M.G.I.S.c. of En i v t n

Pr g n C u e d R g

2012-2013

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Note: Throughout this publication, "you" refers to students newly admitted, readmitted or returning to McGill.

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1 About the McGill School of Environment

McGill's Faculties of Agricultural and Environmental Sciences, Arts, Science, and Law have forged a unique approach to the study of environment through the inter-faculty, trans-disciplinary McGill School of Environment (MSE).

The growth of technology, globalizing economies, and rapid increase in population have had dramatic and significant environmental impacts. These changes have been accompanied by an increasing awareness of the relationship between human activity and the environment. Environmental problems range from local and short-term degradation through to the perturbation observed over the entire globe and for many years. The importance of human-environment relations for environmental and social well-being, and the complexity and conflict involved in environmental analysis and decision making, requires a depth and breadth of knowledge. The MSE has developed its programs with the approach of introducing students to a broad range of ideas early in the program to provide a foundation and an openness upon which more specialized, disciplinary knowledge can be built.

2 Mission of the School

The mission of the McGill School of Environment is:

to pro

Diploma in Environment

section 15.1 Diploma in Environment (30 credits)

4 About the School

The people and the programs of the McGill School of Environment are described in the following sections.

4.1 Location

For advising, contact:

Program Adviser, Ms. Kathy Roulet
Telephone: 514-398-4306
Fax: 514-398-1643
Email: kathy.roulet@mcgill.ca

Website: www.mcgill.ca/mse

Downtown Campus
3534 University Street
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Telephone: 514-398-2827
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Macdonald Campus
Rowles House
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, Quebec H9X 3V9
Telephone: 514-398-7559
Fax: 514-398-7846

4.2 Academic Officers

Administrative Officers	
Chandra Madramootoo; B.Sc.(Agr.Eng.), M.Sc., Ph.D.(McG.)	Dean, Faculty of Agricultural and Environmental Sciences
Christopher Manfredi; B.A.(Calg.), M.A., Ph.D.(Claremont)	Dean, Faculty of Arts
Daniel Jutras; LL.B.(Mont.), LL.M.(Harv.)	Dean, Faculty of Law
Martin Grant; B.Sc.(PEI), M.Sc., Ph.D.(Tor.)	Dean, Faculty of Science
Marilyn Scott; B.Sc.(New Br.), Ph.D.(McG.)	Director
Sylvie de Blois; B.Sc.(Agr.)(McG.), M.Sc., Ph.D.(Mont.)	Associate Director, Graduate Affairs
George McCourt; B.Sc., M.Sc.(Alta.), M.Sc.(McG.)	Associate Director, Undergraduate Affairs
	Associate Director, Newsea

Professors

Colin Chapman; B.Sc., M.A., Ph.D.(Alta.) (Joint appt. with Anthropology)

Associate Professors

To be eligible for a B.Sc.(Ag.Env.Sc.) degree, you must fulfil all the faculty and program requirements as indicated in Programs, Courses and University Regulations> Faculties & Schools> Faculty of Agricultural and Environmental Sciences> Undergraduate> : Degree Requirements

To be eligible for a B.Sc. degree, you must fulfil all the faculty and program requirements as indicated in Programs, Courses and University Regulations>

Students, after consulting with their adviser in their major program or concentration and the MSE Program Adviser, can declare their intention to do a Minor in Environment.

To obtain a Minor in Environment, students must:

- register for the Minor online, using MineralMap;
- submit their program of courses already taken and to be taken for the Minor in Environment to the MSE Program Adviser for approval (only courses at the 200 level and above will be approved);
- pass all courses counted toward the Minor with a grade of C or higher;
- complete 18 credits from the courses listed under section 8.1 Bachelor of Arts (B.A.) - Minor Concentration Environment (18 credits) or section 8.2 Bachelor of Science (Agricultural and Environmental Sciences) (B.Sc.(Ag.Env.Sc.)) or Bachelor of Science (B.Sc.) - Minor Concentration Environment (18 credits) in this publication and which are not otherwise counted towards the student's major program or concentration or a second minor program; and
- ensure that all 18 credits are taken outside the discipline or field of the student's major program or concentration.

* Note: If WILD 415 is taken, 1 additional credit of complementary courses must be taken.

AGEC 231	(3)	Economic Systems and Agriculture
AGEC 333	(3)	Resource Economics
AGEC 430	(3)	Agriculture, Food and Resource Policy
AGEC 442	(3)	Economics of International Agricultural Development
AGRI 210	(3)	Agro-Ecological History
AGRI 411	(3)	Global Issues on Development, Food and Agriculture
ANTH 206	(3)	Environment and Culture
ANTH 212	(3)	Anthropology of Development
ANTH 339	(3)	Ecological Anthropology
ANTH 512	(3)	Political Ecology
BREE 503	(3)	Water: Society, Law and Policy
CIVE 433	(3)	Urban Planning
ECON 205	(3)	An Introduction to Political Economy
ECON 225	(3)	Economics of the Environment
ECON 326	(3)	Ecological Economics
ECON 347	(3)	Economics of Climate Change
ECON 405	(3)	Natural Resource Economics
ENVB 437	(3)	Assessing Environmental Impact
ENVR 201	(3)	Society, Environment and Sustainability
ENVR 203	(3)	Knowledge, Ethics and Environment
ENVR 400	(3)	Environmental Thought
GEOG 200	(3)	Geographical Perspectives: World Environmental Problems
GEOG 210	(3)	Global Places and Peoples
GEOG 216	(3)	Geography of the World Economy
GEOG 221	(3)	Environment and Health
GEOG 300	(3)	Human Ecology in Geography
GEOG 301	(3)	Geography of Nunavut
GEOG 302	(3)	Environmental Management 1
GEOG 303	(3)	Health Geography
GEOG 370	(3)	Protected Areas
GEOG 382	(3)	Principles Earth Citizenship
GEOG 403	(3)	Global Health and Environmental Change
GEOG 408	(3)	Geography of Development
GEOG 410	(3)	Geography of Underdevelopment: Current Problems
GEOG 508	(3)	Resources, People and Power
GEOG 530	(3)	Global Land and Water Resources
GEOG 551	(3)	Environmental Decisions
MGPO 440	(3)	Strategies for Sustainability
NRSC 221	(3)	Environment and Health
NRSC 540	(3)	Socio-Cultural Issues in Water
PHIL 230	(3)	Introduction to Moral Philosophy 1
PHIL 237	(3)	Contemporary Moral Issues

PHIL 334	(3)	Ethical Theory
PHIL 343	(3)	Biomedical Ethics
PHIL 348	(3)	Philosophy of Law 1
POLI 211	(3)	Comparative Government and Politics
POLI 212	(3)	Government and Politics - Developed World
POLI 227	(3)	Developing Areas/Introduction
POLI 345	(3)	International Organizations
POLI 445	(3)	International Political Economy: Monetary Relations
POLI 466	(3)	Public Policy Analysis
PSYC 215	(3)	Social Psychology
RELG 270	(3)	Religious Ethics and the Environment
RELG 340	(3)	Religion and the Sciences
RELG 370	(3)	Religion and Human Rights
RELG 376	(3)	Religious Ethics
SOCI 222	(3)	Urban Sociology
SOCI 234	(3)	Population and Society
SOCI 235	(3)	Technology and Society
SOCI 254	(3)	Development and Underdevelopment
SOCI 386	(3)	Contemporary Social Movements
URBP 201	(3)	Planning the 21st Century City
URBP 506	(3)	Environmental Policy and Planning
URBP 530	(3)	Urban Environmental Planning
WILD 415*	(2)	Conservation Law

Natural Science and Technology

** Note: you may take MIMM 211 or LSCI 230, but not both; you may take ENVB 315 or BIOL 432, but not both; you may take BIOL 308 or ENVB 305, but not both.

