

ENVIRONMENTAL SCIENCE AND STUDIES

Albro Falconer Manley Science Center

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<http://www.spelman.edu/academics/programs/environmental/index.shtml>



ENVIRONMENTAL SCIENCE AND STUDIES PROGRAM FACULTY

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ENVIRONMENTAL SCIENCE AND STUDIES PROGRAM



ENVIRONMENTAL SCIENCE AND STUDIES (ESS) PROGRAM

Consistent with the College's mission, the Environmental Science and Studies (ESS) Program at Spelman recognizes the global changes and responses for attaining a more sustainable environment. The Program seeks to create a learning environment in which our students can better understand these changes and be given a greater voice in planning for conservation through an interdisciplinary environmental science curriculum that is designed to enhance scientific inquiry and to strengthen scientific competence.

GOALS

The ESS Program aims to prepare students for graduate studies and provide opportunities for careers in environmental sciences, natural sciences, public health, and medicine.

OBJECTIVES

Through the course sequence in ESS, students will be able to:

- Recognize major concepts in environmental sciences understanding of the environment;
- Develop analytical skills, critical thinking, and demonstrate problem-solving skills using scientific techniques;
- Demonstrate the knowledge and training for entering graduate or professional school, or the job market.

REQUIREMENTS FOR ESS MAJOR

Students must complete all core requirements and major cognate courses, as well as 12 approved electives with a grade of "C" or better.

Major Core Courses

ES 211	Introduction to Environmental Sciences and Lab (4)
BIO/ES 225	Ecology (Includes Group Projects) (4)
CHEM/ES 453	Environmental Chemistry (3)
ES 403	Environmental Science Seminar (2)
ES 435	Research in Environmental Science (3)

Major Cognate Courses

BIO 115 & 120	Organismal Form & Function & Biology of the Cell (8)
CHEM 111 & 112	General Chemistry and Labs (8)
CHEM 231 & 232	Organic Chemistry and I & II and Labs (10)
CIS 121	Computer Science (4)
MATH 211 & 212	Applied Calculus (8) OR
MATH 231 & 232	Calculus I & II
MATH 205 OR 355	General Statistics (4) OR Biostatistics
PHY 111 & 112 OR	General Physics I & II (8)
PHY 151 & 241	Physics I & II (8)
CHEM/ES 411	Toxicology (3)

Electives

Students must select at least 12 credit hours from those listed below

BIO/ES 314	Environmental Biology (4)
BIO 233	Microbiology (4)
BIO 312	Genetics (4)
BIO 471	Cell and Molecular Biology (4)
CHEM 311	Biochemistry (4)
CHEM 301	Analytical Chemistry and Lab (4)
CIS/ES 437	Computer Simulation (4)
ES 200	Introduction to Environmental Health (4)
ES 251	Soil and Atmospheric Sciences (4)
ES 252	Introduction to Geosciences
ES 384	Industrial Ecology (4)
MATH 353	Decision Sciences (4)
MATH 358	Mathematical Models (4)
MATH 455	Probability and Statistics (4)
MATH 470	Special Topic: Environmental Statistics Practicum (2)
PSC 320	Environmental Policy and Politics (3)

Free Electives

May be chosen to complete the 120 hours required for graduation.

REQUIREMENTS FOR ENVIRONMENTAL STUDIES MINOR (6 course minimum requirement)

Core Courses (2 Courses)

ES 211	Introduction to Environmental Sciences (4)
PSC 320	Environmental Policy and Politics (3)

Capstone Experience (One 4-credit hour course)

The Capstone Experience may be a 4-credit hour independent study/research course, field research, or an approved seminar.

ES 499	Independent Study
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Electives

Students must select 3 courses dealing with environmental issues in Science/Humanities, Health, Natural Science, or Information Technology

ESS MAJOR SUGGESTED COURSE SEQUENCE

Freshman Year

Biology 115 (4)	Biology 120 (4)
Calculus 211/231 (4)	Calculus 212/232 (4)
English 103 (4)	Fine Arts (4)
African Diaspora 111 (4)	African Diaspora 112 (4)
Freshman Orientation (0)	Freshman Orientation (0)
16	16

Sophomore Year

Gen Chem 111 & Lab (4)	Gen Chem 112 & Lab (4)
Computer	Statistics 205/355 (4)
Programming 121 (4)	
Foreign Language 201 (4)	Foreign Language 202 (4)
Social Science (4)	Intro to Env Sci 211 (4)
Physical Education (1)	Physical Education (1)
Sophomore Assembly (0)	Sophomore Assembly (0)
17	17

Junior Year

Physics 111/151 (4)	Physics 112/152 (4)
Org Chem 231 & Lab (5)	Org Chem 232 & Lab (5)
Humanities (4)	Int'l/Women Studies (4)
ESS Elective (4)	Ecology 225 or Env Biology 314 (4)
17	17

Senior Year

Env Chem 453 (3)	ESS Elective (4)
ESS Seminar 403 (2)	ESS Elective (4)
ESS Research 435 (3)	Elective (4)
Elective (4)	Elective (4)
Elective (4)	
16	16

REQUIREMENTS FOR ENVIRONMENTAL HEALTH MINOR

Core Courses (5 Courses)

ES 200	Introduction to Environmental Health
CHEM/ES 411	Toxicology
Epidemiology	Morehouse College
Math	General Statistics
Capstone Experience	One 4-credit hour course

Electives (1 Course) Students must select one 4-credit hour Environmental Health elective