ENVIRONMENTAL LIFE SCIENCES – SPECIALIZATION (SCIENCE) – BACHELOR OF SCIENCE (HONOURS)

ELSC-P-BSH

Subject: Administered by the School of Environmental Studies in partnership with the Department of Biomedical and Molecular Sciences.
Plan: Consists of 105.00 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 the following:		
BIOL 102	Fundamentals of Biology: Molecular and Cell Biology	3.00
BIOL 103	Fundamentals of Biology: Organisms to Ecosystems	3.00
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 3.00 units from the following:		**3.00**
GEOL 104	The Dynamic Earth	
GEOL 107	History of Life	
E. Complete 3.00 units from the following:		**3.00**
MATH at the 100-level		
STAT at the 200- or 300-level		
F. Complete 3.00 units from the following:		**3.00**
STAT at the 200- or 300-level		
– CORE ENVIRONMENTAL LIFE SCIENCE –		
G. 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	
H. Complete the following:		
PHGY 215	Principles of Mammalian Physiology I	3.00
PHGY 216	Principles of Mammalian Physiology II	3.00
I. Complete 3.00 units from the following:		**3.00**
MICR 221	Fundamental Microbiology	
MICR 271	Introduction to Microbiology	
J. Complete the following:		
CHEM 281	General Organic Chemistry I (with Virtual Laboratory)	3.00
CHEM 282	General Organic Chemistry II	3.00
K. Complete the following:		
BCHM 218	Molecular Biology	3.00
L. Complete the following:		
BCHM 315	Proteins and Enzymes	3.00
BCHM 316	Metabolism	3.00
M. Complete the following:		
PHAR 416	Xenobiotic Disposition and Toxicity	3.00
– CORE SOCIAL SCIENCES AND HUMANITIES –		
N. Complete the following		
ENSC 103	Environment and Sustainability	3.00
O. Complete the following:		
ENSC 230	Principles of Sustainability	3.00
ENSC 330	Applications of Sustainability	3.00
P. 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:		**3.00**
GEOL at any level		
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 21.00 units from the following course list:		**21.00**
ELSC_Options		
Electives		
Elective Courses		15.00
Total Units		**120.00**

3. Substitutions

A. ENSC 502 may be substituted for requirement **1.P.** 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 COMM, LAW, NURS, and courses offered by Smith Engineering.

Environmental Life Sciences Course Lists

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.

ELSC_Options

Code	Title	Units
Options in the Environmental Life Sciences Plan		
ANAT 215	Principles of Human Morphology I	3.00
ANAT 216	Principles of Human Morphology II	3.00
BCHM 482	Proteomics and Metabolomics	3.00
BIOL 205	Mendelian and Molecular Genetics	3.00
BCHM 370	Genetics and Genomics	3.00
CANC 380	Evolutionary Biology of Cancer	3.00
CHEE 342	Environmental Biotechnology [1]	3.50
CHEE 484	Bioremediation [1]	3.50
EPID 301	Principles of Epidemiology	3.00
ENSC 501	Independent Environmental Study	6.00
HLTH 237	An Introduction to Drugs, Drug Use and Drug Dependence	3.00
MICR 320	Microbes in Health and Disease	3.00
MICR 360	Immunology	3.00
MICR 433	Microbial Diversity	3.00
MICR 435	Advanced Procaryotic Structure and Function	3.00
MICR 436	Microbial Genetics	3.00
MICR 450	Principles of Molecular Virology	3.00
MICR 451	Viral Pathogenesis	3.00
MICR 452	Viral Infection and Immunity	3.00
PHAR 230	Pharmacology for the Health Sciences	3.00
PHAR 340	Principles of General Pharmacology I	3.00
PHAR 450	Principles of General Pharmacology II	3.00
REPD 416	Biology of Reproduction	3.00
ANAT 499	Research Project in Anatomy and Cell Biology	12.00
CANC 499	Research Project in Cancer Biology and Genetics	12.00
EPID 499	Research Project in Epidemiology	12.00
MICR 499	Research Project in Microbiology and Immunology	12.00
NSCI 499	Research Project in Neuroscience	12.00
PATH 499	Research Project in Pathology	12.00
PHAR 499	Research Project in Pharmacology and Toxicology	12.00
PHGY 499	Research Project in Physiology	12.00
REPD 499	Research Project in Reproduction and Development	12.00

[1] Note that the unit weighting system in Smith Engineering differs from that in the Faculty of Arts and Science. Therefore, upon acceptance of any course from Smith Engineering, the unit weighting towards Arts and Science degree requirements shall be at the discretion of the Associate Dean (Academic). Usually, a one-term course shall count as 3.00 units and a two-term course as 6.00 units.

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_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 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