AGRI 340	(3)	Principles of Ecological Agriculture
AGRI 435	(3)	Soil and Water Quality Management
ANSC 326	(3)	Fundamentals of Population Genetics
ANTH 311	(3)	Primate Behaviour and Ecology
ARCH 375	(2)	Landscape
ARCH 377	(3)	Energy, Environment and Buildings
ARCH 378	(3)	Site Usage
ATOC 215	(3)	Oceans, Weather and Climate
BIOL 240	(3)	Montereginian Flora
BIOL 305	(3)	Animal Diversity
BIOL 308**	(3)	Ecological Dynamics
BIOL 310	(3)	Biodiversity and Ecosystems
BIOL 342	(3)	Marine Biology
BIOL 418	(3)	Freshwater Invertebrate Ecology
BIOL 432**	(3)	Limnology
BIOL 436	(3)	Evolution and Society

BIOL 465	(3)	Conservation Biology
BREE 217	(3)	Hydrology and Water Resources
BREE 322	(3)	Organic Waste Management
		Bio-Treatment of

MIMM 324	(3)	Fundamental Virology
NRSC 333	(3)	Pollution and Bioremediation
NRSC 340	(3)	Global Perspectives on Food
NRSC 510	(3)	Agricultural Micrometeorology
NRSC 514	(3)	Freshwater Ecosystems
PARA 410	(3)	Environment and Infection
PARA 515	(3)	Water, Health and Sanitation
PLNT 304	(3)	Biology of Fungi
PLNT 305	(3)	Plant Pathology
PLNT 358	(3)	Flowering Plant Diversity
PLNT 426	(3)	Plant Ecophysiology
PLNT 460	(3)	Plant Ecology
SOIL 300	(3)	Geosystems
WILD 421	(3)	Wildlife Conservation

8.2 Bachelor of Science (Agricultural and Environmental Sciences) - Minor in Environment (18 credits)

This 18-credit Minor is intended for Faculty of Agricultural and Environmental Science students and for Faculty of Science students, but is open to students from other faculties as well, except Arts and Law.

Adviser Note

Consultation with the Program Adviser for approval of course selection to meet program requirements is mandatory. Only courses at the 200 level and above will be approved.

For information about the Minor in Environment, contact:

Ms. Kathy Roulet, MSE Program Adviser

Email: kathy.roulet@mcgill.ca

Telephone: 514-398-4306

Complementary Courses (18 credits)

18 credits of complementary courses are selected as follows:

12 credits of MSE core courses:

Location Note: MSE core 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 at the Downtown campus, and in Section 051 of an ENVR course that you plan to take at the Macdonald campus.

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 400	(3)	Environmental Thought

6 credits of environmentally related courses selected with the approval of the Program Adviser (at least 3 credits must be in social sciences). A list of Suggested Courses is given below.

Suggested Course List

The Suggested Course List is divided into two thematic categories: Social Sciences and Policy, and Natural Sciences and Technology.

Most courses listed at the 300 level and higher have prerequisites.

GEOG 530	(3)	Global Land and Water Resources
GEOG 551	(3)	Environmental Decisions
MGPO 440	(3)	Strategies for Sustainability
NRSC 221	(3)	Environment and Health
NRSC 540	(3)	Socio-Cultural Issues in Water
PHIL 230	(3)	Introduction to Moral Philosophy
PHIL 237	(3)	Contemporary Moral Issues
PHIL 334	(3)	Ethical Theory

BIOL 240	(3)	Montereg ian Flora
BIOL 305	(3)	Animal Diversity
BIOL 308*	(3)	Ecological Dynamics
BIOL 310	(3)	Biodiversity and Ecosystems
BIOL 342	(3)	Marine Biology
BIOL 418	(3)	Freshw ater In vertebrate Ecology
BIOL 432*	(3)	Limnology
BIOL 436	(3)	Evolution and Society
BIOL 465	(3)	Conserv ation Biology
BREE 217*	(3)	Hydrology and Water Resources
BREE 322	(3)	Org anic Waste Management
BREE 518	(3)	Bio-Treatment of Wastes
BTEC 502	(3)	Biotechnology Ethics and Society
CHEE 230	(3)	Env ironmental Aspects of Technology
CHEM 212	(4)	Introductory Org anic Chemistry 1
CHEM 281	(3)	Inorg anic Chemistry 1
CHEM 462	(3)	Green Chemistry
CIVE 225	(4)	Env ironmental Engineering
CIVE 323	(3)	Hydrology and Water Resources
CIVE 550	(3)	Water Resources Management
ENTO 340	(3)	Field Entomology
ENVB 210	(3)	The Biophysical Env ironment
ENVB 301	(3)	Meteorology
ENVB 305*	(3)	Population & Community Ecology
ENVB 315*	(3)	Science of Inland Waters
ENVB 410	(3)	Ecosystem Ecology
ENVB 415	(3)	Ecosystem Management
ENVB 430*	(3)	GIS for Natural Resource Management
		The Global En

GEOG 470	(3)	Wetlands
LSCI 230*	(3)	Introductory Microbiology
MICR 331	(3)	Microbial Ecology
MIME 308	(3)	Social Impact of Technology
MIME 320	(3)	Extraction of Energy Resources
MIMM 211*	(3)	Introductory Microbiology
MIMM 214	(3)	Introductory Immunology: Elements of Immunity
MIMM 323	(3)	Microbial Physiology
MIMM 324	(3)	Fundamental Virology
NRSC 333	(3)	Pollution and Bioremediation
NRSC 340	(3)	Global Perspectives on Food
NRSC 510	(3)	Agricultural Micrometeorology
NRSC 514	(3)	Freshwater Ecosystems
PARA 410	(3)	Environment and Infection
PARA 515	(3)	Water, Health and Sanitation
PLNT 304	(3)	Biology of Fungi
PLNT 305	(3)	Plant Pathology
PLNT 358	(3)	Flowering Plant Diversity
PLNT 426	(3)	Plant Ecophysiology
PLNT 460	(3)	Plant Ecology
SOIL 300	(3)	Geosystems
WILD 421	(3)	Wildlife Conservation

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9 B.A. F P g E n i t n

The B.A. Faculty Program has two components: Core and Domain. Students follow three steps in their degree program.

1. Core: The Core consists of four introductory courses and one intermediate-level course where students are exposed to the different approaches, perspectives, and world views that will help them gain an understanding of the complexity and con icts that underlie most environmental problems. Through the core program, students grow to know the con nes of their individual views of environment.
2. Domain: Domains provide a trans-disciplinary study of a particular theme or component of the environment. You can choose to follow one of three domains within the B.A. Faculty Program in Environment:

   Ecological Determinants of Health in Society
   Economics and the Earth's Environment
   Environment and Development

3. Senior Core and Research: In the two senior courses of the core, students will apply the general and specialized knowledge that they have gained in the program to the analysis of some speci c, contemporary environmental problems.

To obtain a B.A. Faculty Program in Environment, students must:

register in a domain online, using Minerva;

satisfy the co- and/or prerequisites for the program (Calculus and a Basic Science course);

pass all courses counted towards the Faculty Program with a grade of C or higher;

con rm that their course selection satis es the required components of the MSE core and their chosen domain, and that the complementary courses a approved courses in their chosen domain; and

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

Ce Cp n y Co e Si Re ch Pr j (3)

Only 3 credits will be applied to the program; extra credits will count as electives.

AEBI 427	(6)	Barbados Interdisciplinary Project
AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research
ENVR 451	(6)	Research in Panama

Cp n y Co e (33)

33 credits of complementary courses are chosen as follows:

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

9 credits from List A

6 credits from List B

F th

18 credits of Fundamentals (3 credits from each category):

H t En i n

GEOG 221	(3)	Environment and Health
NRSC 221	(3)	Environment and Health

H lth i e

GEOG 403	(3)	Global Health and Environmental Change
GEOG 493	(3)	Health and Environment in Africa
PARA 410	(3)	Environment and Infection

H t P b

ANTH 227	(3)	Medical Anthropology
NRSC 333	(3)	Pollution and Bioremediation

E n

AGEC 200	(3)	Principles of Microeconomics
ECON 208	(3)	Microeconomic Analysis and Applications

N b

EDKP 292	(3)	Nutrition and Wellness
NUTR 200	(3)	Contemporary Nutrition

NUTR 207	(3)	Nutrition and Health

Statistics

One of the following Statistics courses or equivalent:

Note: Credit given for Statistics courses is subject to certain restrictions. Students should consult the "Course Exclusions" information in the "Course Requirements" section for the Faculty of Arts.

