

Date Submitted: 11/15/20 9:22 pm

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

Last approved: 11/13/20 10:31 am

Last edit: 11/15/20 9:22 pm

Changes proposed by: jbazaz

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

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

Yes

Requestor:

## In Workflow

1. Registrar-  
Programs:Workflow  
Review (P.O.)
2. ESP Chair
3. SC Curriculum  
Committee
4. SC Associate Dean
5. SC CAT Editor
6. Assoc Provost-  
Undergraduate
7. Registrar-Programs:  
Duration
8. Registrar-Programs

## 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  
Rebekah Zacharias  
(rzachari)
5. Nov 7, 2018 by  
Jennifer Bazaz  
Gettys (jbazaz)
6. Feb 8, 2019 by  
Susan Cheselka  
(scheselk)
7. Nov 13, 2020 by  
Tory Sarro (vsarro)

Name	Extension	Email
------	-----------	-------

Name	Extension	Email
Stephanie Lister	3187	slister1

**Effective Catalog:** 2021-2022  
**Program Level:** Undergraduate  
**Program Type:** Bachelor's  
**Degree Type:** Bachelor of Science  
**Title:** Environmental Science, BS  
**Banner Title:** BS Environmental Science  
**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	WILD

**Registrar/IRR Use Only – Concentration CIP Code**

**College/School:** College of Science

**Department / Academic Unit:** Environmental Science & Policy

**Jointly Owned Program?** No

**Justification**

The AOES department has divided the four-credit GEOL 102 class into a three-credit lecture and one-credit lab. GEOL 102 (3cr) is a requirement in the BS core curriculum, and we are updating our curriculum to add GEOL 104 (1cr).

**Total Credits Required:** Total credits: minimum 120

**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.

## Core Requirements

All students complete the following core courses:

### Environmental Science

[EVPP 210](#) Environmental Biology: Molecules and Cells

4

<a href="#">EVPP 301</a>	Environmental Science: Biological Diversity and Ecosystems	4
<a href="#">EVPP 302</a>	Environmental Science: Biomes and Human Dimensions	4
<a href="#">EVPP 305</a>	Environmental Microbiology Essentials	3
<a href="#">EVPP 306</a>	Environmental Microbiology Essentials Laboratory	1
<a href="#">EVPP 337</a>	Environmental Policy Making in Developing Countries 1	3
<a href="#">EVPP 361</a>	Introduction to Environmental Policy	3
<a href="#">EVPP 377</a>	Applied Ecology	3
<a href="#">EVPP 430</a>	Fundamentals of Environmental Geographic Information Systems	3
<a href="#">BIOL 214</a>	Biostatistics for Biology Majors	4
Select one from the following:		3
<a href="#">EVPP 336</a>	Human Dimensions of the Environment	
<a href="#">EVPP 338</a>	Economics of Environmental Policy	
<a href="#">EVPP 362</a>	Intermediate Environmental Policy	
<a href="#">EVPP 475</a>	Global Biodiversity Governance	
Select one from the following:		3-4
<a href="#">EVPP 378</a>	RS: Ecological Sustainability ( <a href="#">Mason Core</a> )	
<a href="#">EVPP 401</a>	Integrated Environmental Assessment	
<a href="#">EVPP 480</a>	Sustainability in Action ( <a href="#">Mason Core</a> )	
<a href="#">CONS 490</a>	RS: Integrated Conservation Strategies ( <a href="#">Mason Core</a> )	
Total Credits		38-39
1 Fulfills the writing intensive requirement.		
<b>Chemistry</b>		
<a href="#">CHEM 211</a>	General Chemistry I ( <a href="#">Mason Core</a> )	3
<a href="#">CHEM 213</a>	General Chemistry Laboratory I ( <a href="#">Mason Core</a> )	1
<a href="#">CHEM 212</a>	General Chemistry II ( <a href="#">Mason Core</a> )	3
<a href="#">CHEM 214</a>	General Chemistry Laboratory II ( <a href="#">Mason Core</a> )	1
Total Credits		8
<b>Mathematics</b>		
Select two from the following:		7-8
<a href="#">MATH 111</a>	Linear Mathematical Modeling ( <a href="#">Mason Core</a> )	
<a href="#">MATH 113</a>	Analytic Geometry and Calculus I ( <a href="#">Mason Core</a> )	
<a href="#">MATH 114</a>	Analytic Geometry and Calculus II	
Total Credits		7-8
<b>Geology</b>		
<a href="#">GEOL 102</a>	Historical Geology ( <a href="#">Mason Core</a> )	4
& <a href="#">GEOL 104</a>	and Historical Geology Laboratory ( <a href="#">Mason Core</a> )	
Total Credits		4
<b>Information Technology</b>		
<a href="#">CDS 130</a>	Computing for Scientists	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 378](#) RS: Ecological Sustainability ([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 440](#) Field Environmental Science 1

