

Department of Earth Sciences, School of Science
BS Environmental Science – Bachelor of Science - Granted by Indiana University
IUPUI GENERAL EDUCATION CORE - 30 credits

Writing Competency (1 course)	3 cr. ____
Speaking and Listening Competency (1 course)	3 cr. ____
Analytical Reasoning Competency (2 courses)	6 cr. ____
Life and Physical Sciences Competency (2 courses)	6 cr. ____
Arts / Humanities / Social Sciences (3 courses)	9 cr. ____
Cultural Understanding Competency (1 course)	3 cr. ____

SCHOOL OF SCIENCE BACCALAUREATE REQUIREMENTS

<i>First Year Experience - SCI-I 120 Windows on Science.</i>	1 cr. ____
<i>English Composition and Communication Competency</i>	
ENG-W 131 English Composition I	3 cr. ____
2nd Composition Course	3 cr. ____
COMM-R 110 Speech Communication	3 cr. ____
<i>Arts & Humanities, Social Sciences, Cultural Understanding Competency</i>	
See Gen Ed Core above	12 cr. ____
<i>Life and Physical Sciences Competency</i>	
BIOL-K 101 Concepts of Biology I	5 cr. ____
BIOL-K 103 Concepts of Biology II	5 cr. ____
CHEM-C 105 Principles of Chemistry I	3 cr. ____
CHEM-C 106 Principles of Chemistry II	3 cr. ____
PHYS-P 201 General Physics I	5 cr. ____
PHYS-P 202 General Physics II	5 cr. ____
<i>Analytical Reasoning Competency</i>	
MATH 22100 Calculus for Technology I	3 cr. ____
MATH 22200 Calculus for Technology II	3 cr. ____
STAT 30100 or SPEA-K 300 or STAT-N 501	3 cr. ____
<i>Computer Science Competency</i>	
CSCI-N 207 or other approved computer course	3 cr. ____
<i>Candidacy for Graduation - CAND 99100 (last semester)</i>	0 cr. ____

BS ES PROGRAM / MAJOR COMPETENCIES

No grade below C- will be accepted in any of these courses.

Choose ONE of the following

GEOL-G 107 / G-117 Environmental Geology	
GEOL-G 110 / G-120 Physical Geology	4 cr. ____

GEOL-G 205 Reporting Skills in Geoscience	3 cr. ____
GEOG-G 303 Weather and Climate	3 cr. ____
GEOL-G 306 Earth Materials	4 cr. ____
BIOL-K 341 Principles of Ecology and Evolution	3 cr. ____
CHEM-C 341 Organic Chemistry I	3 cr. ____
GEOL-G 436 Earth Observation from Space	3 cr. ____

Choose ONE of the following (EW Concentration must take G334)

GEOL-G 334 Sedimentology and Stratigraphy ¹	4 cr. ____
GEOG-G 338 Introduction to GIS	

Choose ONE of the following

GEOL-G 415 Principles of Geomorphology ²	
GEOG-G 475 Climate Change	3 cr. ____

Choose ONE of the following

SPEA-V 311 Natural Resources and Environmental Policy	
GEOG-G 315 Environmental Conservation	
GEOG-G 310 Human Impact on the Environment	3 cr. ____

CONCENTRATION REQUIREMENTS – 15 credits

Choose ONE (1) concentration. See next column.

GENERAL ELECTIVES – up to 12 credits *

_____ cr. ____	_____ cr. ____
_____ cr. ____	_____ cr. ____
_____ cr. ____	_____ cr. ____

* If SoS requirements used to satisfy Gen Ed Core

1) EARTH AND WATER RESOURCES CONCENTRATION

No grade below C- will be accepted in any of these courses.

GEOL-G 430 Hydrology	3 cr. ____
GEOL-G 406 Geochemistry	3 cr. ____
GEOL-G 482 Environmental Microbiology	3 cr. ____

For Water Resources focus, choose ONE of the following:

GEOL-G 431 Wetland Ecosystems	3 cr. ____
GEOL-G 490 Stream Ecosystems and Restoration	3 cr. ____
GEOL-G 451 Principles of Hydrogeology	3 cr. ____

For Biogeochemistry focus, choose ONE of the following:

GEOL-G 486 Soil Biogeochemistry	3 cr. ____
GEOL-G 483 Isotope Geochemistry	3 cr. ____

Required Capstone:

GEOL-G 488 Global Cycles	3 cr. ____
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2) ENVIRONMENTAL REMOTE SENSING AND SPATIAL ANALYSIS CONCENTRATION

No grade below C- will be accepted in any of these courses.

Choose ONE of the following

GEOG-G 336 Environmental Remote Sensing	
GEOG-G 338 Introduction to GIS ³	3 cr. ____

Choose ONE of the following

GEOG-G 337 Computer Cartography and Graphics	
GEOL-G 487 Remote Sensing of Global Change	3 cr. ____

Choose TWO of the following:

GEOG-G 436 Advanced Remote Sensing	3 cr. ____
GEOG-G 438 Advanced GIS	3 cr. ____
GEOG-G 442 Seminar in Remote Sensing	3 cr. ____
GEOG-G 488 Applied Spatial Statistics	3 cr. ____
GEOL-G 490 Planetary Remote Sensing	3 cr. ____

Required Capstone:

GEOG-G 439 Seminar in GIS	3 cr. ____
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3) ENVIRONMENTAL MANAGEMENT CONCENTRATION

No grade below C- will be accepted in any of these courses.