AEMA 310	(3)	Statistical Methods 1
GEOG 202	(3)	Statistics and Spatial Analysis
MATH 203	(3)	Principles of Statistics 1
SOCI 350	(3)	Statistics in Social Research

List A:

9 credits from List A (maximum 3 credits from any one category):

Health Studies

ANTH 320	(3)	Social Evolution
GEOG 303	(3)	Health Geography
SOCI 225	(3)	Medicine and Health in Modern Society
SOCI 234	(3)	Population and Society
SOCI 309	(3)	Health and Illness
SOCI 515	(3)	Medicine and Society

Hydrology and Climatology

* 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

Agriculture

AEBI 425	(3)	Tropical Energy and Food
AGRI 340	(3)	Principles of Ecological Agriculture
AGRI 411	(3)	Global Issues on Development, Food and Agriculture
AGRI 550	(3)	Sustained Tropical Agriculture

Disciplinary

AGEC 242	(3)	Management Theories and Practices
BTEC 502	(3)	Biotechnology Ethics and Society
ECON 440	(3)	Health Economics
PHIL 343	(3)	Biomedical Ethics
RELG 270	(3)	Religious Ethics and the Environment
URBP 507	(3)	Planning and Infrastructure

Biology Electives

* You may take BIOL 308 or ENVB 305, but not both.

AEBI 210	(3)	Organisms 1
AEBI 211	(3)	Organisms 2
BIOL 200	(3)	Molecular Biology
BIOL 205	(3)	Biology of Organisms
BIOL 308*	(3)	Ecological Dynamics

ENVB 430*	(3)	GIS for Natural Resource Management
GEOG 201*	(3)	Introductory Geo-Information Science
GEOG 302	(3)	Environmental Management 1
GEOG 404	(3)	Environmental Management 2
PARA 515	(3)	Water, Health and Sanitation

Sta Cha e

GEOG 406	(3)	Human Dimensions of Climate Change
GEOG 514	(3)	Climate Change: Vulnerability and Adaptation
HIST 249	(3)	Health and the Healer in Western History
SOCI 307	(3)	Sociology of Globalization
URBP 520	(3)	Globalization: Planning and Change

Im gy h i Di a

MIMM 314	(3)	Intermediate Immunology
MIMM 324	(3)	Fundamental Virology
MIMM 413	(3)	Parasitology
PARA 438	(3)	Immunology
PATH 300	(3)	Human Disease
WILD 424	(3)	Parasitology

Pa Pa a

ANTH 451	(3)	Research in Society and Development in Africa
CANS 407	(3)	Regions of Canada
EDKP 204	(3)	Health Education
GEOG 451	(3)	Research in Society and Development in Africa
GEOG 498	(3)	Humans in Tropical Environments
HIST 335	(3)	Science and Medicine in Canada
HIST 510	(3)	Environmental History of Latin America (Field)
PSYC 533	(3)	International Health Psychology
SOCI 520	(3)	Migration and Immigrant Groups
SOCI 525	(3)	Health Care Systems in Comparative Perspective
SOCI 550	(3)	Developing Societies

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9.2 Ed ad Ea h s En i t Di a

This domain is open only to students in the B.A. Faculty Program in Environment.

Adviser	Mentor
Ms. Kathy Roulet Email: kathyroulet@mcgill.ca	Professor Jeanne Paquette Email: jeannepaquette@mcgill.ca

Adviser	Mentor
Telephone: 514-398-4306	Telephone: 514-398-4402

9.2.1 Ba lo Ar t (B.A.) - F y Pr g En iv t nEi dEa t En iv t (54 y l

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Understanding Earth's geologic processes pes s us with the kn wledge to miti ate ma y of our society's e ironmental impacts due to resource x a and w ste disposal. This kn wledge is not a ways enough, as economics often plays a controlling role in h w house and us our e ironment.

This domain educates students in the fundamentals of economics and Earth sciences. The fundamentals of economics are p ide , as is their application to the e fects of economic choices on Earth's i ronment. Examples of these applications include the econo fects of public poli y t ward resource industries and methods of as te disposal, and the po Tm 3m (a(wledge is no 0 1 89.075 709.84Tm 5.237 6)Tj 1)e e1obdge0 0 1 158.783320m 592 Tm (as

ENVR 301	(3)	Environmental Research Design
ENVR 400	(3)	Environmental Thought

Ce Cp n y Co e Si Re c Pr j (3)

Only 3 credits will be applied to the program; extra credits will count as electives.

Barbados Interdisciplinary Pr.767 .ej 1 0 0 1 121.949 644.5(6Tm ((3))Tj 1 0 0 121.949 644.5AEBI 427Tm (es.

ANTH 339	(3)	Ecological Anthropology
ANTH 451	(3)	Research in Society and Development in Africa
BIOL 305	(3)	Animal Diversity
BIOL 308*	(3)	Ecological Dynamics
BIOL 451	(3)	Research in Ecology and Development in Africa
BREE 217*	(3)	Hydrology and Water Resources
ECON 305	(3)	Industrial Organization
ECON 313	(3)	Economic Development 1
ECON 314	(3)	Economic Development 2
ECON 408	(3)	Public Sector Economics 1
ECON 409	(3)	Public Sector Economics 2
ECON 412	(3)	Topics in Economic Development 1
ENVB 305*	(3)	Population & Community Ecology
ENVB 437	(3)	Assessing Environmental Impact
EPSC 455	(3)	Sedimentary Geology
EPSC 549	(3)	Hydrogeology
GEOG 302	(3)	Environmental Management 1
GEOG 322*	(3)	Environmental Hydrology
GEOG 404	(3)	Environmental Management 2
GEOG 451*	(3)	Research in Society and Development in Africa
GEOG 498	(3)	Humans in Tropical Environments
HIST 510	(3)	Environmental History of Latin America (Field)
NRSC 451	(3)	Research in Ecology and Development In Africa
SOIL 510	(3)	Environmental Soil Chemistry
URBP 507	(3)	Planning and Infrastructure
URBP 520	(3)	Globalization: Planning and Change

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9.3 Envi te De pDin

This domain is open only to students in the B.A Fty Program in Environment.

Adviser	Mentor
Ms. Kathy Roulet Email: kathyroulet@mcgill.ca Telephone: 514-398-4306	Prof. Gregory Mikkelson Email: gregory.mikkelson@mcgill.ca Telephone: 514-398-4583

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ECON 313	(3)	Economic Development 1
ECON 314	(3)	Economic Development 2
GEOG 302	(3)	Environmental Management 1

Discipline Complementary Courses (21 credits)

21 credits of complementary courses are chosen from various categories as follows:

Microeconomics

One of:

AGEC 200	(3)	Principles of Microeconomics
ECON 208	(3)	Microeconomic Analysis and Applications

Statistics

3 credits, one of the following Statistics courses or equivalent:

Note: Credit given for Statistics courses is subject to certain restrictions. Students should consult the "Grades" Information in the "Course Requirements" section for the Faculty of Arts.

AEMA 310	(3)	Statistical Methods 1
GEOG 202	(3)	Statistics and Spatial Analysis
MATH 203	(3)	Principles of Statistics 1
PSYC 204	(3)	Introduction to Psychological Statistics

Advanced Discipline Complementary Courses

GEOG 305*	(3)	Soils and Environment
GEOG 322*	(3)	Environmental Hydrology
NRSC 451	(3)	Research in Ecology and Development In Africa
NUTR 403	(3)	Nutrition in Society
NUTR 501	(3)	Nutrition in Developing Countries
PARA 410	(3)	Environment and Infection
WILD 421*	(3)	Wildlife Conservation

Social Science

6 credits from:

* Note: You may take GEOG 221 or NRSC 221, but not both.

