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

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

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. 

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

A. Core Requirements – 25 credits
GEOL-G 221 Mineralogy 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
or an approved field methods course
GEOG-G 303 Weather and Climate -OR-
GEOL-G 430 Principles of Hydrology** 3 cr. 
BIOL-K 341 Principles of Ecology and Evolution -OR-
GEOL-G 490 Geomicrobiology -OR-
GEOG-G 307 Biogeography
GEOG-G 336 Introduction to Remote Sensing -OR-
GEOG-G 338 Introduction to GIS 3 cr. 

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:

- GEOL-G 406 Introduction to Geochemistry  3 cr. ____
- GEOL-G 431 Wetland Ecosystems  3 cr. ____
- GEOL-G 451 Principles of Hydrogeology  3 cr. ____
- GEOL-G 486 Soil Biogeochemistry  3 cr. ____
- GEOL-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
- GEOL-G 490 Global Cycles  3 cr. ____

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 (capstone requirement)  4 cr. ____

b) Policy and Planning option
- GEOG-G 438 Advanced GIS  3 cr. ____
- PBHL-A 416 Environmental Health Policy (capstone requirement)  3 cr. ____

c) Occupational Safety and Health option
- PBHL-A 410 Intro. to Environmental Toxicology  3 cr. ____
- PBHL-A 433 Industrial Hygiene (capstone requirement)  3 cr. ____

Required Capstone
- GEOG-G 439 Seminar in GIS  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-  3 cr. ____
GEOG-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. ____
- GEOL-G 490 Planetary Remote Sensing  3 cr. ____

Required Capstone
- GEOG-G 439 Seminar in GIS  3 cr. ____

Electives – 11-12 credits

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, performing arts course work will count towards the degree.
C. Independent study (correspondence) courses may be take 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