

Program Change Request

Date Submitted: 05/01/23 5:23 pm

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

Last approved: 04/06/23 12:15 pm

Last edit: 05/11/23 3:09 pm

Changes proposed by: ykih

Catalog Pages Using this Program [Environmental Science, BS](#)

No Longer Anticipated closure
Rationale for

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

No

Effective Catalog: 2023-2024

Program Level: Undergraduate

Program Type: Bachelor's

Degree Type: Bachelor of Science

Title: Environmental Science, BS

Approval Criteria
1. What was the process used within your ac:
2. Will the program be approved by the SC

In Workflow

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

Approval Path

1. 05/01/23 5:25 pm
Younsung Kim
(ykih): Approved for ESP UG Committee
2. 05/02/23 10:45 am
Larry Rockwood (lrockwoo):
Approved for ESP Chair

History

1. Nov 1, 2017 by clmig-jwehrheim

- a. Have you ensured there are no other existing I
 b. Has CPE confirmed the proposed badge does not
 c. Has the instructor(s) for this badge experience b
 d. Is there a content hour minimum?
 e. Is an assessment required?
 f. Does this badge provide a benefit for current or
 5. Is this badge co-sponsored with another
 organization, association, or unit? (If you would like an
 a. What is the organization, program, or department

Earning Criteria

- Course:
 Badge:
 Participant:
 Document:
 Portfolio:
 Presentation:
 Assessment:
 Credential:
 Education
 Other:
 Project:
 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:

- a. All badge requests will be routed to CPE for review and approval. Please allow 7

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)
11. Apr 6, 2023 by
Jennifer Bazaz
Gettys (jbazaz)

A Major/Minor/Certificate/Advisory Group may be developed to review below

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
6	Wildlife Conservation and Management	WICM

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: Add the following courses to elective course list of the HERC concentration:

- EVPP 338 Economics of Environmental Policy
- EVPP 362 Intermediate Environmental Policy
- EVPP 428 Planetary Health
- EVPP 445 Principles of Environmental Toxicology
- EVPP 465 Coral Reef Ecology, Health, and Conservation
- EVPP 466 Coral Reef Ecology, Health, and Conservation Lab/Field Experience
- CLIM 390 Topics in Climate Research

What: Make EVPP 336 Tackling Wicked Problems in Society and the Environment as an elective course and students can choose 21 credits from the list.

Why: The updated concentration requirement provide more options to students and reduce course substitution requests.

Catalog Published Information

Total Credits Total credits: minimum 120

Required:

Registrar's Office Use Only - Program Code:

SC-BS-EVSC

Registrar/IRR Use Only – Program CIP Code 03.0104 - Environmental Science.

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](#). ~~the Smithsonian-Mason Semester.~~

Core Requirements

All students **must** 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 2	4
or STAT 250	Introductory Statistics I (Mason Core)	

Select one from the following:

3

EVPP 336	Tackling Wicked Problems in Society 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.

2 [BIOL 214](#) Biostatistics for Biology Majors is recommended by the Department of Environmental Science and Policy.

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

Choose one of the following two options:

4-6

Option One: Select one course from the following:

MATH 111	Linear Mathematical Modeling (Mason Core)
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[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

4-6

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

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

Select at least 21 unique 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-Climate 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
<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>GGS 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

CEIE 453

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

<u>EVPP 427</u>	Conservation Medicine	3
<u>EVPP 445</u>	Principles of Environmental Toxicology	3

Course Options

Select at least 15 credits from the following 15

<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 409</u>	Course EVPP 409 Not Found
<u>EVPP 428</u>	Planetary Health
<u>EVPP 440</u>	Field Environmental Science 1
<u>EVPP 490</u>	Special Topics in Environmental Science and Policy
<u>EVPP 494</u>	Internship
<u>BIOL 305</u>	Biology of Microorganisms
& <u>BIOL 306</u>	and Biology of Microorganisms Laboratory
<u>BIOL 402</u>	Applied and Industrial Microbiology
<u>BIOL 404</u>	Medical Microbiology
<u>BIOL 465</u>	Histology
<u>CLIM 319</u>	Air Pollution
<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>GCH 205</u>	Global Health (<u>Mason Core</u>)
<u>GCH 360</u>	Health and Environment

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)

