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Viewing: **SC-MS-EVSP : Environmental Science and Policy, MS**

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Changes proposed by: jbazaz

**Catalog Pages
Using this Program**

[Environmental Science and Policy, MS](#)

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. SC CAT Editor
5. Assoc Provost-Graduate
6. Registrar:Concentrat Code
7. Registrar-Programs: Duration
8. Registrar-Programs

History

1. Nov 8, 2017 by clmig-jwehrheim
2. Feb 28, 2018 by Rebekah Zacharias (rzachari)
3. Mar 8, 2018 by Rebekah Zacharias (rzachari)
4. Mar 16, 2018 by Rebekah Zacharias (rzachari)
5. Mar 19, 2018 by Rebekah Zacharias (rzachari)
6. Mar 7, 2019 by Susan Cheselka (scheselk)
7. Nov 25, 2019 by Jennifer Bazaz Gettys (jbazaz)
8. Jan 30, 2020 by Jennifer Bazaz Gettys (jbazaz)

9. Jul 24, 2020 by
Jennifer Bazaz
Gettys (jbazaz)
10. Nov 9, 2020 by
Jennifer Bazaz
Gettys (jbazaz)

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Effective Catalog: 2021-2022

Program Level: Graduate

Program Type: Master's

Degree Type: Master of Science

Title: Environmental Science and Policy, MS

Banner Title: MS Environmental Sci & Policy

Registrar/OAPI Use Only – SCHEV Status Approved

Registrar’s Office Use Only – Program Start Term

Registrar/OAPI Use Only – SCHEV Letter

Registrar/OAPI Use Only – SACSCOC Status

Concentration(s):

	Associated Concentrations	Registrar's Office Use Only: Concentration Code
1	Aquatic Ecology	AQEC
2	Conservation Science and Policy	COSP
3	Environmental Science and Policy	EVSP
4	Communication for Environmental Science, Policy, and Human Behavior	CESP
5	Environment and Management	EVM

	Associated Concentrations	Registrar's Office Use Only: Concentration Code
6	Energy and Sustainability Policy and Science	ESPS
7	Conservation Medicine & Planetary Health	

Registrar/IRR Use Only – Concentration CIP Code

College/School: College of Science

Department / Academic Unit: Environmental Science & Policy

Jointly Owned Program? No

Justification

1. Adding elective courses to the Energy and Sustainability Policy and Science concentration

The six courses proposed for addition to the ESPS concentration's electives for the MS degree include three water/environmental engineering courses, two courses in food systems science and policy, and one course in ecosystems analysis and modeling. All of these subject areas are important to the energy and sustainability fields, and they are not broadly represented in the concentration's existing science and policy/methods electives. Thus, adding these courses will contribute to attracting diverse student applicants and enhance the range of energy and sustainability-related courses that can prepare students for mid- and senior-level positions in the energy and sustainability fields.

2. Correcting ESPS concentration credit total as EVPP 542 was changed from 4 credits to 3.

3. Create a new concentration in Conservation Medicine & Planetary Health

Creation of the Master's in Environmental Science & Policy concentration in Conservation Medicine & Planetary Health (CMPH) at George Mason University (Mason) responds to strong student interest and a need for experts in transdisciplinary health and ecological sciences. The recent COVID-19 pandemic, subsequent worldwide economic collapse, and forced closure of universities and other educational institutions to virtual instruction-only further revealed the need for natural and social sciences professionals trained in transdisciplinary, systems thinking required to address health problems at the human-animal-ecosystem health interface.

Total Credits Required: Total credits: 33

Registrar's Office Use Only - Program Code:

SC-MS-EVSP

Registrar/IRR Use Only – Program CIP Code

Admission Requirements:

Admissions

University-wide admissions policies can be found in [Graduate Admissions Policies](#). Additionally, information on the admission of international students can be found in [Admission of International Students](#).

To apply for this program, please complete the [George Mason University Admissions Application](#).

Eligibility

Applicants should hold a bachelor's degree from a regionally-accredited institution with a GPA of 3.00 in natural or Earth sciences, engineering, resource planning, environmental studies, or a field that leads to an environmental focus.

Applicants should have taken at least two semesters of chemistry and three semesters of biology, including a course in ecology. Applicants who lack this coursework should contact the graduate coordinator's office for advice.

Successful completion of a two-semester sequence of introductory graduate-level environmental chemistry and biology courses can be used to satisfy the biology and chemistry prerequisites for admission. These introductory courses would be in addition to the requirements for the degree.

Application Requirements

Applicants should submit the following:

- Completed George Mason University [George Mason University Admissions Application](#).
- Three letters of recommendation, including at least one from a former professor or, if not available, from someone with a PhD.
- The GRE is required.
- Statement of interest indicating: Desired concentration, potential areas of environmental focus/research interest, interactions with potential faculty advisors, and career goals.
- Contact a potential George Mason faculty advisor (appropriate for research interests). An endorsement letter from the potential advisor must be sent to the [Department of Environmental Science and Policy](#)'s graduate office; the availability of an advisor in the student's area of interest is a prerequisite for admission.

