



BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE (2012-14 CATALOG)

PRESCRIBED WORK: REQUIRED BY ALL THREE DEGREE PLANS IN THE EVS PROGRAM

Mathematics	M 408C (Differential & Integral Calculus) ¹	
Chemistry	CH 301 & CH 302 (Principles of Chemistry I & II) ² CH 204 (Introduction to Chemical Practice)	
Physics	PHY 317K & PHY 117M (General Physics I with Lab) ³	
Biology	BIO 311C & BIO 311D (Introductory Biology I & II) ⁴	
Ecology	BIO 373 & BIO 373L (Ecology & Ecology Lab) ⁵	
Geological Sciences	Geological Sciences course in Sustainability (pre-approval necessary) ⁶ GEO 401 (Physical Geology) ⁷ GEO 346C (Intro to Hydrogeology)	
Geography	GRG 335N (Landscape Ecology)	
Field Experience	EVS 311 (Introductory Field Seminar)	
Research Methods	EVS 331 (Research Methods for Environmental Science) ⁸	
Environmental and Sustainable Policy, Ethics & History (<i>choose one</i>)	BIO 337 (Renewable Resources: Envir/Future) PHL 325C (Environmental Ethics) GRG 331K (Nature, Society, and Adaptation) GRG 339K (Environment, Development & Food Production) GRG 344K (Global Food, Farming & Hunger) GRG 356 (pre-approved topics only) ⁹ GRG 356T (pre-approved topics only) ¹⁰ GRG 336C (National Parks) GRG 342C (Sustainable Development)	GRG 356C (Geo-Archaeology & Envir. History) GRG 334 (Conservation, Resources & Technology) GRG 340D (Political Ecology) SOC 321K (Environmental Sociology) SOC 321K (Building a Sustainable City) Study Abroad Options: BIO 337 Land Use Issues in Rainforest Conservation (Costa Rica) GRG 323K (S. America: Nature, Society & Sustainability –Ecuador) J 346F (Reporting on our Changing Environment – Australia)
Geographic Information Systems (<i>choose one</i>)	GEO 327G (Geographic Information Systems) ¹¹ GRG 360G (Environmental Geographic Systems)	GRG 462K (Introduction to Remote Sensing)
Climates & Oceans (<i>choose one</i>)	GEO 377P (Physical Climatology) GEO 371C (pre-approved topics only) ¹² GEO 338J (Marine Geology) GEO 347D (Global Warming) GEO 347G (Climate Systems & Discussions) GRG 333K (Climate Change) GRG 356 (Water & Watersheds) GRG 356T (pre-approved topics only) ¹³	BIO 456L (Limnology) MNS 320 (Marine Ecology) ¹⁴ MNS 440 (Limnology & Oceanography) MNS 345T (Biological Oceanography) MNS 354Q (Marine Environmental Science) MNS 356 (Ecosystem Oceanography) MNS 367K (Human Exploration & Exploitation of the Sea)
Environmental Economics, Sustainability & Business (<i>choose one</i>)	ECO 304K (Introduction to Micro-Economics) ECO 330T (Environmental Resources & Economic Growth)	
Senior Field / Research Experience	EVS 371 (Research Experience) ¹⁵	
Senior Seminars	EVS 141 (Professional Development Seminar) & EVS 151 (Research & Communication Seminar)	

¹ The two-course sequence of Differential Calculus (M 408N or 408K) and Integral Calculus (M 408S or 408L) may be taken in place of Differential & Integral Calculus (M 408C).

² Honors Chemistry I & II (CH 301H and CH 302H) may be taken in place of Principles of Chemistry I & II (CH 301 & CH 302)

³ Other 4 hour calculus-based sequences may be taken instead, specifically: Mechanics with Lab (PHY 301 & PHY 101L); Engineering Physics with Lab (PHY 303K & PHY 103M).

⁴ Honors Introduction to Genetics (BIO 315H) may be taken in place of Introductory Biology (BIO 311C & BIO 311D).

