

Program Change Request

Date Submitted: 08/19/22 8:55 pm

Viewing: **SC-BS-EVSC : Environmental Science, BS**

Last approved: 05/10/22 3:18 pm

Last edit: 11/11/22 2:11 pm

Changes proposed by: jbazaz

Catalog Pages

Using this Program

[Environmental Science, BS](#)

No Longer
Anticipated closure

Are you completing this form on someone else's behalf?

Yes

Requestor:

In Workflow

1. **ESP Chair**
2. **SC Curriculum Committee**
3. SC Associate Dean
4. Assoc Provost- Undergraduate
5. Registrar-Programs

Approval Path

1. 09/28/22 9:23 am
Larry Rockwood (lrockwoo):
Approved for ESP Chair
2. 10/28/22 11:23 am
Gregory Craft (gcraft): Approved for SC Curriculum Committee
3. 11/11/22 2:09 pm
Jennifer Bazaz Gettys (jbazaz):
Rollback to SC Curriculum Committee for SC Associate Dean

History

1. Nov 1, 2017 by clmig-jwehrheim
2. Mar 1, 2018 by Jennifer Bazaz Gettys (jbazaz)
3. Mar 13, 2018 by Jennifer Bazaz Gettys (jbazaz)

- 4. Mar 26, 2018 by rzachari
- 5. Nov 7, 2018 by Jennifer Bazaz Gettys (jbazaz)
- 6. Feb 8, 2019 by scheselk
- 7. Nov 13, 2020 by Tory Sarro (vsarro)
- 8. Dec 21, 2020 by Jennifer Bazaz Gettys (jbazaz)
- 9. Dec 6, 2021 by Jennifer Bazaz Gettys (jbazaz)
- 10. May 10, 2022 by Jennifer Bazaz Gettys (jbazaz)

Name	Extension	Email
Younsung Kim	5165	ykih

Effective Catalog: 2022-2023

Program Level: Undergraduate

Program Type: Bachelor's

Degree Type: Bachelor of Science

Title: Environmental Science, BS

- 1. What was the process?
 - 2. What evidence was used?
 - a. Have you ensured there are...
 - b. Has CBE confirmed the prog...
 - c. Has the instructor(s) for this l...
 - d. ...
 - e. ...
 - f. Does this badge provide a benefi...
5. Is this badge co-sponsored with
- a. What is the organization, program, or de...
- Earning Criteria**

- Course
- Badge
- Requirements
- Payment
- Portfolio
- Registration
- Assessment
- Credential
- Education
- Other

Professional

Schedule/Registration:

Volunteer:

Skills Tag

Skills Tag

Badge Attributes

Please select one from each category:

Achievement Type:

Mastery Level:

Time Commitment:

Cost:

Industry Standards:

Recommendations:

Issuance information and Pricing

Pricing: See <https://cpe.gmu.edu/digitalbadgespricing/> for more information

Estimated Number of Badges Expected to be Issued:

Notes:

All badge requests will be sent to CPE for review and approval. Please call

- A Mason Digital Credentials Advisory Group may be developed to review ba

Banner Title: BS Environmental Science

Is this a retitling of an existing program?

Existing Program

Registrar/OAPI Use Only – SCHEV Status Approved

Registrar’s Office Use Only – Program Start Term Fall 2018

Registrar/OAPI Use Only – SCHEV Letter

Registrar/OAPI Use Only – SACSCOC Status

Concentration(s):

	Associated Concentrations	Registrar's Office Use Only: Concentration Code
1	Conservation	CNSV
2	Ecological Science	ESCI
3	Environmental Health	EVHL
4	Human and Ecosystem Response to Climate Change	HERC
5	Marine, Estuarine and Freshwater Ecology	MEFC

	Associated Concentrations	Registrar's Office Use Only: Concentration Code
6	Wildlife	WILD

INTO Major(s):

Registrar/IRR Use Only – Concentration CIP Code

College/School: College of Science
Department / Academic Unit: Environmental Science & Policy
Jointly Owned Program? No

Participating Participating

Justification

What: We're adding courses as appropriate for the various concentrations. We are deleting the graduate courses that are listed in the Environmental Health concentration and the PRLS courses from the Conservation concentration.

