

**Environmental Science – Bachelor of Science**  
**Granted by Indiana University and offered through the Department of Earth Sciences**

**Required: SCI-I 120 Windows on Science – 1credit** 1 cr. \_\_\_\_  
 With permission another Learning Community may be substituted.

**AREA IV MAJOR CORE and CONCENTRATION – 40-41 credits**  
 (No grade below C- will be accepted in any of these courses.)

**AREA I COMMUNICATION – 9 credits**

- A. English Composition – 6 credits  
 (Grade of a C or better in each course is required.)
- ENG-W 131 (ENG-W 140) English Composition I 3 cr. \_\_\_\_
- Second composition course  
 ENG-W 132 (ENG-W 150) or ENG-W 231 3 cr. \_\_\_\_  
 GEOL-G 205 may be used as a second composition course.

- B. Speech Communication – 3 credits  
 COMM-R 110 Speech Communication 3 cr. \_\_\_\_

**AREA II FOREIGN LANGUAGE**

No foreign language proficiency is required for the BSES degree.

**AREA III GENERAL EDUCATION REQUIREMENTS**

- A. Humanities, Social Sciences, & World Cultures– 12 credits
- HIST-H 114 Western Civilization II 3 cr. \_\_\_\_
- One course each from List H, S and C.  
 See School of Science Course List under checksheets.
- List H: \_\_\_\_\_ 3 cr. \_\_\_\_  
 List S: \_\_\_\_\_ 3 cr. \_\_\_\_  
 List C: \_\_\_\_\_ 3 cr. \_\_\_\_

- B. Junior/Senior Integrator  
 Not required for the BSES degree

- C. Physical and Biological Sciences – 33 credits  
 (No grade below C- will be accepted in any of these courses.)
- 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. \_\_\_\_  
 GEOL-G 107 Environmental Geology 3 cr. \_\_\_\_  
 GEOL-G 110 Physical Geology 3 cr. \_\_\_\_  
 GEOL-G 120 Physical Geology Laboratory  
 -OR-  
 GEOL-G117 Environmental Geology Laboratory 1 cr. \_\_\_\_  
 PHYS 201 General Physics I 5 cr. \_\_\_\_  
 PHYS 202 General Physics II 5 cr. \_\_\_\_

- D. Math and Computer Science – 12 credits  
 (No grade below C- will be accepted in any of these courses.)
- MATH 22100 Calculus for Technology I 3 cr. \_\_\_\_  
 MATH 22200 Calculus for Technology II 3 cr. \_\_\_\_  
 CSCI-N 207 or other approved course 3 cr. \_\_\_\_  
 Statistics course (STAT 301 or SPEA-K 300) 3 cr. \_\_\_\_

- A. Core Requirements – 25 credits
- GEOL-G 221 Mineralogy  
 -OR- 4 cr. \_\_\_\_  
 GEOL-G 306 Earth Materials
- CHEM-C 341 Organic Chemistry I 3 cr. \_\_\_\_
- PBHL-A 316 Environmental Health Science 3 cr. \_\_\_\_  
 PHIL-P 237 Environmental Ethics 3 cr. \_\_\_\_  
 PBHL-A 459 Environ. Sci. and Health Data Analysis 3 cr. \_\_\_\_  
 or an approved field methods course
- GEOG-G 303 Weather and Climate  
 -OR- 3 cr. \_\_\_\_  
 GEOL-G 430 Principles of Hydrology\*\*
- BIOL-K 341 Principles of Ecology and Evolution  
 -OR- 3 cr. \_\_\_\_  
 GEOL-G 490 Geomicrobiology  
 -OR-  
 GEOG-G 307 Biogeography
- GEOG-G 336 Introduction to Remote Sensing  
 -OR- 3 cr. \_\_\_\_  
 GEOG-G 338 Introduction to GIS

- B. Concentration Requirements – 15-16 credits  
 See page 2 for specific course requirements.
1. Earth and Water Resources concentration – 15-16 credits
    - a) Earth Resources option
    - b) Water Resources option
  2. Environmental Management concentration – 15-16 credits
    - a) Pollution Assessment option
    - b) Policy and Planning option
    - c) Occupational Safety and Health option
  3. Environmental Remote Sensing and Spatial Analysis concentration – 15 credits

\*\* GEOL-G 430 required for Earth and Water Resources Concentration.

