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 99.0 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 & GPHY 102	Human Geography and Physical Geography and Natural Resources	6.00
D. Complete the following:		
GEOL 104 & GEOL 107	The Dynamic Earth and History of Life	6.00
E. Select 6.00 units from the following:		6.00
MATH 120	Differential and Integral Calculus	
MATH 121	Differential and Integral Calculus	
MATH 123 & MATH 124	Differential and Integral Calculus I and Differential and Integral Calculus II	
Geology Core:		
F. Select 6.00 units from the following:		6.00
PHYS 104	Fundamental Physics	
PHYS 106	General Physics	
PHYS 117	Introductory Physics	
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	Surficial Processes, Sedimentation and Stratigraphy	3.00
GEOL 249	Geophysical Characterization of the Earth	3.00
H. Select 9.00 units from the following:		9.00
GEOL 300	Geological Field School	
GEOL 321	Analysis of Rock Structures	
GEOL 337	Paleontology	
GEOL 365	Geochemical Characterization of Earth Processes	
I. GEOL at the 300 level or above		9.00
Core Social Sciences and Humanities:		
J. Complete the following:		
ENSC 103	Environment and Sustainability	3.00
K. Complete the following:		
ENSC 390	Sustainability	3.00
L. 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. Select 3.00 units from the following:		3.00
BIOL 200	Diversity Of Life	
BIOL 212	Scientific Methods in Biology	
ENSC_Specialization_Options_B		
C. ENSC_Interdisciplinary_SocSci/Huma		3.00
D. ENSC_Interdisciplinary_Humanties		3.00
E. Select 6.00 units from the following		6.00
CISC 101	Elements of Computing Science	
CISC 121	Introduction to Computing Science I	
CISC 124	Introduction to Computing Science II	
WRIT 120	Fundamentals of Effective Writing	
or WRIT 125	Fundamentals of Academic Essay writing	
BIOL at the 200 level		
CHEM at the 200 level		
CISC at the 200 level		
MATH at the 200 level		
PHYS at the 200 level		
STAT at the 200 level		
GPHY_Physicalat the 200 level		
GPHY_Tech/Methods at the 200 level		
Electives		
Elective Courses		21.00
Total Units		**120.00**

3. Substitutions

A. Up to 3.0 units of Geology may be substituted for 3.0 units of the courses listed in item 2.E above.

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

4. Note

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 Geology Course List

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 and 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

GPHY_Physical

Code	Title	Units
Physical Geography		
GPHY 102	Physical Geography and Natural Resources	3.00
GPHY 203	Water Resources and Management	3.00
GPHY 204	Forests as a Global Resource	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 304	Northern and Arctic Environments	3.00
GPHY 306	Natural Environmental Change	3.00
GPHY 309	Field School in Geography	3.00
GPHY 311	Biogeochemical Processes	3.00
GPHY 312	Watershed Hydrology	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 371	Special Topics in Earth System Science	3.00
GPHY 413	Water, Energy and Carbon Cycling in the Biosphere	3.00
GPHY 415	Advanced Analysis of Earth Surface Processes	3.00
GPHY 417	Land-Use Change in the Earth System	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	3.00

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 343	Applications for Geospatial Technology for Business	3.00
GPHY 344	Cartography and Computer Aided Design	3.00
GPHY 345	Spatial Analysis	3.00
GPHY 346	GIS and Modelling for Environmental Applications	3.00
GPHY 347	Multivariate and Spatial Statistics	3.00
GPHY 348	Application Design and Customization in GIS	3.00
GPHY 349	GIScience and Public Health	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