[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 497](#) Special Topics in Conservation

[CONS 499](#) Independent Study/Research

[INTS 311](#) The Mysteries of Migration: Consequences for Conservation ([Mason Core](#))

[PRLS 300](#) People with Nature

**PRLS 402** Human Behavior in Natural Environments

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

<b><u>EVPP 309</u></b>	Introduction to Oceanography
<b><u>EVPP 350</u></b>	Freshwater Ecosystems
<b><u>EVPP 355</u></b>	Ecological Engineering and Ecosystem Restoration
<b><u>EVPP 378</u></b>	RS: Ecological Sustainability ( <b><u>Mason Core</u></b> )
<b><u>EVPP 395</u></b>	Undergraduate Research in Environmental Science and Policy
<b><u>EVPP 396</u></b>	Directed Topic in Environmental Science and Policy 1
<b><u>EVPP 408</u></b>	Mushrooms, Molds and Society
<b><u>EVPP 427</u></b>	Conservation Medicine
<b><u>EVPP 440</u></b>	Field Environmental Science 1
<b><u>EVPP 449</u></b>	Marine Ecology
<b><u>EVPP 490</u></b>	Special Topics in Environmental Science and Policy 1
<b><u>EVPP 494</u></b>	Internship
<b><u>BIOL 300</u></b>	BioDiversity
<b><u>BIOL 345</u></b>	Plant Ecology
<b><u>BIOL 435</u></b>	Selected Topics in Biology 1
<b><u>BIOL 459</u></b>	Fungi and Ecosystems
<b><u>GEOL 305</u></b>	Environmental Geology
<b><u>GEOL 306</u></b>	Soil Science
<b><u>GIS 307</u></b>	Geographic Approaches for Sustainable Development

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

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

Course Options

Select at least 15 credits from the following

15

<b><u>EVPP 395</u></b>	Undergraduate Research in Environmental Science and Policy
<b><u>EVPP 396</u></b>	Directed Topic in Environmental Science and Policy 1
<b><u>EVPP 409</u></b>	Medical Mycology
<b><u>EVPP 440</u></b>	Field Environmental Science 1

<a href="#">EVPP 490</a>	Special Topics in Environmental Science and Policy 1
<a href="#">EVPP 494</a>	Internship
<a href="#">EVPP 515</a>	Molecular Environmental Biology I
<a href="#">BIOL 305</a>	Biology of Microorganisms
& <a href="#">BIOL 306</a>	and Biology of Microorganisms Laboratory
<a href="#">BIOL 402</a>	Applied and Industrial Microbiology
<a href="#">BIOL 404</a>	Medical Microbiology
<a href="#">BIOL 465</a>	Histology
<a href="#">GGS 302</a>	Global Environmental Hazards
<a href="#">GGS 304</a>	Population Geography ( <a href="#">Mason Core</a> )
<a href="#">GGS 307</a>	Geographic Approaches for Sustainable Development
<a href="#">GGS 319</a>	Air Pollution
<a href="#">GGS 322</a>	Issues in Global Change
<a href="#">GCH 205</a>	Global Health ( <a href="#">Mason Core</a> )
<a href="#">GCH 360</a>	Health and Environment
<a href="#">GCH 560</a>	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: 18

