BS in Environmental Science and Sustainability (285824) MAP Sheet
Life Sciences, Plant and Wildlife Sciences
For students entering the degree program during the 2022-2023 curricular year.

University Core and Graduation Requirements
University Core Requirements:
Requirements: Classes Hours Classes
Religion Cornerstones
Teachings and Doctrine of The Book of Mormon 12.0 REL A 275
Jesus Christ and the Everlasting Gospel 12.0 REL A 250
Foundations of the Restoration 12.0 REL C 225
The Eternal Family 12.0 REL C 200
The Individual and Society
American Heritage 1-2 3-6.0 from approved list
Global and Cultural Awareness 1 3.0 from approved list
Skills
First Year Writing 13.0 from approved list
Advanced Written and Oral Communications 13.0 WRTG 316 recommended
Quantitative Reasoning 13-4.0 from approved list
Languages of Learning (Math or Language) 13-4.0 MATH 112, or 119 or STAT 121 recommended
Arts, Letters, and Sciences
Civilization 113.0 from approved list
Civilization 213.0 from approved list
Arts 13.0 from approved list
Letters 13.0 from approved list
Biological Science 13.0 PWS 150
Physical Science 27.0 CHEM 105*, plus one course from approved list
Social Science 13.0 from approved list
Core Enrichment: Electives
Religion Electives 3-46.0 from approved list
Open Electives Variable Variable personal choice
Graduation Requirements:
Minimum residence hours required 30.0
Minimum hours needed to graduate 120.0
Suggested Sequence of Courses
Freshman Year
1st Semester
PWS 151.0
PWS 2823.0
PWS 2831.0
Chemistry elective 3.0-4.0
1st Year Writing or American Heritage 3.0
Religion Cornerstone elective 2.0
Total Hours 13-14.0
2nd Semester
PWS 3053.0
PWS 3061.0
Chemistry elective 3.0-4.0
Social Science 3.0
1st Year Writing or American Heritage 3.0
Religion Cornerstone elective 2.0
Total Hours 15-16.0

Sophomore Year
3rd Semester
PWS 3653.0
PWS 3661.0
Civilization 13.0
Language of Learning 3.0
Physical Science elective 3.0
Religion Cornerstone elective 2.0
Total Hours 15.0

4th Semester
PDBIO 305, PWS 340 or PWS 4403-4.0
Major elective 3.0
Global & Cultural Awareness 3.0
Civilization 22.0
General elective 3.0
Religion Cornerstone elective 2.0
Total Hours 16-17.0

Junior Year
5th Semester
PWS 350 or BIO 3503.0
Experiential Learning elective 2-4.0
Quantitative Reasoning 3.0
Arts or Letters 3.0
Religion elective 2.0
Total Hours 13-15.0

6th Semester
PWS 3753.0
Major electives 6.0
Adv. Written & Oral Communication elective 3.0
General elective 2.0
Religion elective 2.0
Total Hours 16.0

Senior Year
7th Semester
Major electives 9.0
Arts or Letters 3.0
General electives 2.0
Religion elective 2.0
Total Hours 16.0

8th Semester
Major electives 7.0
General electives 9.0
Total Hours 16.0

Note: Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

Note: The above course of study provides a guide in planning. However, to meet special needs and interests of each student, the courses taken and
the order in which they are taken may require alteration. Study the requirements, plan a course of study, and consult with an advisor early in the program. This will save considerable time and minimize frustration.

BS in Environmental Science and Sustainability (285824)2022-2023 Program Requirements (60 Credit Hours)

**Recommended**

**Recommended GEs**
- GEOL 101 - Introduction to Geology 3.0
- HIST 290 - Nature and History: The Earth's Environmental Past 3.0
- PHSCS 137 - Energy, Climate, and the Environment 3.0
- *PWS 150 - Environmental Biology 3.0
- STAT 121 - Principles of Statistics 3.0

**requirement 1 Complete 10 courses**

**Environmental Science Core**
- PWS 155 - Careers in Environmental Science 1.0
- PWS 250 - Field Ecology 3.0
- PWS 282 - Soil Science 3.0
- PWS 283 - Soil Science Laboratory 1.0
- PWS 305 - Watershed Ecology 3.0
- PWS 306 - Watershed Ecology Laboratory 1.0
- PWS 365 - Biogeochemistry 3.0
- PWS 366 - Biogeochemistry Laboratory 1.0
- PWS 440 - Plant Physiological Ecology 3.0
- PWS 480 - Environmental Capstone: Data Analysis and Writing 3.0

