

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

ECHM-P-BSH

Subject: Administered by the School of Environmental Studies in partnership with the Department of Chemistry.

Plan: Consists of 102.0 units as described below.

Program: The Plan, with sufficient electives to total 120.0 units, will lead to a Bachelor of Science (Honours) Degree.

Code	Title	Units
1. Core		
Core Science:		
A. Select 3.00 units from the following:		3.00
BIOL 111	Ecology and the Environment	
BIOL 103	Fundamentals of Biology: Organisms to Ecosystems	
B. Complete the following:		
CHEM 112	General Chemistry	6.00
C. Complete the following:		
GPHY 101	Human Geography	6.00
& GPHY 102	and Physical Geography and Natural Resources	
D. Select 3.00 units from the following:		3.00
GEOL 104	The Dynamic Earth	
GEOL 107	History of Life	
E. Select 6.00 units from the following:		6.00
MATH 111	Linear Algebra	
MATH 120	Differential and Integral Calculus	
MATH 121	Differential and Integral Calculus	
MATH 123	Differential and Integral Calculus I	
& MATH 124	and Differential and Integral Calculus II	
Environmental Chemistry Core:		
F. Select 6.00 units from the following:		6.00
PHYS 104	Fundamental Physics	
PHYS 106	General Physics	
PHYS 117	Introductory Physics	
G. Select 18.00 units from the following:		18.00
CHEM 211	Main Group Chemistry	
CHEM 212	Principles of Chemical Reactivity	
CHEM 213	Introduction to Chemical Analysis	
CHEM 221	Material, Solutions, Interfaces	
CHEM 222	Methods of Structure Determination	
CHEM 223	Organic Reactions	
H. Select 12.00 units from the following:		12.00
CHEM 311	Mechanistic Organic Chemistry	

CHEM 312	Transition Metal Chemistry	
CHEM 323	Biological Chemistry	
CHEM 326	Environmental and Green Chemistry	
I. Select 3.00 units from the following:		3.00
CHEM 321	Instrumental Chemical Analysis	
ENSC 471	Environmental Analysis Methods	
J. Complete the following:		
CHEM 397	Experimental Chemistry	6.00
K. Complete the following:		
CHEM 497	Research Project	6.00
Core Social Sciences and Humanities:		
L. Complete the following:		
ENSC 103	Environment and Sustainability	3.00
M. Complete the following:		
ENSC 390	Sustainability	3.00
N. Select 6.00 units from the following:		6.00
ENSC 430	Honours Projects in Environmental Sustainability	
ENSC 501	Independent Environmental Study	
2. Option		
A. ENSC_Specialization_Options_A		3.00
B. GEOL		3.00
C. Select 3.00 units from the following:		3.00
BIOL 200	Diversity Of Life	
BIOL 212	Scientific Methods in Biology	
ENSC_Specialization_Options_B		
D. ENSC_Interdisciplinary_SocSci/Huma		3.00
E. ENSC_Interdisciplinary_Humanities		3.00
Electives		
Elective Courses		18.00
Total Units		120.00

3. Substitutions

A. ENSC 502 Research Project Sustainability may be substituted for requirement 1.N. and a further 6.0 units in electives and/or Plan requirements as approved by the Chair of Undergraduate Studies.

4. Note

A. A maximum of 6.0 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, LAW, NURS and courses in the Faculty of Engineering and Applied Science.

Environmental Chemistry 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.

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	Topics in Indigenous Human Ecology	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_Interdisciplinary_SocSci/Huma

Code	Title	Units
Environmental Science/Studies Interdisciplinary Social Science and Humanities Options		
CHEE 342	Environmental Biotechnology	3.50
CLST 214	Ancient Science	3.00
DEVS 220	Introduction to Indigenous Studies	3.00
DEVS 221	Topics in Indigenous Human Ecology	3.00
DEVS 250	Environmental Transformations	3.00
ECON 290	Environmental Economics and Assessment	3.00
ENSC 200	Environmental History	3.00
ENSC 290	Introduction to Ecological Economics	3.00
ENSC 301	Environmental Assessment	3.00
ENSC 305	Social Environments	3.00
ENSC 307	Marine Environmental Issues	3.00
ENSC 310	Environmental Policy	3.00
ENSC 311	Applied Environmental Policy	3.00
ENSC 315	Global Food Security, Agriculture, and Environment	3.00
ENSC 320	Wildlife Issues in a Changing World	3.00
ENSC 321	Environmental Justice in Global Context	3.00
ENSC 391	Practical Applications in Sustainability	3.00
ENSC 407	Global Water Issues	3.00

ENSC 420	Gender and Environments	3.00
ENSC 482	Special Topics in Environmental Studies	3.00
ENSC 483	Special Topics in Environmental Studies II	3.00
GPHY 336	Geography, the Environment and Human Health	3.00
GPHY 339	Medical Geography	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_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 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 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 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