<a href="#">EVPP 309</a>	Introduction to Oceanography
<a href="#">EVPP 355</a>	Ecological Engineering and Ecosystem Restoration
<a href="#">EVPP 378</a>	RS: Ecological Sustainability ( <a href="#">Mason Core</a> )
<a href="#">EVPP 395</a>	Undergraduate Research in Environmental Science and Policy
<a href="#">EVPP 396</a>	Directed Topic in Environmental Science and Policy
<a href="#">EVPP 427</a>	Conservation Medicine
<a href="#">EVPP 432</a>	Energy Policy
<a href="#">EVPP 436</a>	The Human Dimensions of Global Climate Change
<a href="#">EVPP 440</a>	Field Environmental Science
<a href="#">EVPP 475</a>	Global Biodiversity Governance
<a href="#">EVPP 490</a>	Special Topics in Environmental Science and Policy
<a href="#">EVPP 494</a>	Internship
<a href="#">CLIM 101</a>	Global Warming: Weather, Climate, and Society ( <a href="#">Mason Core</a> )
<a href="#">CLIM 111</a>	Introduction to the Fundamentals of Atmospheric Science ( <a href="#">Mason Core</a> )

<a href="#">CLIM 112</a>	Introduction to the Fundamentals of Atmospheric Science Lab ( <a href="#">Mason Core</a> ).
<a href="#">CLIM 312</a>	Physical Climatology
<a href="#">CLIM 314</a>	Severe and Extreme Weather
<a href="#">CLIM 319</a>	Air Pollution
<a href="#">CLIM 412</a>	Physical Oceanography
<a href="#">CLIM 438</a>	Atmospheric Chemistry
<a href="#">GEOL 309</a>	Introduction to Oceanography
<a href="#">GGS 121</a>	Dynamic Atmosphere and Hydrosphere ( <a href="#">Mason Core</a> ).
<a href="#">GGS 302</a>	Global Environmental Hazards
<a href="#">GGS 304</a>	Population Geography ( <a href="#">Mason Core</a> ).
<a href="#">GGS 307</a>	Geographic Approaches for Sustainable Development
<a href="#">GGS 309</a>	Introduction to Weather and Climate
<a href="#">GGS 312</a>	Physical Climatology
<a href="#">GGS 314</a>	Severe and Extreme Weather
<a href="#">GGS 319</a>	Air Pollution
<a href="#">GGS 321</a>	Biogeography
<a href="#">GGS 322</a>	Issues in Global Change
<a href="#">GGS 354</a>	Data Analysis and Global Change Detection Techniques
<a href="#">GGS 456</a>	Introduction to Atmospheric Radiation

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

<a href="#">EVPP 309</a>	Introduction to Oceanography	3
<a href="#">EVPP 350</a>	Freshwater Ecosystems	4
<a href="#">EVPP 421</a>	Marine Conservation	3
<a href="#">EVPP 449</a>	Marine Ecology	3

### Course Options

Select at least 8 credits from the following: 8

<a href="#">EVPP 318</a>	Conservation Biology
<a href="#">EVPP 363</a>	Coastal Morphology and Processes
<a href="#">EVPP 395</a>	Undergraduate Research in Environmental Science and Policy
<a href="#">EVPP 396</a>	Directed Topic in Environmental Science and Policy 1
<a href="#">EVPP 419</a>	Marine Mammal Biology and Conservation
<a href="#">EVPP 420</a>	Marine Mammal Biology and Conservation Field Course
<a href="#">EVPP 427</a>	Conservation Medicine
<a href="#">EVPP 440</a>	Field Environmental Science 1
<a href="#">EVPP 490</a>	Special Topics in Environmental Science and Policy 1