AEBI 423	(3)	Sustainable Land Use
AEBI 425	(3)	Tropical Energy and Food
AGEC 333	(3)	Resource Economics
AGRI 452	(3)	Water Resources in Barbados
ANTH 451	(3)	Research in Society and Development in Africa
CANS 407	(3)	Regions of Canada
ECON 326	(3)	Ecological Economics
ECON 347	(3)	Economics of Climate Change
ECON 405	(3)	Natural Resource Economics
GEOG 201	(3)	Introductory Geo-Information Science
GEOG 221	(3)	Environment and Health
		Human Ecology in Geog9s in Barbados

10 Bachelor of Arts and Science (B.A. & Sc.) Interfaculty Program in Environment

The Interfaculty Program in Environment is open only to students in the B.A. & Sc. program.

30 credits - chosen from amongst Areas of focus

Supporting Courses

Only 3 credits will be applied to the program; extra credits will count as electives.

AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research
ENVR 451	(6)	Research in Panama

Statistics

One of:

AEMA 310	(3)	Statistical Methods 1
BIOL 373	(3)	Biometry
GEOG 202	(3)	Statistics and Spatial Analysis
MATH 203	(3)	Principles of Statistics 1
PSYC 204	(3)	Introduction to Psychological Statistics

Areas

30 credits from at least three of the following Areas. At least 6 credits must be at the 400-level or higher, selected either from these lists or in consultation with the Program Adviser.

Area 1: Plant Community Ecology and Ecosystem Ecology

* Note: You may take BIOL 540 or ENVR 540, but not both; you may take BIOL 308 or ENVB 305, but not both.

BIOL 308*	(3)	Ecological Dynamics
BIOL 432	(3)	Limnology
BIOL 441	(3)	Biological Oceanography
BIOL 540*	(3)	Ecology of Species Invasions
ENVB 305*	(3)	Population & Community Ecology
ENVB 410	(3)	Ecosystem Ecology
ENVR 540*	(3)	Ecology of Species Invasions
GEOG 350	(3)	Ecological Biogeography
PLNT 460	(3)	Plant Ecology

Area 2: Biodiversity and Conservation

ECON 326	(3)	Ecological Economics
ECON 347	(3)	Economics of Climate Change
ECON 405	(3)	Natural Resource Economics
		Geography of the W

AGRI 210	(3)	Agro-Ecological History
AGRI 435	(3)	Soil and Water Quality Management
AGRI 452	(3)	Water Resources in Barbados
ENVB 437	(3)	Assessing Environmental Impact
GEOG 302	(3)	Environmental Management 1
GEOG 404	(3)	Environmental Management 2
NRSC 333	(3)	Pollution and Bioremediation
SOIL 335	(3)	Soil Ecology and Management
WILD 401	(4)	Fisheries and Wildlife Management
WILD 415*	(2)	Conservation Law
WOOD 441	(3)	Integrated Forest Management

con rm that their course selection satis es the required components of the MSE core and their chosen domain, and that the complementary courses a approved courses in their chosen domain; and

ful l all f aculty requirements as speci ed by the faculty in which they are registered: for the B.Sc.(Ag.Env.Sc.), refer to Programs, Courses and University Regulations> Faculties & Schools> Faculty of Agricultural and Environmental Sciences> Undergraduate> : Faculty Information and Regulations; for the B.Sc., see Programs, Courses and University Regulations> Faculties & Schools> Faculty of Science> : Faculty Degree Requirements. This includes meeting the minimum credit requirement as speci ed in their letter of admission.

11.1 Bio-diversity Core Domain

This domain is open only to students in the B.Sc.(Ag.Env.Sc.) Major Environment or B.Sc. Major Environment program.

Adviser	Mentor
Ms. Kathy Roulet Email: kathyroulet@mcgill.ca Telephone: 514-398-4306	Professor Graham Bell Email: graham.bell@mcgill.ca Telephone: 514-398-6485

11.1.1 Bachelor of Science (Agricultural and Environmental Sciences) - Major Environment Bio-diversity Core Domain (63 credits)

This domain (63 credits including core) is open only to students in the B.Sc.(Ag.Env.Sc.) Major in Environment or B.Sc. Major in Environment program.

This domain links the academic study of biological diversity with the applied eld of conservation biology. The study of biological diversity, or "biodiversity," lies at the intersection of evolution with ecology and genetics, combining the subdisciplines of evolutionary ecology, evolutionary genetics, and ecological genetics. It has two main branches: the creation of diversity and the maintenance of diversity. Both processes are governed by a general mechanism of selection acting over different scales of space and time. This gives rise to a distinctive set of principles and generalizations that relate rates of diversi cation and levels of diversity, as well as the abundance or rarity of different species. Conservation biology constitutes the application of these principles in the relevant social and economic context to the management of natural systems, with the object of preventing the extinction of rare species and maintaining the diversity of communities. As the impact of industrialization and population growth on natural systems has become more severe, conservation has emerged as an important area of practical endeavour.

Suggested First Year (U1) Courses

For suggestions on courses to take in your rst year (U1), you can consult the "MSE Student Handbook 2012-2013" available on the MSE website (http://www.mcgill.ca/mse), or contact Ms. Kathy Roulet, the Program Adviser (kathy.roulet@mcgill.ca).

Program Requirements

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 in this program. This includes core and required courses.

Location Note: When planning their schedule and registering for courses, students 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.

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 at the Downtown campus, and in Section 051 of an ENVR course that you plan to take at the Macdonald campus.

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

Core Complementary Courses Selected from Restricted Pool (3 credits)

Only 3 credits will be applied to the program; extra credits will count as electives.

AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research
ENVR 451	(6)	Research in Panama

Discipline Complementary Courses (42 credits)

42 credits of complementary courses are selected as follows:

9 credits - basic courses in the Biological Principles of Diversity, Systematics, and Conservation

3 credits - Ecology

3 credits - Statistics

9 credits - Interface between Science, Policy and Management

3 credits - Field Courses

6 credits - General Scientific Principles

3 credits - Social Science

6 credits - Organisms and Diversity

Biological Principles of Diversity, Systematics, and Conservation

9 credits are chosen from basic courses in the biological principles of diversity, systematics, and conservation as follows:

One of:

AEBI 212	(3)	Evolution and Phylogeny
BIOL 304	(3)	Evolution

One of:

AEBI 211	(3)	Organisms 2
BIOL 305	(3)	Animal Diversity

One of:

BIOL 465	(3)	Conservation Biology
WILD 421	(3)	Wildlife Conservation

Ecology

One of:

BIOL 308	(3)	Ecological Dynamics
ENVB 305	(3)	Population & Community Ecology

Statistics

One of:

AEMA 310	(3)	Statistical Methods 1
BIOL 373	(3)	Biometry

Science, Policy, and Management

9 credits are chosen from interface between science, policy and management as follows:

* Note: You may take AGEC 200 or ECON 208, but not both.

PLNT 460	(3)	Plant Ecology
WILD 311	(3)	Ethology
WOOD 420	(3)	Environmental Issues: Forestry

Select one:

One of:

* Note: If WILD 415 is tak

ANSC 330	(3)	Fundamentals of Nutrition
NUTR 307*	(3)	Human Nutrition

Hahla

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

Im gP ig y

Rei Ag2012. Sa tte ie

MICR 341	(3)	Mechanisms of Pathogenicity
MIMM 214	(3)	Introductory Immunology: Elements of Immunity
PARA 438	(3)	Immunology
PATH 300	(3)	Human Disease

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

Nb

NUTR 403	(3)	Nutrition in Society
NUTR 512	(3)	Herbs, Foods and Phytochemicals

Dg Hm

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

Phlg

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

Nt En iv te

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

Hy l gy Cn

* 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
	(3)	Environmental Hydrology

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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
URBP 507	(3)	Planning and Infrastructure

PtsMa gtn

* 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

PtoCto toMa gtn

BREE 518	(3)	Bio-Treatment of Wastes
NRSC 333	(3)	Pollution and Bioremediation

Etg

* 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

11.2.2 Ba hSi(Ag En iv thSa(B.Sc(Ag En v.Sc)) Ba hSi(B.Sc)- Ma
Env tmEg Dtf Ha P ha(63 h

The Population concentration in this domain is open only to students in the B.Sc.(Ag.) Major Environment or B.Sc. Major En

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 your 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.