Why: The additions: To allow students a breadth of courses and to ease advising and degree audits. The courses that were removed have been inactivated.

What: Requiring Human and Ecosystem Response to Climate Change students to choose at least 12 credits in EVPP electives.

Why: To ensure that students' studies stay primarily focused in ESP as the range of course options are quite vast.

What: Inserting an alternative Math option

Why: The relevant math skills and concepts required for the upper-level EVPP course is Math 111. Math 113 and Math 114 were left for students who may want to take more challenging courses than Math 111. Math 123 and 124 are two-semester sequence courses, equivalent to Math 113.

What: Adding the option of STAT 250 to fulfill the statistics requirement

Why: Learning objectives under the two courses are similar, and there are frequent course substitution requests from transfer students from the engineering school. Also, we would like to give more flexibility to students' scheduling for the core statistics and data analysis requirement.

What: Providing more guidance on courses and credits for the Wildlife concentration.

Why: Originally, the concentration was structured with two courses and elective courses in the categories of "wildlife, zoology, and botany." Since upper-level elective courses are commonly

offered once a year, students are having a hard time completing the concentration and graduating on time. We thus remove the categories of wildlife, zoology, and botany and consolidated them.

Catalog Published Information

Total Credits Total credits: minimum 120

Required:

Registrar's Office Use Only - Program Code:

SC-BS-EVSC

Registrar/IRR Use 03.0104 - Environmental Science.

Only – Program CIP

Code

Admission

Requirements:

Admissions

University-wide admissions policies can be found in the [Undergraduate Admissions Policies](#) section of this catalog. To apply for this program, please complete the [George Mason University Admissions Application](#).

Program-Specific Policies:

Policies

Students must fulfill all [Requirements for Bachelor's Degrees](#), including the [Mason Core](#).

Students can fulfill the writing intensive requirement for this major by taking [EVPP 337](#) Environmental Policy Making in Developing Countries.

For policies governing all undergraduate programs, see [AP.5 Undergraduate Policies](#).

Degree Requirements:

This is a Green Leaf program.

Students should refer to the [Admissions & Policies](#) tab for specific policies related to this program.

Please note that all CONS courses are offered through the Smithsonian-Mason Semester.

Core Requirements

All students complete the following core courses:

Environmental Science

EVPP 210	Environmental Biology: Molecules and Cells	4
EVPP 301	Environmental Science: Biological Diversity and Ecosystems	4
EVPP 302	Environmental Science: Biomes and Human Dimensions	4
EVPP 305	Environmental Microbiology Essentials	3
EVPP 306	Environmental Microbiology Essentials Laboratory	1
EVPP 337	Environmental Policy Making in Developing Countries 1	3

EVPP 361	Introduction to Environmental Policy	3
EVPP 377	Applied Ecology	3
EVPP 430	Fundamentals of Environmental Geographic Information Systems	3
BIOL 214	Biostatistics for Biology Majors	4
Select one from the following:		3
EVPP 336	Human Dimensions of the Environment	
EVPP 338	Economics of Environmental Policy	
EVPP 362	Intermediate Environmental Policy	
EVPP 475	Global Biodiversity Governance	
Select one from the following:		3-4
EVPP 378	RS: Ecological Sustainability (Mason Core)	
EVPP 401	Integrated Environmental Assessment	
EVPP 480	Sustainability in Action (Mason Core)	
CONS 490	RS: Integrated Conservation Strategies (Mason Core)	
Total Credits		38-39

1 Fulfills the writing intensive requirement.

Chemistry

CHEM 211	General Chemistry I (Mason Core)	3
CHEM 213	General Chemistry Laboratory I (Mason Core)	1
CHEM 212	General Chemistry II (Mason Core)	3
CHEM 214	General Chemistry Laboratory II (Mason Core)	1
Total Credits		8

Mathematics

Select two from the following: 7-8

Choose one of the following two options: 3-6

Option One: Select one course from the following:

MATH 111	Linear Mathematical Modeling (Mason Core)
MATH 113	Analytic Geometry and Calculus I (Mason Core)
MATH 114	Analytic Geometry and Calculus II

Option Two: Complete the following courses:

MATH 123	Calculus with Algebra/Trigonometry, Part A
MATH 124	Calculus with Algebra/Trigonometry, Part B (Mason Core)