⁵ Marine Ecology (MNS 320) with either Marine Ecology Lab (MNS 120L) or MNS 152T (Topic: Marine Ecology) may be taken in place of BIO 373 & BIO 373L (Ecology & Lab). Reefs & Rainforests: Ecology, Evolution, & Cons. (BIO 337) with accompanying Maymester Seminar (NSC 109) completed through the Australia Maymester may also be taken in place of BIO 373 & BIO 373L (Ecology & Lab). The BIO 325 pre-requisite for BIO 373 may be waived for EVS students in the geography and geology tracks.

⁶ This requirement is traditionally satisfied through the Sustaining a Planet, a UGS 303 course.

⁷ Introduction to Geology (GEO 303) or The Natural World (GRG 301C) may be taken in place of Physical Geology (GEO 401).

⁸ Effective Spring 2015, EVS 331 was replaced by: EVS 121 (Research Methods) and EVS 271 (Research Experience Prep), to be taken in consecutive semesters. Students who completed EVS 331 when offered may still use the course to satisfy the Research Methods requirement.

⁹ Pre-approved GRG 356 topics for this requirement include: Children's Health & The Environment; and Environmental Health

¹⁰ Pre-approved GRG 356T topics for this requirement include: Human Health & the Environment; Farming, Food, and Global Hunger; Global Health, Local Health; Environment, Development, and Food Production; Archaeology of Climate Change; and Envir-Cultural Dynamics in Botswana.

¹¹ The GEO 420K pre-requisite for GEO 327G has been waived for EVS students in the biology and geography tracks.

¹² Pre-approved GEO 371C topics for this requirement include: Marine Geology; Glaciology; Climate Systems Discussion; and Paleo-Oceanography.

¹³ Pre-approved GRG 356T topics for this requirement include: Environmental Change and Management of Large Rivers.

¹⁴ Marine Ecology (MNS 320) cannot be used to fulfill both the Ecology and Climates & Oceans requirements.

¹⁵ Students in the EVS biology and geology tracks may take either BIO 377 (with prior approval) or BIO 478T (Natural Resource Management) instead of EVS 371. Students in the geography track may take GRG 373F (Field Techniques) or GRG 373K (Field Methods in Landscape Characterization) instead of EVS 371.



BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE (2012-14 CATALOG)
ADDITIONAL TRACK COURSEWORK: GEOGRAPHY TRACK

ADDITIONAL PRESCRIBED COURSEWORK

Writing Requirement	Two courses beyond RHE 306 or its equivalent identified with a writing flag. One of these courses must be upper-division. Three hours of writing flag must come from a course that does not otherwise satisfy a core requirement. Writing flags may be used simultaneously to fulfill other requirements, unless otherwise specified.
Foreign Language/Culture Requirement (choose <u>one</u> option)	(1) Second-semester-level proficiency in a foreign language; (2) First-semester-level proficiency in a foreign language and a three-semester-hour course in the culture of the same language area; or (3) Two three-semester-hour culture courses chosen from one foreign culture category from an approved list available at the College of Liberal Arts advising office.
Social Sciences Requirement¹⁶	Three semester hours chosen from an approved list of social science courses are required, <u>in addition to the course counted toward the social science area of the core curriculum.</u>
Cultural Expression, Human Experience and Thought (CEHET) Requirement¹⁴	Three semester hours of designated coursework from the Cultural Expression, Human Experience and Thought area are required. The course must be in a field of study in the College of Liberal Arts. A course counted toward any core curriculum requirement or any portion of the EVS Prescribed Work may not also be counted toward this requirement.
Cultural Diversity and Global Cultures Requirements	Students in the 2012-2014 catalog (only) must also complete courses bearing the Cultural Diversity and Global Cultures flags; these flags may not be satisfied by the same course.

MAJOR REQUIREMENTS

Students selecting the Geographical Sciences Track must complete thirty (30) semester hours of coursework,¹⁷ including at least eighteen (18) upper-division hours of approved course work in Geography and the Environment as follows:

Geographical Sciences (<u>both</u> required)	GRG 301C (The Natural Environment)	GRG 304E (A Changing World)
Coursework Options	GRG 301K (Weather and Climate) GRG 333C (Severe and Unusual Weather) GRG 333K (Climate Change) GRG 334C (Environmental Hazards) GRG 334K (Soils) GRG 335C (Quaternary Landscapes) GRG 335K (Mountain Geoecology) GRG 335N (Landscape Ecology) GRG 338C (Rivers & Landscapes) GRG 339 (Process of Geomorphology) GRG 346 (Human Use of the Earth) GRG 356 (pre-approved topics only) ¹⁸	GRG 356T (pre-approved topics only) ¹⁹ GRG 357 (Medical Geography) GRG 360G (Environmental Geographic Info Systems) GRG 462K (Intro to Remote Sensing) GRG 464K (Advanced Remote Sensing) GRG 366C (Comparative Ecosystems) GRG 368C (Spatial Analysis / GIS) GRG 366K (Biogeography) GRG 367K (Vegetation Ecology) GRG 470C (Advanced Geographic Info Systems) GRG 476T (pre-approved topics only)
Credit Hours Requirement	Students must take enough additional coursework to make a total of 126 hours.	

¹⁶ Courses used to satisfy the EVS Prescribed Work cannot also be used to satisfy the additional prescribed coursework requirements for the geography track but can be used to satisfy Major Requirements.

¹⁷ Courses used to satisfy the 30 hour requirement may also be used to satisfy requirements under EVS Prescribed Work

¹⁸ Pre-approved GRG 356 topics for this requirement include: GIS Applications in Social/Environmental Science; Water Resources: Latin America/Caribbean; and Water and Watersheds.

¹⁹ Pre-approved GRG 356T topics for this requirement include: Environmental Change and Management of Large Rivers; Digital Terrain Modeling; Climate Change and Vegetation Response in the Kalahari; Special Topics in GIS; Envir-Cultural Dynamics in Botswana; Primate Conservation; Landuse/Landcover Change Practicum; Anthropocene; and Human Health and the Environment.



BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE (2012-14 CATALOG)
ADDITIONAL TRACK COURSEWORK: GEOLOGY TRACK

EVS students selecting the Geological Sciences Track must complete thirty-six (36) semester hours of coursework, including at least twelve (12) upper-division hours of approved coursework in the Geological Sciences as follows:

Mathematics	M 408D (Sequences, Series, and Multivariable Calculus) ²⁰
Physics	PHY 317L & PHY 117N (General Physics II and Lab) ²¹
Geological Sciences <i>(all required)</i>	GEO 404C (Plate Tectonics & Earth History) ²² GEO 416K (Earth Materials) GEO 420K (Introduction to Field & Stratigraphic Methods) GEO 416M (Sedimentary Rocks)
Climate & Water <i>(choose one)</i> ²³	GEO 371C (pre-approved topics only) ²⁴ GEO 476M (Chemical Hydrogeology) GEO 371T (Paleoclimatology) GEO 376S (Physical Hydrology) GEO 338J (Marine Geology) GEO 377P (Physical Climatology) GEO 376E (Environmental Isotope Geochemistry) GEO 476K (Groundwater Hydrology)
Upper-Division Electives	All majors must complete nine <u>additional</u> hours of upper division coursework in the Geological Sciences.
Writing Requirement	Two courses with a substantial writing component or writing flag (one must be upper-division). Three hours of writing flag must come from a course that does not otherwise satisfy a core requirement. Writing flags may be used simultaneously to fulfill other requirements, unless otherwise specified.
Credit Hours Requirement	Student must take enough additional coursework to make a total of 126 hours.

²⁰ Multivariable Calculus (M 408M) may be taken instead of Sequences, Series, and Multivariable Calculus (M 408D) if the student took the two-course sequence of Differential Calculus (M 408N or 408K) and Integral Calculus (M 408S or 408L) in place Differential & Integral Calculus (M 408C).

²¹ Either of the following may also be used to satisfy the 2nd semester Physics requirement: Electricity and Magnetism with Lab (PHY 316 & PHY 361L); Engineering Physics II with Lab (PHY 303L & PHY 103N).

²² Life Through Time (GEO 405) may be taken in place of Plate Tectonics & Earth History (GEO 404C).

²³ Note that the same course cannot be used to satisfy the Climate & Oceans requirement under the Prescribed Coursework and the Climate & Water requirement of the geology track.

²⁴ Pre-approved GEO 371C topics for this requirement include: Marine Geology; Glaciology; Climate Systems Discussion; and Paleo-Oceanography.



BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE (2012-14 CATALOG)
ADDITIONAL TRACK COURSEWORK: BIOLOGY TRACK

Students selecting the Biological Sciences Track must complete twenty-six (26) semester hours of coursework, including at least fifteen (15) upper-division hours of approved course work in Biology and the Environment as follows:

Foreign Language/Culture <i>(choose <u>one</u> option)</i>	(1) Second-semester-level proficiency in a foreign language; (2) First-semester-level proficiency in a foreign language and a three-semester-hour course in the culture of the same language area; or (3) Two three-semester-hour courses in one foreign culture area. ²⁵	
Statistics <i>(choose <u>one</u>)</i> ²⁶	BIO 328M / STA 328M (Biostatistics) SSC 321 (Introduction to Probability and Statistics)	
Genetics and Evolution	BIO 325 (Genetics) ²⁷ and BIO 370 (Evolution)	
Conservation <i>(choose <u>one</u>)</i>	BIO 351 (Economic Botany) BIO 359 (Global Environmental Change) BIO 375 (Conservation Biology)	MNS 352 (Topic: Concepts in Conservation Biology) MNS 353 (Topic: Fisheries Ecology)
Taxon-Based Diversity <i>(choose <u>one</u> course / pair)</i>	BIO 321L (Aquatic Entomology) BIO 324 & BIO 124L (Plant Kingdom and Lab) BIO 327 & BIO 127L (General Phycology and Lab) BIO 337 (Natural History of the Protists) BIO 340L (Biology of Birds) BIO 342L (Field Ornithology) BIO 448L (Invertebrate Biology) BIO 353F (Field Entomology) BIO 453L (Entomology) BIO 354L (Ichthyology) BIO 455L (Vertebrate Natural History) BIO 262 & BIO 262L (Plant Systematics and Lab) BIO 463L (Plant Systematics)	BIO 364 (Microbial Ecology) BIO 369F (Field Herpetology) BIO 369L (Herpetology) BIO 471G (Natural History Museum Science) MNS 352 (Topic: Principles of Estuarine Ecology) MNS 352 (Topic: Marine Invertebrates) MNS 352D (Marine Botany) MNS 354 (Marine Invertebrates) MNS 354C (Biology of Fishes) MNS 354E (Aquatic Microbiology) MNS 354U (Biology of Sharks, Skates, and Rays) GEO 479M (Mammalogy)
Physiology, Neurobiology, and Behavior <i>(choose <u>one</u> course / pair)</i>	BIO 322 & BIO 122L (Seed Plants and Lab) BIO 328 & BIO 128L (Plant Physiology and Lab) BIO 438L (Animal Communication) BIO 339 (Micro Organisms) BIO 345E (Endocrinology) BIO 346 (Human Biology) BIO 359J (Behavioral Ecology) BIO 359K (Principles of Animal Behavior)	BIO 359R (Animal Sexuality) BIO 361 (Human Infectious Diseases) BIO 361T (Comparative Animal Physiology) BIO 465M (Experimental Methods in Physiology) BIO 365R (Vertebrate Neurobiology) BIO 365S (Vertebrate Physiology) BIO 371L (Experimental Physiology) MNS 355C (Physiology of Fishes)
Writing Requirement	Two courses with a substantial writing component or writing flag (one must be upper-division). Three hours of writing flag must come from a course that does not otherwise satisfy a core requirement. Writing flags may be used simultaneously to fulfill other requirements, unless otherwise specified.	
Upper-Division Coursework	All majors must complete fifteen hours of upper division biology coursework, including one field/lab course. ²⁸	
Credit Hours Requirement	Student must take enough additional coursework to make a total of 126 hours.	

²⁵ These courses must be chosen from an approved list available in the dean's office and the college advising centers.

²⁶ This requirement may also be fulfilled with any upper-division Statistics or Probability course with the consent of the student's undergraduate adviser.

²⁷ Honors Genetics (BIO 325H) can may be taken in place of Genetics (BIO 325) if the student took Honors Introduction to Genetics (BIO 315H) in place of Introductory Biology (BIO 311C & BIO 311D).

²⁸ Courses used to satisfy the biology track requirements may be used to satisfy this upper division coursework component.