Core Required Courses (18 credits)

Location Note: Core required courses for this program 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.

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

Core Capstone Courses Restricted Electives (3 credits)

Only 3 credits will be applied to the program; extra credits will count as electives.

AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research
ENVR 451	(6)	Research in Panama

Discipline Required Courses (3 credits)

PARA 410	(3)	Environment and Infection

Discipline Complementary Courses (39 credits)

39 credits of complementary courses are selected as follows:

21 credits - Fundamentals, maximum of 3 credits from each category

6 credits - List A categories, maximum of 3 credits from any one category

12 credits - List B categories, maximum of 3 credits from any one category

Fundamentals

21 credits of fundamentals, 3 credits from each category

Health and Environment

GEOG 221	(3)	Environment and Health
NRSC 221	(3)	Environment and Health

Health Sciences

Health Geograph

ANSC 312	(3)	Animal Health and Disease
PHAR 303	(3)	Principles of Toxicology

Biology

BIOL 200	(3)	Molecular Biology
BIOL 201	(3)	Cell Biology and Metabolism
LSCI 211	(3)	Biochemistry 1

Statistics

One of the following Statistics courses or equivalent:

Note: Credit given

NRSC 510	(3)	Agricultural Micrometeorology

Disciplinary Course

* Note: You may take AGEC 200 or ECON 208, but not both.

AGEC 200*	(3)	Principles of Microeconomics
AGEC 242	(3)	Management Theories and Practices
BTEC 502	(3)	Biotechnology Ethics and Society
ECON 208*	(3)	Microeconomic Analysis and Applications
EDER 461	(3)	Society and Change
GEOG 302	(3)	Environmental Management 1
GEOG 404	(3)	Environmental Management 2
PHIL 343	(3)	Biomedical Ethics
URBP 520	(3)	Globalization: Planning and Change

Department History

AGRI 210	(3)	Agro-Ecological History
ANTH 212	(3)	Anthropology of Development

For suggestions on courses to take your first year (U1), you can consult the "MSE Student Handbook 2012-2013" available on the MSE website at http://www

Impact

ENVB 437	(3)	Assessing Environmental Impact
MIME 308	(3)	Social Impact of Technology

Modelling

BIOL 309	(3)	Mathematical Models in Biology
ENVB 506	(3)	Quantitative Methods: Ecology

GIS Technique

ENVB 430	(3)	GIS for Natural Resource Management
GEOG 201	(3)	Introductory Geo-Information Science

Biophysical Environment

One of:

BREE 217	(3)	Hydrology and Water Resources
CIVE 323	(3)	Hydrology and Water Resources
ENVB 210	(3)	The Biophysical Environment
GEOG 305	(3)	Soils and Environment
GEOG 322	(3)	Environmental Hydrology
GEOG 350	(3)	Ecological Biogeography

Statistics

6 credits of Statistics are selected from one of the following two options.

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. Several Statistics courses overlap (especially with MATH 324) and cannot be taken together. These rules do not apply to B.Sc.(Ag.Env.Sc.) students.

Option 1

MATH 323	(3)	Probability
MATH 324	(3)	Statistics

Option 2

One of:

AEMA 310	(3)	Statistical Methods 1
BIOL 373	(3)	Biometry

And one of:

AEMA 411	(3)	Experimental Designs 01
CIVE 555	(3)	Environmental Data Analysis
GEOG 351	(3)	Quantitative Methods
SOCI 461	(3)	Quantitative Data Analysis

Adviser	Mentor
Telephone: 514-398-4306	Telephone: 514-398-8749

11.4.1 Ba hSi(Ag En iv tSa(B.Sc(Ag En v.Sc)) oBa hSi(B.Sc) - Ma Eni m Fo Pr d En iv t(63 j l

This domain (63 credits including core) is open only to students in the B.Sc.(Agr.) Major in Environment or B.Sc. in Environment program.

The b

Ce Cn y Co e Si Ra ch Pr (3)

Only 3 credits will be applied to the program; extra credits will count as electives.

AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research
ENVR 451	(6)	Research in Panama

Di Ri Co e (9)

AEBI 210	(3)	Organisms 1
AGRI 210	(3)	Agro-Ecological History
PLNT 300	(3)	Cropping Systems

Di Cn y Co e (33)

33 credits of complementary courses selected as follows:

15 credits - Basic Sciences

12 credits - Applied Sciences

6 credits - Social Sciences/Humanities

Ba Sc

15 credits of Basic Sciences selected as follows:

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 Information" in the "Course Requirements" section for the Faculty of Science.

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

One of:

AGRI 340	(3)	Principles of Ecological Agriculture
ANSC 250	(3)	Principles of Animal Science

One of:

BIOL 202	(3)	Basic Genetics
LSCI 204	(3)	Genetics

One of:

ENVB 210	(3)	The Biophysical Environment
GEOG 305	(3)	Soils and Environment

One of:

BIOL 308	(3)	Ecological Dynamics
ENVB 305	(3)	Population & Community Ecology

Applied Sciences

12 credits of Applied Sciences from the following:

* Note: You may take BREE 217 or GEOG 322, but not both; you may take FDSC 200 or NUTR 207, but not both.

AGRI 411	(3)	Global Issues on Development, Food and Agriculture
AGRI 435	(3)	Soil and Water Quality Management
AGRI 550	(3)	Sustained Tropical Agriculture
BIOL 465	(3)	Conservation Biology
BIOL 553	(3)	Neotropical Environments
BREE 217*	(3)	Hydrology and Water Resources
BREE 322	(3)	Organic Waste Management
BREE 518	(3)	Bio-Treatment of Wastes
ENVB 437	(3)	Assessing Environmental Impact
FDSC 200*	(3)	Introduction to Food Science
FDSC 535	(3)	Food Biotechnology
GEOG 302	(3)	Environmental Management 1
GEOG 322*	(3)	Environmental Hydrology
MICR 331	(3)	Microbial Ecology
NRSC 333	(3)	Pollution and Bioremediation
NUTR 207*	(3)	Nutrition and Health
NUTR 403	(3)	Nutrition in Society
PARA 410	(3)	Environment and Infection
PHAR 303	(3)	Principles of Toxicology
PLNT 434	(3)	Weed Biology and Control
SOIL 315	(3)	Soil Fertility and Fertilizer Use
SOIL 445	(3)	Agroenvironmental Fertilizer Use
SOIL 510	(3)	Environmental Soil Chemistry
	(4)	Fisheries and Wildlife Management

GEOG 404	(3)	Environmental Management 2
GEOG 410	(3)	Geography of Underdevelopment: Current Problems
GEOG 498	(3)	Humans in Tropical Environments
GEOG 510	(3)	Humid Tropical Environments
SOCI 254	(3)	Development and Underdevelopment
SOCI 565	(3)	Social Change in Panama
WILD 415**	(2)	Conservation Law

11.5 Land Surface Processes and Environmental Change Domain

This domain is open only to students in the B.Sc.(Agr.Sc.) Major Environment or B.Sc. Major Environment program.

Adviser	Mentor
Ms. Kathy Roulet Email: kathy.roulet@mcgill.ca Telephone: 514-398-4306	Professor Ian Strachan Email: ian.strachan@mcgill.ca Telephone: 514-398-7935

11.5.1 Basic Soil (Agr.Env.Sc.) and Land Surface Processes and Environmental Change (63 credits)

This domain (63 credits including core) is open only to students in the B.Sc.(Agr.Env.Sc.) Major in Environment or B.Sc. Major in Environment programs.