PBHL-A 424 Environmental Health Science and Technology: Managing Water and Waste	3 cr. ____
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PBHL-A 451 Air Pollution and Control	3 cr. ____
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PBHL-A 400 Public Health Risk Analysis, Communication and Management	3 cr. ____
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For Pollution Assessment focus:

PBHL-A 433 Industrial Hygiene	3 cr. ____
PBHL-A 460 Techniques in Environmental Science and Health (Required Capstone)	4 cr. ____

For Policy and Planning focus:

GEOG-G 438 Advanced GIS	3 cr. ____
PBHL-A 416 Environmental Health Policy (Required Capstone)	3 cr. ____

For Occupational Safety and Health focus:

PBHL-A 410 Intro. to Environmental Toxicology	3 cr. ____
PBHL-A 433 Industrial Hygiene (Required Capstone)	3 cr. ____

¹ Earth and Water Resources Concentration MUST take GEOL-G334

² GEOL-G334 is a prerequisite to GEOL-G415

³ If GEOG-G338 was used in Major Competency, must take GEOG-G336.

BSES Degree Sample Plan-of-Study

First Year

Fall Semester (1)		Spring Semester (2)	
Course	Credits	Course	Credits
SCI-I 120 Windows on Science	1	GEOL-G 306 Earth Materials	4
GEOL-G 110 Phys Geo or GEOL-G107 Env Geo	3	CHEM-C 106 Principles of Chemistry II	3
GEOL-G 120 Phys Geo Lab or GEOL-G117 Env Geo Lab	1	MATH 22200 Calculus for Technology II	3
CHEM-C 105 Principles of Chemistry I	3	2nd Composition Course	3
MATH 22100 Calculus for Technology I	3	COMM-R 110 Speech Communication	3
ENG-W 131 English Composition I	3		

Second Year

Fall Semester (3)		Spring Semester (4)	
GEOL-G 205 Reporting Skills in Geoscience	3	GEOG-G 303 Weather and Climate	3
BIOL-K 101 Concepts of Biology I	5	BIOL-K 103 Concepts of Biology II	5
PHYS-P 201 General Physics I	5	PHYS-P 202 General Physics II	5
CSCI-N 207 or other approved computer course	3	SPEA-V 211, GEOG-G 315, or GEOG-G 310	3

Third Year EARTH AND WATER RESOURCES CONCENTRATION

Fall Semester (5)**		Spring Semester (6)**	
GEOL-G 334 Sedimentology and Stratigraphy	4	GEOL-G 482 Environmental Microbiology	3
BIOL-K 341 Principles of Ecology and Evolution	3	CHEM-C 341 Organic Chemistry I	3
GEOL-G 406 Geochemistry	3	GEOL-G 415 Geomorphology	3
GEOL-G 430 Hydrology	3	Arts / Humanities / Social Sciences Course	3
Cultural Understanding Course	3	Elective	3

Fourth Year EARTH AND WATER RESOURCES CONCENTRATION

Fall Semester (7)**		Spring Semester (8)**	
STAT 30100 or SPEA-K 300 or STAT-N 501	3	GEOL-G 488 Global Cycles	3
GEOL-G 486 Soil Biogeochemistry	3	Arts / Humanities / Social Sciences Course	3
GEOL-G 436 Earth Observation from Space	3	Elective	3
Arts / Humanities / Social Sciences Course	3	Elective	3
Elective	3	CAND 99100	0

Third Year ENVIRONMENTAL REMOTE SENSING AND SPATIAL ANALYSIS CONCENTRATION

Fall Semester (5)**		Spring Semester (6)**	
GEOL-G 334 Sedimentology and Stratigraphy	4	GEOG-G 475 Climate Change	3
BIOL-K 341 Principles of Ecology and Evolution	3	CHEM-C 341 Organic Chemistry I	3
GEOL-G 436 Earth Observation from Space	3	GEOG-G 336 Environmental Remote Sensing	3
GEOG-G 338 Introduction to GIS	3	GEOG-G 438 Advanced GIS	3
Cultural Understanding Course	3	Arts / Humanities / Social Sciences Course	3

Fourth Year ENVIRONMENTAL REMOTE SENSING AND SPATIAL ANALYSIS CONCENTRATION

Fall Semester (7)**		Spring Semester (8)**	
GEOG-G 439 Seminar in GIS	3	GEOL-G 487 Remote Sensing of Global Change	3
STAT 30100 or SPEA-K 300 or STAT-N 501	3	GEOG-G 488 Spatial Statistics or GEOG-G 436 Adv. RS	3
Arts / Humanities / Social Sciences Course	3	Arts / Humanities / Social Sciences Course	3
Elective	3	Elective	3
Elective	3	CAND 99100	0

Third Year ENVIRONMENTAL MANAGEMENT CONCENTRATION

Fall Semester (5)**		Spring Semester (6)**	
GEOL-G 334 Sedimentology and Stratigraphy	4	GEOG-G 475 Climate Change	3
BIOL-K 341 Principles of Ecology and Evolution	3	CHEM-C 341 Organic Chemistry I	3
GEOL-G 436 Earth Observation from Space	3	PBHL-A 424 Environmental Health Science	3
STAT 30100 or SPEA-K 300 or STAT-N 501	3	PBHL-A 400 Public Health Risk Analysis	3
Cultural Understanding Course	3	Elective	3

Fourth Year ENVIRONMENTAL MANAGEMENT CONCENTRATION

Fall Semester (7)**		Spring Semester (8)**	
PBHL-A 451 Air Pollution and Control	3	Focus Capstone	3
Focus Course	3	Arts / Humanities / Social Sciences Course	3
Arts / Humanities / Social Sciences Course	3	Elective	3
Arts / Humanities / Social Sciences Course	3	Elective	3
Elective	3	CAND 99100	0

***this is one example of a plan-of-study, requirement course choices offer some flexibility in semesters 5-8, consult your advisor for accurate planning.*