Program-Specific Policies:

Policies

For policies governing all graduate programs, see [AP.6 Graduate Policies](#).

Course Selections

Some program requirements may be fulfilled by completing courses from a variety of academic units at Mason. A student's course selections should reflect a coherent individual program focus, which is stated and briefly described in the program of study. Course selections should also support the research component of the student's degree program (if applicable) and should be developed in close consultation with the supervisory committee. The supervisory committee approves a coursework program (the program of study) individually for each student. In special cases, the graduate program director may permit the substitution of an alternative course in place of a required one.

Supervisory Committee

Students must form a supervisory committee and submit a program of study to the graduate coordinator for approval within the first 9 credits of coursework or by the end of the second semester, whichever comes first. The supervisory committee consists of the advisor and at least two other members, chosen in consultation with the advisor, and must conform to [AP.6.9 Requirements for Master's Degrees](#).

Degree Requirements:

This is a Green Leaf program.

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

Students may select for their degree to culminate in either a research project (3 credits) or a thesis (3-6 credits). The concentration credit amount requirements below are directly related to this selection of either a research project or thesis.

Students in all of the concentrations will complete the concentration's requirements and the research requirement with a minimum of 33 credits.

Core Courses

Science Courses

Choose 3 credits from the following: 3

[EVPP 518](#) Conservation Biology

[EVPP 607](#) Fundamentals of Ecology

[EVPP 648](#) Population Ecology

Statistics Courses

Choose 3 credits from the following: 3

[EVPP 632](#) Qualitative Research Methods for Environmental Scientists

[EVPP 651](#) Multivariate Data Analysis for Ecology and Environmental Science

[SOCI 620](#) Methods and Logic of Social Inquiry

[STAT 554](#) Applied Statistics I

Policy Courses

Choose 3 credits from the following: 3

[EVPP 524](#) Introduction to Environmental and Resource Economics

[EVPP 608](#) Introduction to Environmental Social Science

[EVPP 635](#) Environment and Society

[EVPP 642](#) Environmental Policy

Science and Policy Courses

Choose 3 credits from the following:

3

[EVPP 505](#) Selected Topics in Environmental Science (When the topic is "Evidence-based Policymaking: Using the Environmental Sciences for Governance")

[EVPP 670](#) Environmental Law

Seminar Courses

[EVPP 692](#) Master's Seminar in Environmental Science and Public Policy

1

[EVPP 991](#) Advanced Seminar in Environmental Science (When the topic is: Experimental Design for Environmental Scientists)

2

Research Requirement

3-6

The research requirement may be satisfied in one of two ways: A research project or a formal thesis. The depth and sophistication of the research differs between the two options. The thesis normally involves original research with independent acquisition and interpretation of data, with the goal of peer-reviewed publication. Projects are generally less extensive and can include a broader range of activities. Choose from one of the following:

Research Project Option

Students fulfilling the research requirement with the project option register for [EVPP 798](#) Master's Research Project in Environmental Science and Public Policy and are required to take a comprehensive examination covering knowledge mastered throughout the program of study. This examination includes both a written and an oral component and is administered by the student's supervisory committee.

[EVPP 798](#) Master's Research Project in Environmental Science and Public Policy (3 credits)

Thesis Option

Students fulfilling the research requirement with the thesis option register for [EVPP 799](#) Master's Thesis in Environmental Science and Public Policy, present their results in a public seminar, and defend their thesis before their supervisory committee. Students will be graded "Satisfactory/No Credit" on the research requirement.

[EVPP 799](#) Master's Thesis in Environmental Science and Public Policy (3-6 credits)

Electives

If necessary, students must take additional electives or concentration courses to bring the degree total to 33 credits. These courses must be approved by the student's supervisory committee and outlined on the student's program of study.

Total Credits

18-

21

Aquatic Ecology Concentration (AQEC)

This concentration will provide students with a well-grounded master's in the study of aquatic environments such as lakes, streams, watersheds, and estuaries. Emphasis is placed on food webs, biogeochemical cycles, water quality, habitat characteristics, and life histories of aquatic organisms. Students will become proficient with research tools including literature review, field and laboratory methods, and analytical tools as well as applications to management issues.

Aquatic Science

[EVPP 550](#) Waterscape Ecology and Management

3

EVPP 581	Estuarine and Coastal Ecology	3
Choose 3-6 credits from the following:		3-6
EVPP 519	Marine Mammal Biology and Conservation	
EVPP 521	Marine Conservation	
EVPP 536	The Diversity of Fishes	
EVPP 545	Principles of Environmental Toxicology	
EVPP 549	Marine Ecology	
EVPP 563	Coastal Morphology and Processes	
EVPP 608	Introduction to Environmental Social Science	
EVPP 619	The Challenge of Biodiversity	
EVPP 623	Translating Environmental Policy into Action	
EVPP 635	Environment and Society	
EVPP 641	Environmental Science and Public Policy	
EVPP 642	Environmental Policy	
EVPP 643	Microbial Ecology	
EVPP 646	Wetland Ecology and Management	
EVPP 648	Population Ecology	
CLIM 512	Physical Oceanography	
Choose 3 credits from the following:		3
EVPP 515	Molecular Environmental Biology I	
EVPP 555	Lab in Waterscape Ecology	
EVPP 582	Estuarine and Coastal Ecology Laboratory	
EVPP 615	Molecular Environmental Biology II	
EVPP 647	Wetland Ecology Lab and Field	
EVPP 651	Multivariate Data Analysis for Ecology and Environmental Science	
GGS 653	GIS Analysis and Application	
STAT 554	Applied Statistics I	
Total Credits		12-15