The thin soil layer on the planet's land surfaces controls the vital inputs of water, nutrients, and energy to terrestrial and freshwater aquatic ecosystems. Widespread occurrences around the globe of desertification, soil erosion, deforestation, and large reductions in water reservoirs indicate that this dynamic system is under increasing pressure from population growth and changes in climate and land uses. Production and greenhouse gases (water vapour, CO2, and methane) is controlled by complex processes operating at the land surface involving climate change feedbacks that need to be fully understood, given current global warming trends.

The program introduces students to the interacting physical and biogeochemical processes at the atmosphere-lithosphere interface in which land surface habitats and determine their biological productivity and response to anthropogenic or natural environmental changes. Through an appropriate selection of courses, students can prepare for graduate training in diverse research areas such as earth system sciences, environmental hydrology, and landscape ecology

Sample

Ce Cn y Co e Si Re cl Pr (3)

Only 3 credits will be applied to the program; extra credits will count as electives.

AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research
ENVR 451	(6)	Research in Panama

Di Ri Co e (3)

GEOG 203	(3)	Environmental Systems

Di n Cn y Co e (39)

39 credits of complementary courses are selected as follows:

9 credits - 3 credits from each category of Statistics, GIS and Remote Sensing Techniques, Weather and Climate

9 credits of fundamental land surface processes

3 credits of environment and resource management

3 credits of field course

3 credits of social science

12 credits total of advanced studies chosen from List A: Particular Environments and List B: Surface Processes

Sa

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 Information" in the "Course Requirements" section for the Faculty of Science.

AEMA 310	(3)	Statistical Methods 1
GEOG 202	(3)	Statistics and Spatial Analysis
MATH 203	(3)	Principles of Statistics 1

GIS a Re Sig Te q

One of:

ENVB 430	(3)	GIS for Natural Resource Management
GEOG 201	(3)	Introductory Geo-Information Science
GEOG 308	(3)	Principles of Remote Sensing

Wa Cn

One of:

ATOC 215	(3)	Oceans, Weather and Climate
ENVB 301	(3)	Meteorology

Fd d Sf Pr e

9 credits of fundamental land surface processes chosen as follows:

GEOG 321	(3)	Climatic Environments

And/or one of:

GEOG 272	(3)	Earth's Changing Surface
SOIL 300	(3)	Geosystems

And/or one of:

ANTH 339	(3)	Ecological Anthropology
ECON 225	(3)	Economics of the Environment
ECON 326	(3)	Ecological Economics
ECON 405	(3)	Natural Resource Economics
GEOG 221	(3)	Environment and Health
GEOG 408	(3)	Geography of Development
GEOG 498	(3)	Humans in Tropical Environments
GEOG 508	(3)	Resources, People and Development
NRSC 221	(3)	Environment and Health
SOCI 565	(3)	Social Change in Panama
URBP 520	(3)	Globalization: Planning and Change

12 credits total of advanced studies chosen from the following two lists:

List A - Particular Environments

3-9 credits of advanced study of particular Environments:

* Note: You may take BIOL 432 or ENVB 315, but not both.

BIOL 432*	(3)	Limnology
ENVB 315*	(3)	Science of Inland Waters
ENVB 410	(3)	Ecosystem Ecology
GEOG 350	(3)	Ecological Biogeography
GEOG 372	(3)	Running Water Environments
GEOG 470	(3)	Wetlands
GEOG 536	(3)	Geocryology
GEOG 550	(3)	Historical Ecology Techniques
PLNT 358	(3)	Flowering Plant Diversity
PLNT 460	(3)	Plant Ecology

List B - Surface Processes

3-9 credits advanced study of Surface Processes:

ATOC 315	(3)	Thermodynamics and Convection
BREE 509	(3)	Hydrologic Systems and Modelling
EPSC 549	(3)	Hydrogeology
EPSC 580	(3)	Aqueous Geochemistry
GEOG 501	(3)	Modelling Environmental Systems
GEOG 505	(3)	Global Biogeochemistry
GEOG 522	(3)	Advanced Environmental Hydrology
GEOG 537	(3)	Advanced Fluvial Geomorphology
NRSC 333	(3)	Pollution and Bioremediation
SOIL 331	(3)	Soil Physics
SOIL 510	(3)	Environmental Soil Chemistry

ENVR 202	(3)	The Evolving Earth
ENVR 203	(3)	Knowledge, Ethics and Environment
ENVR 301	(3)	Environmental Research Design
ENVR 400	(3)	Environmental Thought

Co Ch y Co e Si Re ch Pr (3)

Only 3 credits will be applied to the program; extra credits will count as electives.

AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research
ENVR 451	(6)	Research in Panama

Di Ch y Co e (42)

42 credits of complementary courses are selected as follows:

9 credits - Basic Principles of Ecosystem Processes and Diversity

6 credits - 3 credits from each category of Statistics and GIS

6 credits - Advanced Ecosystem Components

6 credits - Advanced Ecological Processes

6 credits - Social Processes

9 credits - Ecosystem Components or Management of Ecosystems

Be Pl Ey Pr

ENVB 430	(3)	GIS for Natural Resource Management
GEOG 201	(3)	Introductory Geo-Information Science

Advanced Ecosystem Components

6 credits of advanced ecosystem components selected from:

BIOL 553	(3)	Neotropical Environments
GEOG 372	(3)	Running Water Environments
PLNT 358	(3)	Flowering Plant Diversity
SOIL 326	(3)	Soils in a Changing Environment
WILD 307	(3)	Natural History of Vertebrates

Advanced Ecological Processes

6 credits of advanced ecological processes selected from:

* Note: You may take BIOL 432 or ENVB 315, but not both; you can take BREE 217 or GEOG 322, but not both.

BIOL 432*	(3)	Limnology
BIOL 465	(3)	Conservation Biology
BREE 217*	(3)	Hydrology and Water Resources
ENVB 315*	(3)	Science of Inland Waters
ENVB 410	(3)	Ecosystem Ecology
GEOG 322*	(3)	Environmental Hydrology
MICR 331	(3)	Microbial Ecology
NRSC 333	(3)	Pollution and Bioremediation
PLNT 460	(3)	Plant Ecology

Social Processes

6 credits of social processes selected as follows:

* If WILD 415 is taken, 1 additional credit of complementary courses must be taken.

** Note: You may take AGEC 333 and ECON 405, but not both.

AGEC 242	(3)	Management Theories and Practices
AGEC 333**	(3)	Resource Economics
ANTH 339	(3)	Ecological Anthropology
CANS 407	(3)	Regions of Canada
ECON 405**	(3)	Natural Resource Economics
GEOG 382	(3)	Principles Earth Citizenship
GEOG 498	(3)	Humans in Tropical Environments
RELG 270	(3)	Religious Ethics and the Environment
SOCI 565	(3)	Social Change in Panama
URBP 520	(3)	Globalization: Planning and Change
WILD 415*	(2)	Conservation Law

Ecosystem Components or Management of Ecosystems

9 credits of ecosystem components or management of ecosystems selected from:

AGRI 435	(3)	Soil and Water Quality Management
AGRI 452	(3)	Water Resources in Barbados
AGRI 550	(3)	Sustained Tropical Agriculture
ENVB 437	(3)	Assessing Environmental Impact
GEOG 302	(3)	Environmental Management 1
GEOG 404	(3)	Environmental Management 2
	(3)	Cropping Systems

Location Note: When planning your schedule and registering for courses, you should verify where each course is of

* Note: AEMA 310 or equivalent

AEMA 202	(3)	Intermediate Calculus
AEMA 310*	(3)	Statistical Methods 1
MATH 203	(3)	Principles of Statistics 1
MATH 222	(3)	Calculus 3

Field Course

3 credits selected from the following courses or an equivalent Aquatic Field course:

AGRI 452	(3)	Water Resources in Barbados
BIOL 331	(3)	Ecology/Behaviour Field Course
GEOG 495	(3)	Field Studies - Physical Geography

Statistics by

One of:

AGEC 333	(3)	Resource Economics
ANTH 339	(3)	Ecological Anthropology
ANTH 418	(3)	Environment and Development
ECON 225	(3)	Economics of the Environment
ECON 326	(3)	Ecological Economics
GEOG 404	(3)	Environmental Management 2
GEOG 498	(3)	Humans in Tropical Environments
POLI 345	(3)	International Organizations
POLI 466	(3)	Public Policy Analysis
SOCI 565	(3)	Social Change in Panama
URBP 520	(3)	Globalization: Planning and Change

18 credits chosen in total from List A and List B as follows:

List A

9-12 credits chosen from:

* Note: you may take BIOL 540 or ENVR 540, but not both; you may take ENVB 210 or GEOG 305, but not both; you may take BIOL 432 or ENVB 315, but not both.