<a href="#">EVPP 494</a>	Internship
<a href="#">BIOL 331</a>	Invertebrate Zoology
<a href="#">BIOL 480</a>	The Diversity of Fishes
<a href="#">GEOL 364</a>	Marine Geology
<a href="#">GEOL 458</a>	Chemical Oceanography
<a href="#">GGS 307</a>	Geographic Approaches for Sustainable Development
<a href="#">CLIM 412</a>	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

<a href="#">EVPP 318</a>	Conservation Biology	3
<a href="#">BIOL 460</a>	Infectious Diseases Wildlife	3
Choose one course from the following:		3-4
<a href="#">EVPP 395</a>	Undergraduate Research in Environmental Science and Policy 1	
<a href="#">EVPP 396</a>	Directed Topic in Environmental Science and Policy 1	
<a href="#">EVPP 419</a>	Marine Mammal Biology and Conservation	
<a href="#">EVPP 494</a>	Internship 1	
<a href="#">BIOL 437</a>	Orinthology	
<a href="#">BIOL 438</a>	Mammalogy	
<a href="#">BIOL 439</a>	Herpetology	

### Zoology Courses

Choose one course from the following:		3-4
<a href="#">EVPP 395</a>	Undergraduate Research in Environmental Science and Policy 2	
<a href="#">EVPP 396</a>	Directed Topic in Environmental Science and Policy 2	
<a href="#">EVPP 427</a>	Conservation Medicine	
<a href="#">EVPP 494</a>	Internship 2	
<a href="#">BIOL 311</a>	General Genetics	
<a href="#">BIOL 331</a>	Invertebrate Zoology	
<a href="#">BIOL 332</a>	Insect Biology	

### Botany Courses

Choose from the following courses:		9
<a href="#">EVPP 395</a>	Undergraduate Research in Environmental Science and Policy 3	
<a href="#">EVPP 396</a>	Directed Topic in Environmental Science and Policy 3	
<a href="#">EVPP 494</a>	Internship 3	
<a href="#">BIOL 140</a>	Plants and People ( <a href="#">Mason Core</a> )	
<a href="#">BIOL 304</a>	Plant Biology	
<a href="#">BIOL 344</a>	Plant Diversity and Evolution	

**BIOL 345** Plant Ecology

**INTS 402** Plants and People - Sustenance, Ceremony, and Sustainability

Total Credits

21-23

- 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:**

**Program Outcomes**

## **Additional Program Information**

---

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

**Courses offered via  
distance (if  
applicable):**

**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

**Related  
Departments**

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

No

**Are you adding or removing a licensure component?**

No

## **Additional SCHEV & SACSCOC Information**

---

**Are you changing the total number of credits required for this program?**

No

**Are you changing the delivery format in any way (e.g adding an online option)?**

No

**Are you adding/removing a licensure option which was approved by SCHEV?**

No

**Will any portion of this program be offered at an off-campus location?**

No

**Will this program change affect any specialized accreditation?**

No

**Is the content of the new program closely related to that of an existing approved program?**

No

**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)?**

No

**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)?**

No

**Does this change represent a repackaging of content in an existing approved degree/certificate program?**

No

**Percentage of total credits containing new course content, excluding gen ed courses for undergraduate program: ("New content" means content that is not currently included in an existing approved degree/certificate program.) Please choose a percentage (i.e. 0%-100%)**

less than 25%

**Are the total credits for the program increasing or decreasing by more than 3 credits?**

No

**Will any additional equipment/facilities be needed?**

No

**Will any additional faculty be required?**

No

**Will any additional financial resources be needed?**

No

**Will any additional library/learning resources needed?**

No

### 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:**

**Does this program cover material which crosses into another department?**

No

**Additional Attachments**

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

**SCHEV Proposal**

**Executive Summary**

**Reviewer Comments**

**Additional Comments**

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

%wi\_required.eshtml%

Key: 151