

# ENVIRONMENTAL LIFE SCIENCE – 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.

Requirements for this program have been modified. Please consult the [2021-2022 Calendar](#) for the previous requirements.

Code	Title	Units
<b>1. Core</b>		
– CORE SCIENCE –		
<b>A. Complete the following:</b>		
BIOL 102	Fundamentals of Biology: Molecular and Cell Biology	3.00
BIOL 103	Fundamentals of Biology: Organisms to Ecosystems	3.00
<b>B. Complete the following:</b>		
CHEM 112	General Chemistry	6.00
<b>C. Complete the following:</b>		
GPHY 101	Human Geography	3.00
GPHY 102	Physical Geography and Natural Resources	3.00
<b>D. Complete 3.00 units from the following: 3.00</b>		
GEOL 104	The Dynamic Earth	
GEOL 107	History of Life	
<b>E. Complete 3.00 units from the following: 3.00</b>		
MATH at the 100-level		
STAT at the 200- or 300-level		
<b>F. Complete 3.00 units from the following: 3.00</b>		
STAT at the 200- or 300-level		
– CORE ENVIRONMENTAL LIFE SCIENCE –		
<b>G. Complete 6.00 units from the following: 6.00</b>		
PHYS 104	Fundamental Physics	
PHYS 106	General Physics	
PHYS 115	Introduction to Physics I	
& PHYS 116	and Introduction to Physics II	
PHYS 118	Basic Physics	
<b>H. Complete the following:</b>		
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 in the Faculty of Engineering and Applied Science.

## Environmental Life Sciences Course Lists

The following lists contain courses offered through other Departments. In accordance with Academic Regulation **2.5** (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
<b>Options in the Environmental Life Sciences Plan</b>		
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	3.00
CHEE 484	Bioremediation	3.00
CIVL 283	Env. Applic. In Civil Eng.	3.00
EPID 301	Principles of Epidemiology	3.00
ENSC 501	Independent Environmental Study	6.00
GPHY 339	Medical Geography	3.00
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 Prokaryotic Structure and Function	3.00
MICR 436	Microbial Genetics	3.00
MICR 450	Principles of Molecular Virology	3.00
MICR 451	Selected Topics in Viral Pathogen	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

### ENSC\_Interdisciplinary\_Humanities

Code	Title	Units
<b>Environmental Science/Studies Interdisciplinary Humanities Options</b>		
CLST 214	Ancient Science	3.00
DEVS 220	Introduction to Indigenous Studies	3.00
DEVS 221	Indigenous Studies II - Resistance and Resurgence	3.00
PHIL 203	Science and Society	3.00
PHIL 293	Humans and the Natural World	3.00
PHIL 310	Development Ethics	3.00
PHIL 493	Ethics and the Environment	3.00
RELS 235	Religion and Environment	3.00

### ENSC\_Specialization\_Options\_B

Code	Title	Units
<b>Options in the Environmental Science Specialization Plans, List B</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 Issues	3.00
ENSC 425	Ecotoxicology	3.00
ENSC 471	Environmental Analysis Methods	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 306	Natural Environmental Change	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