AGRI 435	(3)	Soil and Water Quality Management
BIOL 342	(3)	Marine Biology
BIOL 432*	(3)	Limnology
BIOL 441	(3)	Biological Oceanography
BIOL 465	(3)	Conservation Biology
BIOL 540*	(3)	Ecology of Species Invasions
BIOL 553	(3)	Neotropical Environments
BIOL 570	(3)	Advanced Seminar in Evolution
ENTO 535	(3)	Aquatic Entomology
ENVB 210*	(3)	The Biophysical Environment
ENVB 315*	(3)	Science of Inland Waters

Location Note: When planning your 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.

Core Required Courses (18 credits)

Location Note: Core required courses for this program 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.

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

Core Capstone Courses Research Practicum (3 credits)

Note: Only 3 credits will be applied to the program; extra credits will count as electives.

AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research
ENVR 451	(6)	Research in Panama

Discipline Required Courses (12 credits)

ATOC 214	(3)	Introduction: Physics of the Atmosphere
ATOC 215	(3)	Oceans, Weather and Climate
ATOC 315	(3)	Thermodynamics and Convection
GEOG 372	(3)	Running Water Environments

Discipline Complementary Courses (30 credits)

30 credits of complementary courses are selected as follows:

6 credits - Hydrology/Water Resources, Population, Community and Ecology

3 credits - Statistics or Calculus

3 credits - Field course

12 credits chosen from List A

6 credits chosen from List B

Hydrology/Water Resources, Population, Community and Ecology

6 credits selected as follows:

One of:

BREE 217	(3)	Hydrology and Water Resources
GEOG 322	(3)	Environmental Hydrology

And one of:

BIOL 308	(3)	Ecological Dynamics
ENVB 305	(3)	Population & Community Ecology

Statistics

One of:

* Note: AEMA 310 or equivalent.

Note: Credit given for Statistics courses is subject to certain restrictions. Students in Science should consult the "Course Information" in the "Course Requirements" section for the Faculty of Science.

AEMA 202	(3)	Intermediate Calculus
AEMA 310*	(3)	Statistical Methods 1
MATH 203	(3)	Principles of Statistics 1
MATH 222	(3)	Calculus 3

Field Course

3 credits selected from the following courses or an equivalent Aquatic Field course:

AGRI 452	(3)	Water Resources in Barbados
GEOG 495	(3)	Field Studies - Physical Geography

List A:

12 credits chosen from:

AGRI 435	(3)	Soil and Water Quality Management
ATOC 309	(3)	Weather Radars and Satellites
ATOC 568	(3)	Ocean Physics
BREE 416	(3)	Engineering for Land Development
CIVE 323	(3)	Hydrology and Water Resources
EPSC 549	(3)	Hydrogeology
GEOG 201	(3)	Introductory Geo-Information Science
GEOG 308	(3)	Principles of Remote Sensing
GEOG 537	(3)	Advanced Fluvial Geomorphology
NRSC 510	(3)	Agricultural Micrometeorology
URBP 520	(3)	Globalization: Planning and Change

And/or one of:

AEMA 305	(3)	Differential Equations
MATH 315	(3)	Ordinary Differential Equations

And/or one of:

BREE 506	(3)	Advances in Drainage Management
BREE 509	(3)	Hydrologic Systems and Modelling
GEOG 522	(3)	Advanced Environmental Hydrology

And/or one of:

ENVB 210	(3)	The Biophysical Environment
GEOG 305	(3)	Soils and Environment

And/or one of:

ENVB 430	(3)	GIS for Natural Resource Management
GEOG 306	(3)	Raster Geo-Information Science

Lab:

6 credits chosen from:

* Note: You can take BIOL 432 or ENVB 315, but not both.

BIOL 342	(3)	Marine Biology
BIOL 432*	(3)	Limnology
BIOL 441	(3)	Biological Oceanography
BIOL 465	(3)	Conservation Biology
BIOL 553	(3)	Neotropical Environments
ENVB 315*	(3)	Science of Inland Waters
GEOG 350	(3)	Ecological Biogeography
GEOG 505	(3)	Global Biogeochemistry
WILD 401	(4)	Fisheries and Wildlife Management

12 Major in Environment - B.Sc.

In addition to the domains available to students in the Major program in either the Faculty of Science or the Faculty of Agricultural and Environmental Sciences, Major in Environment - B.Sc. students in the Faculty of Science can choose from one of the following two domains:

Atmospheric Environment and Air Quality, or

Earth Sciences and Economics.

Refer to section 11 Major in Environment - B.Sc.(Ag.Env.Sc.) and B.Sc. for the general guidelines and re

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One of:

GEOG 302	(3)	Environmental Management 1
GEOG 404	(3)	Environmental Management 2
GEOG 498	(3)	Humans in Tropical Environments
POLI 466	(3)	Public Policy Analysis
RELG 270	(3)	Religious Ethics and the Environment

12.2 Earth System Environment

This domain is open only to students in the B.Sc. Major in Environment program in the Faculty of Science.

Adviser	Mentor
Ms. Kathy Roulet Email: kathy.roulet@mcgill.ca Telephone: 514-398-4306	Professor Jeanne Paquette Email: jeanne.paquette@mcgill.ca Telephone: 514-398-4402

12.2.1 Bachelor of Science (B.Sc.) - Major in Environment with an Earth System Environment (66 credits)

The resources necessary for human society are e

AGRI 519	(6)	Sustainable Development Plans
ENVR 401	(3)	Environmental Research

ECON 313	(3)	Economic Development 1
ECON 314	(3)	Economic Development 2
ECON 408	(3)	Public Sector Economics 1
ECON 409	(3)	Public Sector Economics 2
ECON 412	(3)	Topics in Economic Development 1
EPSC 312	(3)	Spectroscopy of Minerals
EPSC 331	(3)	Field School 2
EPSC 341	(3)	Field School 3
EPSC 425	(3)	Sediments to Sequences
EPSC 435	(3)	Applied Geophysics
EPSC 452	(3)	Mineral Deposits
EPSC 519	(3)	Isotope Geology
EPSC 542	(3)	Chemical Oceanography
EPSC 549	(3)	Hydrogeology
EPSC 580	(3)	Aqueous Geochemistry
EPSC 590	(3)	Applied Geochemistry Seminar
GEOG 302	(3)	Environmental Management 1
GEOG 322	(3)	Environmental Hydrology
SOIL 510	(3)	Environmental Soil Chemistry

13 How to Progress Environment

Adviser

Ms. Kathy Roulet, MSE Program Adviser
Email: kathyroulet@mcgill.ca
Telephone: 514-398-4306

This Program is open only to students in the B.Sc. Major in Environment, B.Sc.(Ag.Env.Sc.) Major in Environment, B.A. Faculty Program in Environment,

5. Arts (B.A.) students in the Honours Environment program must also complete a minor concentration in an academic unit other than the McGill School of Environment. Please refer to the Faculty of Arts regulations on Honours programs found under "Faculty Degree Requirements", "About Program

5. B.A. & Sc. students must complete at least 30 credits in the Faculty of Arts and at least 30 in the Faculty of Science as part of their Honours program and their Minor concentration or Minor program. For a list of available Minor concentrations or Minor programs, see "Overview of Programs Offered" and "Minor Concentrations or Minors."