Total Credits 3-6

Geology

GEOL 102	Historical Geology (Mason Core)	4
& GEOL 104	and Historical Geology Laboratory (Mason Core)	

Total Credits 4

Information Technology

CDS 130	Computing for Scientists (Mason Core)	3
-------------------------	---	---

Total Credits 3

Experiential Learning

Select at least one from the following: 1-6

EVPP 395	Undergraduate Research in Environmental Science and Policy
EVPP 494	Internship
CONS 496	Research in Conservation (Mason Core).
CONS 498	Internship

Total Credits

1-6

Concentration in Conservation (CNSV)

Select at least 21 credits from the following:

21

EVPP 318	Conservation Biology
EVPP 350	Freshwater Ecosystems
EVPP 378	RS: Ecological Sustainability (Mason Core).
EVPP 381	Nature and Culture in Global Wetlands (Mason Core) .
EVPP 395	Undergraduate Research in Environmental Science and Policy
EVPP 396	Directed Topic in Environmental Science and Policy 1
EVPP 419	Marine Mammal Biology and Conservation
EVPP 420	Marine Mammal Biology and Conservation Field Course
EVPP 421	Marine Conservation
EVPP 427	Conservation Medicine
EVPP 428	Planetary Health
EVPP 440	Field Environmental Science 1
EVPP 445	Principles of Environmental Toxicology
EVPP 475	Global Biodiversity Governance
EVPP 490	Special Topics in Environmental Science and Policy 1
EVPP 494	Internship
BIOL 300	BioDiversity
BIOL 435	Selected Topics in Biology 1
GGS 303	Geography of Resource Conservation (Mason Core).
GGS 307	Geographic Approaches for Sustainable Development
CONS 320	Conservation in Practice
CONS 400	Conservation Seminar
CONS 401	Conservation Theory
CONS 402	Applied Conservation
CONS 404	Biodiversity Monitoring
CONS 405	Landscape and Macrosystems Ecology
CONS 406	Small Population Management
CONS 410	Human Dimensions in Conservation (Mason Core).
CONS 490	RS: Integrated Conservation Strategies (Mason Core). (Synthesis course)
CONS 491	RS: Conservation Management Planning (Mason Core).
CONS 496	Research in Conservation (Mason Core)
CONS 497	Special Topics in Conservation
CONS 499	Independent Study/Research
INTS 311	The Mysteries of Migration: Consequences for Conservation (Mason Core).

PRLS 300Course PRLS 300 Not FoundPRLS 402Course PRLS 402 Not Found

Alternative courses may be taken as approved by the program coordinator.

Total Credits

21

1 In a relevant topic.

Concentration in Ecological Science (ECSI)

Select at least 21 credits from the following:

21

<u>EVPP 309</u>	Oceanography
<u>EVPP 318</u>	Conservation Biology
<u>EVPP 350</u>	Freshwater Ecosystems
<u>EVPP 355</u>	Ecological Engineering and Ecosystem Restoration
<u>EVPP 378</u>	RS: Ecological Sustainability (<u>Mason Core</u>)
<u>EVPP 381</u>	Nature and Culture in Global Wetlands (<u>Mason Core</u>)
<u>EVPP 395</u>	Undergraduate Research in Environmental Science and Policy
<u>EVPP 396</u>	Directed Topic in Environmental Science and Policy 1
<u>EVPP 408</u>	Mushrooms, Molds and Society
<u>EVPP 427</u>	Conservation Medicine
<u>EVPP 428</u>	Planetary Health
<u>EVPP 429</u>	Environmental Science Communication
<u>EVPP 434</u>	Food-Energy-Water Nexus
<u>EVPP 440</u>	Field Environmental Science 1
<u>EVPP 445</u>	Principles of Environmental Toxicology
<u>EVPP 449</u>	Marine Ecology
<u>EVPP 490</u>	Special Topics in Environmental Science and Policy 1
<u>EVPP 494</u>	Internship
<u>BIOL 300</u>	BioDiversity
<u>BIOL 345</u>	Plant Ecology
<u>BIOL 435</u>	Selected Topics in Biology 1
<u>BIOL 459</u>	Fungi and Ecosystems
<u>GEOL 305</u>	Environmental Geology
<u>GEOL 306</u>	Soil Science
<u>GGG 307</u>	Geographic Approaches for Sustainable Development
<u>CEIE 401</u>	Sustainable Land Development
<u>CEIE 440</u>	Water Supply and Distribution
<u>CEIE 444</u>	Water Resources Planning and Design
<u>CEIE 453</u>	Water and Wastewater Treatment Processes

Alternative courses may be taken as approved by the program coordinator.

