ENVIRONMENTAL GEOLOGY – SPECIALIZATION (SCIENCE) – BACHELOR OF SCIENCE (HONOURS)

EGEO-P-BSH

Subject: Administered by the School of Environmental Studies in partnership with the Department of Geological Sciences and Geological Engineering.
Plan: Consists of 99.00 units as described below.
Program: The Plan, with sufficient electives to total 120.00 units, will lead to a Bachelor of Science (Honours) Degree.

Code	Title	Units
1. Core		
– CORE SCIENCE –		
A. Complete 3.00 units from the following:		**3.00**
BIOL 103	Fundamentals of Biology: Organisms to Ecosystems	
BIOL 111	Ecology and the Environment	
B. Complete the following:		
CHEM 112	General Chemistry	6.00
C. Complete the following:		
GPHY 101	Human Geography	3.00
GPHY 102	Physical Geography and Natural Resources	3.00
D. Complete the following:		
GEOL 104	The Dynamic Earth	3.00
GEOL 107	History of Life	3.00
E. Complete 6.00 units from the following:		**6.00**
MATH 120	Differential and Integral Calculus	
or		
MATH 121	Differential and Integral Calculus	
or		
MATH 123 & MATH 124	Differential and Integral Calculus I and Differential and Integral Calculus II	
– CORE GEOLOGY –		
F. Complete 6.00 units from the following:		**6.00**
PHYS 104	Fundamental Physics	
or		
PHYS 106	General Physics	
or		
PHYS 115 & PHYS 116	Introduction to Physics I and Introduction to Physics II	
or		
PHYS 118	Basic Physics	
G. Complete the following:		
GEOL 200	Oceanography	3.00
GEOL 221	Geological Field Methods	3.00
GEOL 232	Mineralogy	3.00
GEOL 235	Igneous and Metamorphic Petrology	3.00
GEOL 238	Sedimentology and Stratigraphy	3.00
GEOL 249	Geophysical Characterization of the Earth	3.00
H. Complete 9.00 units from the following:		**9.00**
GEOL 300	Geological Field School	
GEOL 321	Structural Geology	
GEOL 337	Paleontology	
GEOL 365	Geochemical Characterization of Earth Processes	
I. Complete 9.00 units from the following:		**9.00**
GEOL at the 300-level or above		
– CORE SOCIAL SCIENCES AND HUMANITIES –		
J. Complete the following:		
ENSC 103	Environment and Sustainability	3.00
K. Complete the following:		
ENSC 230	Principles of Sustainability	3.00
ENSC 330	Applications of Sustainability	3.00
L. Complete 6.00 units from the following:		**6.00**
ENSC 430	Honours Projects in Environmental Sustainability	
ENSC 501	Independent Environmental Study	
2. Option		
A. Complete 3.00 units from the following course list:		**3.00**
ENSC_Specialization_Options_A		
B. Complete 3.00 units from the following:		**3.00**
BIOL 200	Diversity of Life	
BIOL 212	Scientific Methods in Biology	
ENSC_Specialization_Options_B		
C. Complete 3.00 units from the following course list:		**3.00**
ENSC_Interdisciplinary_Humanities		
D. Complete 6.00 units from the following:		**6.00**
BIOL at the 200-level		
CHEM at the 200-level		
CISC 101	Introduction to Computer Programming	
CISC 121	Introduction to Computing Science I	
CISC 124	Introduction to Computing Science II	
CISC at the 200-level		
GPHY_Physical at the 200-level		
GPHY_Tech/Methods at the 200-level		
MATH at the 200-level		

PHYS at the 200-level		
STAT at the 200-level		
WRIT 120	Fundamentals of Effective Writing	
or WRIT 125	Fundamentals of Academic Essay Writing	
Electives		
Elective Courses		21.00
Total Units		**120.00**

3. Substitutions

A. Up to 3.00 units of Geology may be substituted for 3.00 units of the courses listed in item **2.D.** above.

B. ENSC 502 may be substituted for requirement **1.L.** and a further 6.00 units in electives and/or Plan requirements as approved by the Chair of Undergraduate Studies.

4. Notes

A. A maximum of 6.00 units from courses offered by other Faculties and Schools may be counted toward the program and/or Plan requirements. This includes courses in BMED, COMM, GLPH, HSCI, LAW, NURS, and courses offered by Smith Engineering.

Environmental Geology Course List

The following lists contain courses offered through other Departments. In accordance with Academic Regulation **2.6** (Access to Classes), students do not have enrolment priority in all of these courses. Access to these courses may only be made available during the Open Enrolment period, and then only if space permits.