± ~~In a relevant topic:~~

~~Required Course~~

Course Options

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

Select 21 unique credits from the following courses; at least 15 of these credits must be in EVPP-prefixed courses: 21

<u>EVPP 309</u>	Oceanography
<u>EVPP 336</u>	Tackling Wicked Problems in Society the Environment
<u>EVPP 338</u>	Economics of Environmental Policy
<u>EVPP 355</u>	Ecological Engineering and Ecosystem Restoration
<u>EVPP 362</u>	Intermediate Environmental Policy
<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
<u>EVPP 427</u>	Conservation Medicine
<u>EVPP 428</u>	Planetary Health
<u>EVPP 429</u>	Environmental Science Communication
<u>EVPP 432</u>	Energy Policy
<u>EVPP 434</u>	Food-Energy-Water-Climate Nexus
<u>EVPP 436</u>	Politics of Climate Change Governance
<u>EVPP 440</u>	Field Environmental Science
<u>EVPP 475</u>	Global Biodiversity Governance
<u>EVPP 445</u>	Principles of Environmental Toxicology
<u>EVPP 465</u>	Coral Reef Ecology, Health, and Conservation
<u>EVPP 466</u>	Coral Reef Ecology, Health, and Conservation Lab/Field Experience
<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>)

CLIM 111	Introduction to the Fundamentals of Atmospheric Science (Mason Core)
CLIM 112	Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core)
CLIM 312	Physical Climatology
CLIM 314	Severe and Extreme Weather
CLIM 319	Air Pollution
CLIM 390	Topics in Climate Research
CLIM 412	Physical Oceanography
CLIM 438	Atmospheric Chemistry
CLIM 456	Introduction to Atmospheric Radiation
GEOL 309	Oceanography
GGS 121	Dynamic Atmosphere and Hydrosphere (Mason Core)
GGS 302	Global Environmental Hazards
GGS 304	Population Geography (Mason Core)
GGS 307	Geographic Approaches for Sustainable Development
GGS 309	Introduction to Weather and Climate
GGS 312	Physical Climatology
GGS 314	Severe and Extreme Weather
GGS 321	Biogeography
GGS 354	Data Analysis and Global Change Detection Techniques
PHIL 243	Global Environmental Ethics (Mason Core)
PHIL 343	Topics in Environmental Philosophy (Mason Core)

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

Total Credits

21

Concentration in Marine, Estuarine and Freshwater Ecology (MEFC)

Required Courses

EVPP 309	Oceanography	3
EVPP 350	Freshwater Ecosystems	4
EVPP 421	Marine Conservation	3
EVPP 449	Marine Ecology	3

Course Options

Select at least 8 credits from the following:

EVPP 318	Conservation Biology
EVPP 355	Ecological Engineering and Ecosystem Restoration
EVPP 363	Coastal Morphology and Processes
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 427	Conservation Medicine
EVPP 434	Food-Energy-Water-Climate Nexus
EVPP 440	Field Environmental Science 1
EVPP 445	Principles of Environmental Toxicology
EVPP 490	Special Topics in Environmental Science and Policy
EVPP 494	Internship
EVPP 563	Coastal Morphology and Processes
BIOL 331	Invertebrate Zoology
BIOL 480	The Diversity of Fishes
GEOL 364	Marine Geology
GEOL 458	Chemical Oceanography
GGS 307	Geographic Approaches for Sustainable Development
CLIM 412	Physical Oceanography

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

Total Credits

21

1 In a relevant topic.

Concentration in Wildlife Conservation and Management (WICM)

Wildlife Courses

Select 6 credits from the following:

6

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

Select 15 credits from the following:

<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
<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
<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>	Ornithology
<u>BIOL 438</u>	Mammalogy
<u>BIOL 439</u>	Herpetology
<u>BIOL 454</u>	Marine Mammal Biology and Conservation
<u>BIOL 460</u>	Infectious Diseases Wildlife
<u>RMGT 300</u>	People With Nature
<u>RMGT 302</u>	Park Management and Operations
<u>RMGT 402</u>	Human Behavior in Natural Environments

Total Credits

21

1 In a topic relevant to wildlife.

**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](#)

[BS-Environmental Science-Human and Ecosystem Response to
Climate Change.pdf](#)

SCHEV Proposal

Executive Summary

**Reviewer
Comments**

**Additional
Comments**

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

%wi_required.eshtml%

**Attached
Document**

Key: 151