Total Credits

21

1 In a relevant topic.

Concentration in Environmental Health (EVHL)

Required Courses

EVPP 427	Conservation Medicine	3
EVPP 445	Principles of Environmental Toxicology	3

Course Options

Select at least 15 credits from the following 15

EVPP 395	Undergraduate Research in Environmental Science and Policy
EVPP 396	Directed Topic in Environmental Science and Policy 1
EVPP 409	Medical Mycology
EVPP 428	Planetary Health
EVPP 440	Field Environmental Science 1
EVPP 490	Special Topics in Environmental Science and Policy 1
EVPP 494	Internship
EVPP 515	Molecular Environmental Biology†
BIOL 305	Biology of Microorganisms
& BIOL 306	and Biology of Microorganisms Laboratory
BIOL 402	Applied and Industrial Microbiology
BIOL 404	Medical Microbiology
BIOL 465	Histology
CLIM 319	Air Pollution
GGS 302	Global Environmental Hazards
GGS 304	Population Geography (Mason Core)
GGS 307	Geographic Approaches for Sustainable Development
GCH 205	Global Health (Mason Core)
GCH 360	Health and Environment
GCH 560	Environmental Health

Alternative courses may be taken as approved by the program coordinator.

Total Credits 21

1 In a relevant topic.

Concentration in Human and Ecosystem Response to Climate Change (HERC)

Required Course

EVPP 336	Human Dimensions of the Environment	3
--------------------------	-------------------------------------	---

Course Options

Select at least 18 credits from the following courses, at least 12 of which must come from EVPP courses: 18

EVPP 309	Oceanography
EVPP 355	Ecological Engineering and Ecosystem Restoration
EVPP 378	RS: Ecological Sustainability (Mason Core)
EVPP 381	Nature and Culture in Global Wetlands (Mason Core)
EVPP 395	Undergraduate Research in Environmental Science and Policy
EVPP 396	Directed Topic in Environmental Science and Policy
EVPP 427	Conservation Medicine

<u>EVPP 429</u>	Environmental Science Communication
<u>EVPP 432</u>	Energy Policy
<u>EVPP 434</u>	Food-Energy-Water Nexus
<u>EVPP 436</u>	The Human Dimensions of Global Climate Change
<u>EVPP 440</u>	Field Environmental Science
<u>EVPP 475</u>	Global Biodiversity Governance
<u>EVPP 490</u>	Special Topics in Environmental Science and Policy
<u>EVPP 494</u>	Internship
<u>CLIM 101</u>	Global Warming: Weather, Climate, and Society (<u>Mason Core</u>).
<u>CLIM 111</u>	Introduction to the Fundamentals of Atmospheric Science (<u>Mason Core</u>).
<u>CLIM 112</u>	Introduction to the Fundamentals of Atmospheric Science Lab (<u>Mason Core</u>).
<u>CLIM 312</u>	Physical Climatology
<u>CLIM 314</u>	Severe and Extreme Weather
<u>CLIM 319</u>	Air Pollution
<u>CLIM 412</u>	Physical Oceanography
<u>CLIM 438</u>	Atmospheric Chemistry
<u>CLIM 456</u>	Introduction to Atmospheric Radiation
<u>GEOL 309</u>	Oceanography
<u>GGG 121</u>	Dynamic Atmosphere and Hydrosphere (<u>Mason Core</u>).
<u>GGG 302</u>	Global Environmental Hazards
<u>GGG 304</u>	Population Geography (<u>Mason Core</u>).
<u>GGG 307</u>	Geographic Approaches for Sustainable Development
<u>GGG 309</u>	Introduction to Weather and Climate
<u>GGG 312</u>	Physical Climatology
<u>GGG 314</u>	Severe and Extreme Weather
<u>GGG 321</u>	Biogeography
<u>GGG 354</u>	Data Analysis and Global Change Detection Techniques
<u>PHIL 243</u>	Global Environmental Ethics (<u>Mason Core</u>)
<u>PHIL 343</u>	Topics in Environmental Philosophy (<u>Mason Core</u>)

Alternative courses may be taken as approved by the program coordinator.

