Urban Sustainability Analysis</u> GEOG 302 (3) Environmental Management 1 ⁴ <u>NUTR 450 (3) Research Methods: Human Nutrition</u> URBP 507 (3) Planning and Infrastructure ⁴ <u>Advanced Quantitative Methods Course (with approval of Adviser)</u></p> <p>Pest Management *Note: You may take BIOL 350 or ENTO 350, but not both. BIOL 350* (3) Insect Biology and Control ENTO 350* (3) Insect Biology and Control ENTO 352 (3) Biocontrol of Pest Insects</p> <p>Pollution Control and Management ¹¹ <u>BREE 322 (3) Organic Waste Management</u> BREE 518 (3) Bio-Treatment of Wastes NRSC 333 (3) Pollution and Bioremediation ⁴ <u>PARA 515 (3) Water, Health and Sanitation</u></p> <p>Ecology ⁸ *Note: You may take ENVR 540 or BIOL 540, but not both; <i>you may take BIOL 451 or NRSC 451, but not both.</i> ⁴ <u>AEFI 421 (3) Tropical Horticultural Ecology</u> BIOL 432 (3) Limnology ⁴ <u>BIOL 451 (3) Research in Ecology and Development in Africa</u> ⁸ BIOL 465* (3) Conservation Biology BIOL 540* (3) Ecology of Species Invasions BIOL 553 (3) Neotropical Environments ENVB 410 (3) Ecosystem Ecology ENVR 540* (3) Ecology of Species Invasions MICR 331 (3) Microbial Ecology ⁴ <u>NRSC 451 (3) Research in Ecology and Development in Africa</u> PLNT 304 (3) Biology of Fungi PLNT 460 (3) Plant Ecology</p>
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RATIONALE FOR CHANGES:

¹ Whichever 4 cr course it was that necessitated an extra 1 cr to this limit, is no longer in the program. Credit limit has been revised to be slightly larger than other domains (11 courses instead of 10 courses) because of the large number of 200-level Fundamentals (especially for Faculty of Science students)

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² The courses in the B.I.T.S. (Barbados Interdisciplinary Tropical Studies) field study semester have been added as complementary courses in this domain where appropriate (3 of the 4 courses added -- AEBI 421, AEBI 423, AEBI 427). In addition, one of the context courses (BIOL 451/NRSC 451) of the Africa Field Study Semester (AFSS), which is offered regularly every year, has been added.

³ The addition of GEOG 403 as a required course in this domain has required some category adjustments (Toxicology moved from Fundamentals (required) to Human Health (complementary)) and has necessitated some credit balance adjustments.

⁴ In addition to the course additions described in points 2 and 3 the following new courses were added to complementary course sections: ANSC 433, ENVR 422, GEOG 503, MIMM 314, NUTR 207, NUTR 450, PARA 515, PHGY 210, PPHS 501, PPHS 529, PSYC 342

⁵ Notes added to clarify the relationships between (BIOL 200 + BIOL 201) and (LSCI 202 + LSCI 211); and (ANSC 323 + ANSC 424) and (PHGY 209 + PHGY 210)

⁶ Removed from complementary course lists because they are either retired or infrequently offered: ANSC 330, NRSC 510 ; or because the hidden pre-requisites make them unrealistic to take: NUTR 403

⁷ NUTR 512 moved to Toxicology category (now in Human Health section) as NUTR 403 has been removed altogether (because of hidden pre-reqs); Nutrition category in Human Health section deleted.

⁸ Note added to make clear that students will not receive credit for both.

⁹ PHAR 300 moved to Toxicology category

¹⁰ Name of category revised to better reflect new focus – on hormones, the endocrine system and physiology – this structure also allows students *the option* of acquiring pairs of pre-reqs needed for upper level courses (see note #5)

¹¹ Moved BREE 322 to Pollution Control & Management category, where it is better suited.

¹² NUTR 307 no longer videoconferenced