ENSC_Interdisciplinary_Humanities

Code	Title	Units
Environmental Science/Studies Interdisciplinary Humanities Options		
CLST 214	Ancient Science	3.00
DEVS 220	Introduction to Indigenous Studies	3.00
DEVS 221	Indigenous Studies II - Resistance and Resurgence	3.00
ENGL 113	Reading for the Planet	3.00
ENGL 218	Introduction to Indigenous Literatures in Canada	3.00
ENGL 276	Literature and the Environment	3.00
PHIL 203	Science and Society	3.00
PHIL 293	Humans and the Natural World	3.00
PHIL 493	Ethics and the Environment	3.00
RELS 235	Religion and Environment	3.00

ENSC_Specialization_Options_A

Code	Title	Units
Options in the Environmental Science Specialization Plans, List A		
BIOL 102	Fundamentals of Biology: Molecular and Cell Biology	3.00
BIOL 103	Fundamentals of Biology: Organisms to Ecosystems	3.00
BIOL 335	Limnology and Aquatic Ecology	3.00
ENSC 301	Environmental Assessment	3.00
ENSC 320	Wildlife Issues in a Changing World	3.00
GPHY 318	Advanced Biogeography	3.00

ENSC_Specialization_Options_B

Code	Title	Units
Options in the Environmental Science Specialization Plans, List B		
BIOL 335	Limnology and Aquatic Ecology	3.00
ENSC 307	Marine Environmental Issues	3.00
ENSC 201	Environmental Toxicology and Chemical Risks	3.00
ENSC 301	Environmental Assessment	3.00
ENSC 320	Wildlife Issues in a Changing World	3.00
ENSC 407	Global Water Resources: Challenges and Opportunities	3.00
ENSC 425	Ecotoxicology	3.00
ENSC 480	Special Topics in Environmental Science	3.00
GEOL 106	Environmental Geology and Natural Hazards	3.00
GEOL 107	History of Life	3.00
GEOL 200	Oceanography	3.00
GPHY 207	Principles of Biogeography	3.00
GPHY 209	Weather and Climate	3.00
GPHY 304	Northern and Arctic Environments	3.00
GPHY 312	Watershed Hydrology	3.00
GPHY 314	Climate Change	3.00
GPHY 317	Soil, Environment, and Society	3.00
GPHY 318	Advanced Biogeography	3.00
GPHY 319	Contemporary Energy Resources	3.00

GPHY_Physical

Code	Title	Units
Physical Geography		
GPHY 102	Physical Geography and Natural Resources	3.00
GPHY 207	Principles of Biogeography	3.00
GPHY 208	Surface Processes, Landforms, and Soils	3.00

GPHY 209	Weather and Climate	3.00
GPHY 215	Field Studies in Physical Geography	3.00
GPHY 304	Northern and Arctic Environments	3.00
GPHY 305	Applied Cold Regions Science	3.00
GPHY 309	Field School in Geography	3.00
GPHY 310	Landscape Ecology	3.00
GPHY 312	Watershed Hydrology	3.00
GPHY 313	Glacier Processes and Dynamics	3.00
GPHY 314	Climate Change	3.00
GPHY 315	Advanced Field Measurements and Their Analysis	3.00
GPHY 317	Soil, Environment, and Society	3.00
GPHY 318	Advanced Biogeography	3.00
GPHY 319	Contemporary Energy Resources	3.00
GPHY 320	Energy and Society	3.00
GPHY 371	Special Topics in Earth System Science	3.00
GPHY 415	Advanced Analysis of Earth Surface Processes	6.00
GPHY 501	Special Studies in Geography	3.00
GPHY 502	Research and Thesis in Geography I	3.00
GPHY 503	Research and Thesis Geography II	6.00

GPHY_Tech/Methods

Code	Title	Units
Techniques, Research Methods and Geographic Information Science		
GPHY 105	The Digital Earth: Geospatial Data and Earth Observation	3.00
GPHY 240	Introduction to Qualitative Methods in Geography	3.00
GPHY 242	Remote Sensing I: Remote Sensing of the Environment	3.00
GPHY 243	Geographic Information Science	3.00
GPHY 247	Introduction to Statistics	3.00
GPHY 315	Advanced Field Measurements and Their Analysis	3.00
GPHY 341	Photogrammetry	3.00
GPHY 342	Remote Sensing II: Digital Image Processing	3.00
GPHY 345	Spatial Analysis	3.00
GPHY 346	GIS and Modelling for Environmental Applications	3.00
GPHY 348	Application Design and Customization in GIS	3.00
GPHY 372	Special Topics Geographic Information Science	3.00
GPHY 501	Special Studies in Geography	3.00
GPHY 502	Research and Thesis in Geography I	3.00
GPHY 503	Research and Thesis Geography II	6.00