Total Credits

21

1 In a relevant topic.

Concentration in Marine, Estuarine and Freshwater Ecology (MEFC)

Required Courses

<u>EVPP 309</u>	Oceanography	3
<u>EVPP 350</u>	Freshwater Ecosystems	4
<u>EVPP 421</u>	Marine Conservation	3
<u>EVPP 449</u>	Marine Ecology	3

Course Options

Select at least 8 credits from the following:	8
<u>EVPP 318</u>	Conservation Biology

<u>EVPP 355</u>	Ecological Engineering and Ecosystem Restoration
<u>EVPP 363</u>	Coastal Morphology and Processes
<u>EVPP 395</u>	Undergraduate Research in Environmental Science and Policy
<u>EVPP 396</u>	Directed Topic in Environmental Science and Policy 1
<u>EVPP 419</u>	Marine Mammal Biology and Conservation
<u>EVPP 420</u>	Marine Mammal Biology and Conservation Field Course
<u>EVPP 427</u>	Conservation Medicine
<u>EVPP 434</u>	Food-Energy-Water Nexus
<u>EVPP 440</u>	Field Environmental Science 1
<u>EVPP 445</u>	Principles of Environmental Toxicology
<u>EVPP 490</u>	Special Topics in Environmental Science and Policy 1
<u>EVPP 494</u>	Internship
<u>EVPP 563</u>	Coastal Morphology and Processes
<u>BIOL 331</u>	Invertebrate Zoology
<u>BIOL 480</u>	The Diversity of Fishes
<u>GEOL 364</u>	Marine Geology
<u>GEOL 458</u>	Chemical Oceanography
<u>GG5 307</u>	Geographic Approaches for Sustainable Development
<u>CLIM 412</u>	Physical Oceanography

Alternative courses may be taken as approved by the program coordinator.

Total Credits

21

1 In a relevant topic.

Concentration in Wildlife (WILD)

Wildlife Courses

Select 6 credits from the following:

6

<u>EVPP 318</u>	Conservation Biology
<u>EVPP 445</u>	Principles of Environmental Toxicology
<u>EVPP 490</u>	Special Topics in Environmental Science and Policy

Select 15 credits from the following:

15

<u>EVPP 395</u>	Undergraduate Research in Environmental Science and Policy 1
<u>EVPP 396</u>	Directed Topic in Environmental Science and Policy 1
<u>EVPP 419</u>	Marine Mammal Biology and Conservation
<u>EVPP 427</u>	Conservation Medicine
EVPP 494	internship-2
<u>EVPP 428</u>	Planetary Health
<u>EVPP 445</u>	Principles of Environmental Toxicology
<u>EVPP 490</u>	Special Topics in Environmental Science and Policy
<u>EVPP 494</u>	Internship 1
<u>BIOL 304</u>	Plant Biology
<u>BIOL 344</u>	Plant Diversity and Evolution
<u>BIOL 345</u>	Plant Ecology

INTS 402	Plants and People – Sustenance, Ceremony, and Sustainability
<u>BIOL 311</u>	General Genetics
<u>BIOL 326</u>	Animal Physiology
<u>BIOL 331</u>	Invertebrate Zoology
<u>BIOL 332</u>	Insect Biology
<u>BIOL 437</u>	Orinthology
<u>BIOL 438</u>	Mammalogy
<u>BIOL 439</u>	Herpetology

Zoology Courses

Choose one course from the following:

3-4

EVPP 395	Undergraduate Research in Environmental Science and Policy 2
EVPP 396	Directed Topic in Environmental Science and Policy 2
<u>BIOL 454</u>	Marine Mammal Biology and Conservation
<u>BIOL 455</u>	<u>Course BIOL 455 Not Found</u>

Botany Courses

Choose from the following courses:

