

E N V I R O N M E N T A L S T U D I E S P R O G R A M

# ELSC-P-BSH

**SSP ENVIRONMENTAL SCIENCE LIFE SCIENCES PROGRAM REQUIREMENTS**

**2021/2022**

**Advisor:** Dr. L. Winn, BioSciences 3246, email: [winnl@queensu.ca](mailto:winnl@queensu.ca)

The four-year B.Sc. (Honours, SSP, Environmental Life Sciences) requires a minimum of **120.0 units** in total.

<b>Core Science &amp; Social Science Courses: 72.0 units</b>	<b>Completed</b>
6.0 units in BIOL 102(Intro. Biology of Cells) <b>and</b> BIOL 103(Intro. Biology of Organisms)	
6.0 units from CHEM 112(General Chemistry)	
6.0 units from GPHY 101(Human Geography) <b>and</b> GPHY 102(Earth System Science)	
3.0 units from GEOL 104 <b>or</b> GEOL 107	
3.0 units from MATH at the 100-level; STAT at the 200-300 level	
3.0 units from STAT at the 200-300 level	
6.0 units from PHYS 104; PHYS 106; PHYS 117; PHYS 118	
6.0 units from PHGY 215; PHGY 216	
3.0 units from MICR 221 <b>or</b> MICR 271	
6.0 units in CHEM 281(General Org. Chem. I) and CHEM 282(General Org. Chem. II)	
3.0 units in BCHM 218/3.0	
6.0 units in BCHM 315(Proteins and Enzymes) and BCHM 316(Metabolism)	
3.0 units in PHAR 416(Xenobiotic Disposition & Toxicity)	
3.0 units in ENSC 103(Environment and Sustainability)	
3.0 units in ENSC 390(Sustainability)	
6.0 units from ENSC 430 (Honours Projects in Environmental Sustainability) or ENSC 501 or ENSC 502	
<b>Option Courses: 30.0 units</b>	<b>Completed</b>
3.0 units from GEOL	
<b>3.0 units from</b> BIOL 103(Introductory Biology of Organisms), BIOL 200(Diversity of Life), BIOL 212(Scientific Methods in Biology); <b>ENSC Specialization Options B:</b> BIOL 335(Limnology and Aquatic Ecology), ENSC 201 (Environmental Toxicology and Chemical Risks), ENSC 301(Environmental Assessment), ENSC 307(Marine Environmental Issues), ENSC 320(Wildlife Issues in a Changing World), ENSC 407(Global Water Issues), ENSC 425(Ecototoxicology), ENSC 471(Environmental Analysis Methods), ENSC 480(Special Topics in Environmental Science), ENSC 481(Special Topics in Environmental Science II), GEOL 106(Environmental Geology and Natural Hazards), GEOL 107(History of Life), GEOL 200(Oceanography), GPHY 207 (Principles of Biogeography), GPHY 209(Principles of Hydroclimatology), GPHY 304(Arctic and Periglacial Environments), GPHY 306 (Natural Environmental Change), GPHY 312(Watershed Hydrology), GPHY 314(Climatic Change), GPHY 317(Soil, Environment & Society), GPHY 318(Advanced Biogeography), GPHY 319(Bioenergy & Biorefining)	
<b>3.0 units from ENSC Integrative Social Science and Humanities:</b> CHEE 342 (Environmental Biotechnology), CLST 214 (Ancient Science), DEVS 220(Intro to Aboriginal Studies), DEVS 221(Topics in Aboriginal Studies), DEVS 250 (Global Environmental Transformations), ENSC 200(Environmental History), ENSC 290(Intro. To Ecological Economics) or ECON 290(Intro. to Environmental Economics), ENSC 301 (Environmental Assessment), ENSC 305(Social Environments), ENSC 307(Marine	

Environmental Issues), ENSC 310(Environmental Policy), ENSC 315(Global Food Security, Agriculture and Environment), ENSC 320 (Wildlife Issues in a Changing World), ENSC321(Environmental Justice), ENSC 407(Global Water Issues), ENSC 420(Gender and Environments), ENSC 482(Special Topics in Environmental Studies), ENSC 483(Special Topics in Environmental Studies II), GPHY 336(Geography, Environment & Human Health), GPHY 339(Medical Geography), PHIL 203 (Science and Society), PHIL 293(Humans and the Natural World), PHIL 310(Development Ethics), PHIL 493(Ethics and the Environment), RELS 235(Religion and Environment)	
<b>3.0 units from ENSC Interdisciplinary Humanities:</b> CLST 214 (Ancient Science); DEVS 220(Intro to Aboriginal Studies); DEVS 221(Topics in Aboriginal Studies); PHIL 203 (Science and Society); PHIL 293 (Humans and the Natural World); PHIL 310 (Development Ethics); PHIL 493 (Ethics and the Environment); RELS 235 (Religion and Environment)	
<b>21.0 units from ELSC_Options:</b> ANAT 215(Principles of Human Morphology I), ANAT 216(Principles of Human Morphology II), ANAT 416(Reproduction), BIOL 205(Mendelian & Molecular Genetics), CHEE 342 (Environmental Biotechnology), CHEE 484(Bioremediation), CIVL 283(Environmental Engineering), ENSC 501(Independent Environmental Study), EPID 301(Principles of Epidemiology), GPHY 339(Medical Geography), HLTH 237(Alcohol and Drugs), MICR 320 (Microbial Pathogenesis), MICR 360(Immunology), MICR 435(Advanced Prokaryotic Structure and Function), MICR 436(Microbial Genetics), MICR 450 (Animal Virus Pathogenesis), MICR 451(Selected Topics in Viral Pathogenesis), MICR 452(Viral Infection & Immunity), MINE 462(Occupational Health/Issues in Health, Safety and the Environment), NURS 302 (Ethnicity, Aging and Health), PATH 410(General Pathology), PHAR 230(Pharmacology for the Health Sciences), PHAR 340(Principles of General Pharmacology I), PHAR 380(Drug and Environmental Toxicology), PHAR 450(Principles of General Pharmacology II); (ANAT 499 or CANC 499 or EPID 499 or LISC 499 or MICR 499 or NSCI 499 or PATH 499 or PHAR 499 or PHGY 499)	3.0 – 3.0 – 3.0 – 3.0 – 3.0 – 3.0 – 3.0 –
<b>Electives: 15.0 units</b>	