

IUPUI University College
School of Science

Environmental Science – Bachelor of Science

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

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, & Comparative 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 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 221 Calculus for Technology I 3 cr. _____
MATH 222 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 – 44 to 45 credits

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

- A. Core Requirements – 26 credits
- GEOL-G 221 Mineralogy
-OR- 4 cr. _____
GEOL-G 306 Earth Materials
- SPEA-E 326 Mathematical Methods in Environ. Sci. 3 cr. _____
SPEA-H 316 Environmental Science and Health 3 cr. _____
PHIL-P 237 Environmental Ethics 3 cr. _____
SPEA-H 459 Environ. Sci. and Health Data Analysis 4 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. _____
GEOG-G 307 Biogeography
- GEOG-G 336 Introduction to Remote Sensing
-OR- 3 cr. _____
GEOG-G 338 Introduction to GIS

- B. Concentration Requirements – 18 to 19 credits
See page 2 for specific course requirements.

1. Earth and Water Resources concentration – 18 credits
 - a) Earth Resources option
 - b) Water Resources option
2. Environmental Management concentration – 18 to 19 credits
 - a) Pollution Assessment option
 - b) Policy and Planning option
 - c) Occupational Safety and Health option
3. Environmental Remote Sensing and Spatial Analysis concentration – 18 credits

AREA IV (B) CONCENTRATION – 18 to 19 credits

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

1. Earth and Water Resources concentration – 18 credits

CHEM-C 341 Organic Chemistry I 3 cr. ____
 GEOL-G 431 Wetland Ecosystems 3 cr. ____
 GEOL-G 486 Soil Biogeochemistry 3 cr. ____

Capstone Requirement

GEOL-G 445 Analytical Methods for Natural Systems 3 cr. ____
 -OR-
 GEOL-G 490 Stream Ecosystems and their Restoration 3 cr. ____

and courses from one of the following two options:

a) Earth Resources option

GEOL-G 406 Introduction to Geochemistry 3 cr. ____
 and
 BIOL-K 356 Microbiology 3 cr. ____
 -OR-
 SPEA-E 410 Intro. to Environmental Toxicology 3 cr. ____

b) Water Resources option

GEOL-G 451 Principles of Hydrogeology 3 cr. ____
 and
 SPEA-E 455 Limnology 4 cr. ____
 -OR-
 SPEA-E 410 Intro. to Environmental Toxicology 3 cr. ____

2. Environmental Management concentration – 18 to 19 credits

CHEM-C 341 Organic Chemistry I 3 cr. ____
 SPEA-E 431 Water Supply and Wastewater Management 3 cr. ____
 SPEA-E 451 Air Pollution and Control 3 cr. ____
 SPEA-E 452 Solid and Hazardous Waste Management 3 cr. ____

And courses from one of the following options:

a) Pollution Assessment option

SPEA-H 433 Industrial Hygiene 3 cr. ____
 SPEA-H 460 Techniques in Environmental Science and Health (*capstone requirement*) 3 cr. ____

b) Policy and Planning option

GEOG-G 438 Advanced GIS 3 cr. ____
 SPEA-H 416 Environmental Health Policy (*capstone requirement*) 3 cr. ____

c) Occupational Safety and Health option

SPEA-E 410 Introduction to Environmental Toxicology 3 cr. ____
 SPEA-H 433 Industrial Hygiene (*capstone requirement*) 3 cr. ____

3. Environmental Remote Sensing and Spatial Analysis concentration – 18 credits

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

b.) GEOG-G 337 Computer Cartography and Graphics 3 cr. ____
 -OR-
 GEOL-G 546 Planetary Remote Sensing 3 cr. ____
 -OR-
 INFO-I 400 Programming for GIS 3 cr. ____

c.) Three courses chosen from (9 credits):

__ GEOG-G 436 Advanced Remote Sensing: Digital Imaging Processing
 __ GEOG-G 438 Advanced Geographic Information Systems
 __ *GEOG-G 442 Seminar in Remote Sensing
 __ GEOG-G 488 Applied Spatial Statistics
 __ GEOL-G 436 Geologic Remote Sensing

d.) GEOG-G 439 Seminar in GIS 3 cr. ____
 (*capstone requirement*)

*Represents a new course, pending approval.

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.