**requirement 2 Complete 3 courses**

**Sustainability Core. Complete 8-9 hours from the following courses with at least one being PWS 375 or PWS 385.**
- BIO 370 - Bioethics 2.0
- GEOG 310 - Introduction to Urban and Regional Planning 3.0
- HLTH 322 - Environmental Health 3.0
- IAS 220 - Introduction to Development Studies 3.0
- IHUM 280R - Sophomore Seminar: Humanities and the Environment 3.0
- MSB 375 - Social Impact: Do Good Better 3.0
- PWS 180 - Climate Change: Science and Solutions 3.0
- PWS 375 - Policies and Laws of Aquatic Systems 3.0
- PWS 385 - Policies and Laws of Terrestrial Systems 3.0
- PWS 417 - Rangeland Planning and GIS 3.0
- PWS 420 - International Agricultural Development 3.0

**requirement 3 Complete 1 course**

**Statistics**
- GEOG 222 - Statistics for Geographers 1 3.0
- STAT 121 - Principles of Statistics 3.0

**requirement 4 Complete 3.0 hours from the following course(s)**

**Experiential Learning. Students may enroll in PWS 494R more than once for a total of 3.0 credit hours**
- PWS 292R - Introduction to Mentored Learning Experience 1.0v
- PWS 399R - Research Internship 9.0v
- PWS 494R - Mentored Learning Experience 6.0v

You may take up to 3 credit hours.

**requirement 5 Complete 24.0 hours from the following option(s)**

Complete 24 hours from the following list of general electives. This list is organized into suggested career tracks that students may find useful, but students may choose any combination of the courses listed below to fulfill their 24 hours.

**Ecosystem Ecology Track**
Complete the following: CHEM 285, GEOG 307, BIO 350, BIO 420, BIO 542, BIO 455, PWS 215, PWS 411, PWS 417, PWS 419, and PWS 472.

Sustainable Development Track
Complete the following: ECON 110, HLTH 480, IAS 220, IHUM 280R, MSB 375, MSB 381, and SOC 340.

Resource Conservation & Management Track
Complete the following: PWS 225, PWS 330, PWS 376, PWS 405, CE EN 414, CE EN 451, CHEM 201, GEOL 420/421, and HLTH 322.

option 5.1 Complete 24.0 hours from the following course(s)

General Major Electives:

ACC 200 - Principles of Accounting 3.0
BIO 235 - Field Botany 3.0
BIO 350 - Ecology 3.0
BIO 370 - Bioethics 2.0
BIO 420 - Evolutionary Biology 4.0
BIO 556 - Limnology 3.0
BIO 557 - Stream and Wetland Ecology 4.0
CCE 201 - Sustainable Infrastructure 2.0
CE 414 - Engineering Applications of GIS 3.0
CELL 120 - Science of Biology 3.0
CELL 444 - BIO-Innovation and -Entrepreneurship 1 2.0
CELL 445 - BIO-Innovation and -Entrepreneurship 2 2.0
CFM 460 - (Not currently offered)
CHEM 101 - Introductory General Chemistry 3.0
*CHEM 105 - General College Chemistry 1 with Lab (Integrated) 4.0
CHEM 106 - General College Chemistry 2 3.0
CHEM 107 - General College Chemistry Laboratory 1.0
CHEM 223 - (Not currently offered)
CHEM 285 - Introductory Bio-organic Chemistry 4.0
CHEM 351 - Organic Chemistry 1 3.0
CHEM 352 - Organic Chemistry 2 3.0
CHEM 353 - Organic Chemistry Laboratory--Nonmajors 2.0v
CHEM 481 - Biochemistry 3.0
ECON 110 - Economic Principles and Problems 3.0
ENT 381 - Entrepreneurship Lecture Series 1.0
ENT 381 - Entrepreneurship Lecture Series 1.0
FIN 201 - Principles of Finance 3.0
GEOG 101 - Global Environment: Understanding Physical Geography 3.0
GEOG 212 - Introduction to Geographic Information Systems 3.0
GEOG 303 - Biogeography 3.0
GEOG 306 - Global Conservation Designations 3.0
GEOG 307 - Landscape Ecology 3.0
GEOG 310 - Introduction to Urban and Regional Planning 3.0
GEOL 101 - Introduction to Geology 3.0
GEOL 111 - Physical Geology 4.0
GEOL 420 - Geological Field Methods 2.0
GEOL 421 - Geological Mapping 2.0
GEOL 435 - Groundwater 3.0
HLTH 322 - Environmental Health 3.0
HLTH 324 - Occupational Health and Safety 3.0
HLTH 480 - International Health 3.0
IAS 351R - Model United Nations Preparation 3.0v
IHUM 280R - Sophomore Seminar: Humanities and the Environment 3.0
MKTG 201 - Marketing Management 3.0
MMBIO 221 - General Microbiology 3.0
MMBIO 240 - Molecular Biology 3.0
MMBIO 241 - Molecular and Cellular Biology Laboratory 1.0
MSB 375 - Social Impact: Do Good Better 3.0
PHIL 205 - Introduction to Logic and Critical Thinking 3.0
PHIL 413R - Topics in Ethics 3.0
PHIL 205 - Introduction to Logic and Critical Thinking 3.0
PHSCS 106 - General Physics 2 3.0
PHSCS 107 - General Physics Lab 1 1.0
PHSCS 108 - General Physics Lab 2 1.0
POLI 321 - The Media in American Politics 3.0
POLI 325 - Politics of Wilderness, National Parks, and Public Land Management 3.0
PWS 100 - Plants in the Environment 3.0
*PWS 150 - Environmental Biology 3.0
PWS 180 - Climate Change: Science and Solutions 3.0
PWS 215 - Principles of Range Management 3.0
BS in Environmental Science and Sustainability (285824)2022-2023 Program Requirements Cont...
PWS 225 - Principles of Wildlife and Fisheries Management 3.0
PWS 275 - Genetics and Reproduction 3.0
PWS 303 - Soils Conservation and Resources 3.0
PWS 325 - Fisheries and Wetlands Management 3.0
PWS 330 - Rangeland Plant Identification and Ecology 3.0
PWS 331 - Science of Plant Pest Control 3.0
PWS 340 - Genetics 3.0
PWS 344 - Natural History of Wildlife 3.0
PWS 350 - Rangeland Ecology 3.0
PWS 355 - Rangeland Vegetation Measurements and Analysis 3.0
PWS 402 - Soils and Water in the Urban Environment 3.0
PWS 405 - Environmental Chemistry Laboratory 2.0
PWS 411 - Watershed Management 3.0
PWS 416 - Rangeland Improvement and Restoration 3.0
PWS 417 - Rangeland Planning and GIS 3.0
PWS 419 - Forest Management and Ecology 3.0
PWS 420 - International Agricultural Development 3.0
PWS 431 - Plant Health Diagnostics 3.0
PWS 440 - Plant Physiological Ecology 3.0
PWS 472 - Conservation Genomics 3.0
PWS 505 - Aquatic and Terrestrial Biogeochemistry 3.0
PWS 511 - Environmental Biophysics: Soil and Plant Water Relations 4.0
PWS 540 - Plant Response to the Environment 3.0
PWS 551 - Quantitative Ecology 3.0
PWS 553 - Restoration Ecology 3.0
PWS 560 - Quantitative Environmental Chemistry 2.0
SOC 340 - Sociology of International Development 3.0
SOC 422 - Inequality and Society 3.0
STRAT 489 - Agribusiness Management 2 3.0

THE DISCIPLINE:
This degree educates and trains students in the fundamentals of biogeochemistry, ecology, and biology relating to soil and water conservation,
quality, and pollution. Through core courses and environmental labs, students will understand the science, politics, and ethics behind current problems facing the environment—locally, regionally, nationally, and globally; learn and practice effective research techniques in field and lab settings (i.e., testable hypotheses, utilization of the scientific method, and environmental testing procedures); and conduct and design basic environmental quality measurements and site assessments. We strive to help students foster and promote environmental stewardship within their own realms of influence.

CAREER OPPORTUNITIES:
Bachelor's Degree: environmental compliance inspector, natural sciences manager, environmental scientist and specialist, hydrologist, NEPA planner, recycling solutions associate, environmental site assessor, environmental consultant, ecological resource specialist, staff scientist, park naturalists, fish and game officer, range manager, water resource specialist, brownfield redevelopment specialist and site manager, environmental restoration planner.

Master's Degree: environmental business consultant; natural resource and conservation consultant/scientist; principal soil consultant, principal water consultant; environmental, soil, or water scientist for local, state, or national governmental agencies [i.e., Bureau of Land Management (BLM), Natural Resource Conservation Service (NRCS), United States Environmental Protection Agency (EPA), United States Department of Agriculture (USDA), United States Department of Energy (DOE)].

Doctorate Degree: professor of natural resource and conservation, senior water or soil natural resources scientist.

HANDS-ON LEARNING OPPORTUNITIES:
Students are encouraged to seek mentored research opportunities early as part of PWS 494R: Mentored Learning Experience and participate in the multiple study abroad programs (China, Africa, South America, and South Pacific-Australia) organized by the Environmental Science faculty.

FINANCING:
Scholarships are available for qualified students from the department, college, and university.

ENVIRONMENTAL SCIENCE CLUB:
Environmental Science majors participate in the BYU Environmental Science Club. The club is student lead and organizes career network and educational opportunities in fun, social, environmental settings. Fund-raising efforts support educational and networking trips every semester.

MAP DISCLAIMER
While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

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