**AREA IV (B) CONCENTRATION – 15-16 credits**  
(No grade below C- will be accepted in any of these courses.)

**1. Earth and Water Resources concentration – 15-16 credits**

*FOUR courses from the following:*

GEOLOG-G 406 Introduction to Geochemistry	3 cr. ____
GEOLOG-G 431 Wetland Ecosystems	3 cr. ____
GEOLOG-G 490 Feeding the City	3 cr. ____
GEOLOG-G 451 Principles of Hydrogeology	3 cr. ____
GEOLOG-G 486 Soil Biogeochemistry	3 cr. ____
GEOLOG-G 490 Stream Ecosystems and their Restoration	3 cr. ____
GEOG-G 315 Environmental Conservation	3 cr. ____
GEOG-G 421 Environments of Tropical Lands	3 cr. ____
GEOG-G 475 Global Climate Change	3 cr. ____
GEOG-G 488 Applied Spatial Statistics	3 cr. ____
PBHL-A 410 Intro. to Environmental Toxicology	3 cr. ____
PBHL-A 460 Techniques in Envir Science & Health	4 cr. ____

*Required Capstone*

GEOLOG-G 490 Global Cycles	3 cr. ____
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**2. Environmental Management concentration – 15-16 credits**

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

And courses from one of the following options:

a) Pollution Assessment option

PBHL-A 433 Industrial Hygiene	3 cr. ____
PBHL-A 460 Techniques in Environmental Science and Health ( <i>capstone requirement</i> )	4 cr. ____

b) Policy and Planning option

GEOG-G 438 Advanced GIS	3 cr. ____
PBHL-A 416 Environmental Health Policy ( <i>capstone requirement</i> )	3 cr. ____

c) Occupational Safety and Health option

PBHL-A 410 Intro. to Environmental Toxicology	3 cr. ____
PBHL-A 433 Industrial Hygiene ( <i>capstone requirement</i> )	3 cr. ____

**3. Environmental Remote Sensing and Spatial Analysis concentration – 15 credits**

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

GEOG-G 337 Computer Cartography and Graphics	
-OR-	
GEOLOG-G 490 Hyperspectral Remote Sensing –or- Earth Observation from Space	3 cr. ____
-OR-	
INFO-I 400 Programming for GIS	

*Two courses chosen from the following (6 credits):*

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. ____
GEOLOG-G 490 Planetary Remote Sensing	3 cr. ____

*Required Capstone*

GEOG-G 439 Seminar in GIS	3 cr. ____
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**Electives – 11-12 credits**

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**GENERAL INFORMATION**

- A. A minimum of 122 credit hours must be completed for graduation. This total must include residence of at least two semesters at IUPUI and completion of at least 32 credit hours at the 300-level or above taken at IUPUI.
- B. No more than 6 credit hours of athletic, studio, clinical, performing arts course work will count towards the degree.
- C. Independent study (correspondence) courses may be taken for general electives up to a maximum of 12 credit hours with approval from the School of Science.
- D. Courses taken on the pass/fail option will only count as general electives and not towards any degree requirements of the School or Program.
- E. For other information on School of Science Area requirements, see <http://www.iupui.edu/~bulletin/iupui/2012-2014/schools/purdue-science/undergraduate/bachelor-requirements.shtml>
- F. For School of Science General Requirements for Undergraduate students, see <http://www.iupui.edu/~bulletin/iupui/2012-2014/schools/purdue-science/undergraduate/general.shtml>