Students in the B.A. & Sc. Honours programs complete the core courses (54 credits) for the Interfaculty Program in Environment as well as the Honours required courses (6 credits).

At the completion of your Honours research, you are expected to present your results at an Honours Symposium, and are required to submit your final report to the MSE Program Adviser.

Honours Research Courses (6 credits)

Note: You take either ENVR 495D1 and ENVR 495D2 (6 credits over consecutive terms) or ENVR 495N1 and ENVR 495N2 (6 credits over non-consecutive terms).

ENVR 495D1	(3)	Honours Research
ENVR 495D2	(3)	Honours Research
ENVR 495N1	(3)	Honours Research
ENVR 495N2	(3)	Honours Research

13.4 Bachelor of Science (Agricultural and Environmental Sciences) with Honours in Environment (B.Sc.(Agr.Env.Sc.)) - Honours in Environment (69 credits)

This program is open only to students in the B.Sc.(Agr.Env.Sc.) Major Environment. To be eligible for Honours, students must satisfy the requirements set by their B.Sc.(Ag.Env.Sc.) degree.

In addition, students must satisfy the following:

1. Students apply for the Honours program in March of their U2 year. See the Program Adviser for details.

2. Applicants must have a minimum Program GPA (GPA of all required and complementary courses for the program in Environment taken at McGill) of 3.3 to enter the Honours program.

3. Students must earn a B grade (3.0) or higher for the Honours Research courses (ENVR 496 and ENVR 497).

4. Students are required to achieve a minimum overall CGPA of 3.0 at graduation, and a minimum Program GPA of 3.3 to obtain Honours.

Students in the B.Sc.(Ag.Env.Sc.) Honours program complete the core and domain courses (60 to 63 credits) according to their chosen domain as well as the 6 credits of required Honours courses.

At the completion of your Honours research, you are expected to present your results at an Honours Symposium, and are required to submit your final report to the MSE Program Adviser.

Honours Research Courses (6 credits)

ENVR 496	(3)	Honours Research Part 1
ENVR 497	(3)	Honours Research Part 2

14 Joint Honours Component in Environment

Adviser

Ms. Kathy Roulet, MSE Program Adviser
Email: kathyroulet@mcgill.ca
Telephone: 514-398-4306

This program is open only to students in the B.A. Faculty Program in Environment.

The Joint Honours Component in Environment offers students the opportunity to undertake a year-long, interdisciplinary research project in their final year in close association with a professor. Honours research provides excellent preparation for graduate studies, but is not required for such studies. If, for some reason, students cannot complete the Joint Honours requirements, they still graduate with a Minor Concentration in Environment.

GEOG 202	(3)	Statistics and Spatial Analysis	A

9 credits - must be taken in an area of focus chosen by the student with the approval of the Program Adviser. At least 6 credits must be taken at the 400 level

GEOG 508	(3)	Resources, People and Development
GEOG 530	(3)	Global Land and Water Resources
GEOG 551	(3)	Environmental Decisions
MGPO 440	(3)	Strategies for Sustainability
NRSC 221	(3)	Environment and Health
NRSC 540	(3)	Socio-Cultural Issues in Water
PHIL 230	(3)	Introduction to Moral Philosophy 1
PHIL 237	(3)	Contemporary Moral Issues
PHIL 334	(3)	Ethical Theory
PHIL 343	(3)	Biomedical Ethics
PHIL 348	(3)	Philosophy of Law 1
POLI 211	(3)	Comparative Government and Politics
POLI 212	(3)	Government and Politics - Developed World
POLI 227	(3)	Developing Areas/Introduction
POLI 345	(3)	International Organizations
POLI 445	(3)	International Political Economy: Monetary Relations
POLI 466	(3)	Public Policy Analysis
PSYC 215	(3)	Social Psychology
RELG 270	(3)	Religious Ethics and the Environment
RELG 340	(3)	Religion and the Sciences
RELG 370	(3)	Religion and Human Rights
RELG 376	(3)	Religious Ethics
SOCI 222	(3)	Urban Sociology
SOCI 234	(3)	Population and Society
SOCI 235	(3)	Technology and Society
SOCI 254	(3)	Development and Underdevelopment
SOCI 386	(3)	Contemporary Social Movements
URBP 201	(3)	Planning the 21st Century City
URBP 506	(3)	Environmental Policy and Planning
URBP 530	(3)	Urban Environmental Planning
WILD 415*	(2)	Conservation Law

Natural and Technological Sciences

* Note: You may take LSCI 230 or MIMM 211, but not both; you may take BIOL 432 or ENVB 315, but not both; you may take ENVB 430 or GEOG 201, but not both; you may take BREE 217 or GEOG 322, but not both.

AGRI 340	(3)	Principles of Ecological Agriculture
AGRI 435	(3)	Soil and Water Quality Management
ANSC 326	(3)	Fundamentals of Population Genetics
ANTH 311	(3)	Primate Behaviour and Ecology
ARCH 375	(2)	Landscape
ARCH 377	(3)	Energy, Environment and Buildings
ARCH 378	(3)	Site Usage
ATOC 215	(3)	Oceans, Weather and Climate

BIOL 240	(3)	Montereg ian Flora
BIOL 305	(3)	Animal Diversity
BIOL 308	(3)	Ecological Dynamics
BIOL 310	(3)	Biodiversity and Ecosystems
BIOL 342	(3)	Marine Biology
BIOL 418	(3)	Freshw ater In vertebrate Ecology
BIOL 432*	(3)	Limnology
BIOL 436	(3)	Evolution and Society
BIOL 465	(3)	Conserv ation Biology
BREE 217*	(3)	Hydrology and Water Resources
BREE 322	(3)	Org anic Waste Management
BREE 518	(3)	Bio-Treatment of Wastes
BTEC 502	(3)	Biotechnology Ethics and Society
CHEE 230	(3)	Env ironmental Aspects of Technology
CHEM 212	(4)	Introductory Org anic Chemistry 1
CHEM 281	(3)	Inorg anic Chemistry 1
CHEM 462	(3)	Green Chemistry
CIVE 225	(4)	Env ironmental Engineering
CIVE 323	(3)	Hydrology and Water Resources
CIVE 550	(3)	Water Resources Management
ENTO 340	(3)	Field Entomology
ENVB 210	(3)	The Biophysical Env ironment
ENVB 301	(3)	Meteorology
ENVB 305	(3)	Population & Community Ecology
ENVB 315*	(3)	Science of Inland Waters
ENVB 410	(3)	Ecosystem Ecology
ENVB 415	(3)	Ecosystem Management
ENVB 430*	(3)	GIS for Natural Resource Management
ENVR 200	(3)	The Global Env ironment
ENVR 202	(3)	The Evolving Earth
EPSC 201	(3)	Understanding Planet Earth
EPSC 233	(3)	Earth and Life History
EPSC 425	(3)	Sediments to Sequences
EPSC 549	(3)	Hydrogeology
ESYS 301	(3)	Earth System Modelling
GEOG 200	(3)	Geographical Perspectives: World Env ironmental Problems
GEOG 201*	(3)	Introductory Geo-Information Science
GEOG 205	(3)	Global Change: Past, Present and Future
GEOG 272	(3)	Earth's Changing Surface
GEOG 308	(3)	Principles of Remote Sensing
GEOG 321	(3)	Climatic Env ironments
GEOG 322*	(3)	Env ironmental Hydrology

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GEOG 470	(3)	Wetlands
LSCI 230*	(3)	Introductory Microbiology
MICR 331	(3)	Microbial Ecology
MIME 308	(3)	Social Impact of Technology