9

EVPP 395	Undergraduate Research in Environmental Science and Policy 3
EVPP 396	Directed Topic in Environmental Science and Policy 3
EVPP 494	Internship 3
<u>BIOL 140</u>	<u>Plants and People (Mason Core)</u>
<u>BIOL 460</u>	Infectious Diseases Wildlife

Choose one course from the following:

3-4

<u>RMGT 300</u>	<u>People With Nature</u>
<u>RMGT 302</u>	<u>Park Management and Operations</u>
<u>RMGT 402</u>	<u>Human Behavior in Natural Environments</u>

Total Credits

21

- 1 In a topic relevant to wildlife.
- 2 ~~In a topic relevant to zoology.~~
- 3 ~~In a topic relevant to botany.~~

**Retroactive
Requirements
Updates:**

Plan of Study:

**Honors
Information:**

**Accelerated
Description/Dual
Degree
Description:**

**INTO-Mason
Requirements:**

**College
Requirements &
Policies:**

**Department /
Academic Unit
Requirements &
Policies:**

Program Outcomes

Additional Program Information

This information is required by the Office of Accreditation and Program Integrity.

Courses offered via distance (if applicable):

Indicate whether students are able

What is the primary delivery format for the program?
Face-to-Face Only

Does any portion of this program occur off-campus?

Yes

Off-campus details:

If students choose to take courses as a part of the Mason-Smithsonian semester.

Are you working with a vendor / other collaborators to offer your program?

No

Please explain:

Related Departments

Could this program prepare students for any type of professional licensure, in Virginia or elsewhere?

No

Please explain:

Are you adding or removing a licensure component?

No

Please explain:

Additional SCHEV & SACSCOC Information

Is the content of the new program closely related to that of an existing approved program at the same instructional level (i.e., baccalaureate, master's, doctoral)?

Which existing approved program(s)?

Is this new program considered to be "advancing the degree level of a currently approved program" (i.e. existing content is at lower degree level, new content is at the higher degree level)?

Which existing approved program(s)?

Is this new program considered to be "lowering the degree level of a currently approved program" (i.e. existing content is at higher degree level, new content is at the lower degree level)?

Which existing approved program(s)?

Is this a re-opening of a program that was closed to admission within the last five years?

Date of Program Closure

What are the methods of delivery for the program?

Does this program include a course/credit-based competency-based education delivery option?

Is this change a simple retitling of an existing program, with no other changes, to any existing program content, curriculum requirements, etc?

No

Does this change represent a repackaging of content in an existing approved degree/certificate program at the same instructional level (i.e., baccalaureate, master's, or doctoral)?

No

Which existing approved program(s)?

Percentage of total credits containing new course content. ("New course content" is defined by SACSCOC as content that is not currently included in an existing approved degree/certificate program at the same instructional level. Do not exclude gen ed credits in calculations for undergraduate programs.)

0%-24%

Does this change include the addition of a distance education or face-to-face method of delivery for this program?

No

What is the new method of delivery?

Does this change include the addition of a course/credit-based competency-based education delivery option?

No

Will any additional equipment/facilities be needed?

No

Description of institutional impact:

Will any additional faculty be required?

No

Description of institutional impact:

Will any additional financial resources be needed?

No

Description of institutional impact:

Additional library/learning resources needed?

No

Description of institutional impact:

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program? Yes

Green Leaf Designation Sustainability-focused designation

Sustainability-focused academic programs require at least one green leaf course. Either that course is itself sustainability-focused or else the program requires a set of sustainability-related courses with aggregated substance equivalent to a sustainability-focused course.

Relationship to Existing Courses

Relationship to Existing Programs

List sustainability-focused courses currently required in the degree program:

Sustainability-related academic programs either require at least one sustainability-related course or else offer any green leaf course as an option or elective *

List sustainability-related courses currently required in the degree

Does this program cover material which crosses into another department?

No

Impacted Departments

Additional Attachments [BS-Environmental-Science-Wildlife.pdf](#)

SCHEV Proposal

Executive Summary

Reviewer

Comments

Jennifer Bazaz Gettys (jbazaz) (11/11/22 2:09 pm): Rollback: Further modifications requested from the dept.

**Additional
Comments**

Is this course required of all students in this degree program?

%wi_required.eshtml%

**Attached
Document**

Key: 151