Conservation Science and Policy Concentration (COSP)

This concentration is designed to foster an interdisciplinary, research-oriented degree focusing on the conservation of threatened species and habitats, integrating biological sciences and the human dimensions of conservation practice. Students may take courses offered by the [Department of Environmental Science and Policy](#) and other departments, including CONS courses which are offered through the [Smithsonian Mason School of Conservation](#). This unique partnership with the Smithsonian-Mason School of Conservation (SMSC) in Front Royal, Virginia offers students hands-on education in cutting-edge conservation science and human dimensions through residential, intensive classes. SMSC is renowned for its conservation research and training of conservation practitioners around the world and instructors for these classes are drawn from SMSC's conservation scientists and other experts from around the world.

EVPP 637	Human Dimensions of Climate Change	3
Choose 3 credits from the following:		3

[EVPP 518](#) Conservation Biology

[EVPP 619](#) The Challenge of Biodiversity

[EVPP 621](#) Overview of Biodiversity Conservation

Choose 3 credits from the following:

3

[EVPP 505](#) Selected Topics in Environmental Science (When the topic is "Evidence-based Policymaking: Using the Environmental Sciences for Governance")

[EVPP 529](#) Environmental Science Communication

Choose 3-6 credits from the following:

3-6

[EVPP 515](#) Molecular Environmental Biology I

[EVPP 527](#) Conservation Medicine

[EVPP 560](#) Infectious Diseases of Wildlife

[EVPP 607](#) Fundamentals of Ecology

[EVPP 615](#) Molecular Environmental Biology II

[EVPP 620](#) Development of U.S. Environmental Policies

[EVPP 623](#) Translating Environmental Policy into Action

[EVPP 648](#) Population Ecology

[GGS 553](#) Geographic Information Systems

Total Credits

12-

15

Environmental Science and Policy Concentration (EVSP)

The Environmental Science and Policy concentration is the largest within the master's and serves as a home for a broad array of research foci. It encourages an independent and creative approach to the development of curricula that reside in the general field of environmental science and policy.

Choose at least 3 credits from the following:

3

[EVPP 527](#) Conservation Medicine

[EVPP 532](#) Animal Behavior

[EVPP 543](#) Tropical Ecosystems

[EVPP 648](#) Population Ecology

Choose at least 3 credits from the following:

3

[EVPP 531](#) Land-use Modeling Techniques and Applications

[EVPP 650](#) Ecosystem Analysis and Modeling

[STAT 525](#) Nonparametric Statistics and Categorical Data Analysis

[STAT 535](#) Analysis of Experimental Data

Choose 6-9 credits from the following:

6-9

[EVPP 521](#) Marine Conservation

[EVPP 533](#) Energy Policy

[EVPP 542](#) Urban Ecosystems Processes

[EVPP 550](#) Waterscape Ecology and Management

[EVPP 560](#) Infectious Diseases of Wildlife

[EVPP 619](#) The Challenge of Biodiversity

EVPP 622	Management of Wild Living Resources
EVPP 623	Translating Environmental Policy into Action
EVPP 641	Environmental Science and Public Policy
EVPP 677	Applied Ecology and Ecosystem Management

Total Credits

12-15

Communication for Environmental Science, Policy, and Human Behavior (CESP)

The ability to communicate underlies all successful human cooperation. With the growth of anthropogenic global threats such as biodiversity loss and climate change, communication that supports environmental knowledge formation, policy, and behavior change is needed more than ever. Two courses in the concentration from the department, supplemented by those across the university, will allow students to focus on one of these topics. Other classes aside from the core courses may be substituted as needed.

[EVPP 505](#) Selected Topics in Environmental Science (When the topic is "Evidence-based Policymaking: Using 3 the Environmental Sciences for Governance")

[EVPP 529](#) Environmental Science Communication 3

Choose 3-6 credits from one of the following groupings: 3-6

Policy and Governance Grouping

[EVPP 575](#) Global Biodiversity Governance

[COMM 637](#) Risk Communication

[GOVT 510](#) American Government and Politics

[PUAD 540](#) Public Policy Process

Behavior Change Grouping

[COMM 637](#) Risk Communication

[COMM 660](#) Climate Change and Sustainability Communication Campaigns

[COMM 670](#) Social Marketing

[COMM 706](#) Strategic Communication

Science in Society Grouping

[COMM 602](#) Theories and Research of Mass Communication

[COMM 639](#) Science Communication

[COMM 642](#) Science and the Public

[COMM 735](#) Crisis Communication

Choose at least 3 credits from the following: 3

[GGS 553](#) Geographic Information Systems

[GGS 681](#) Social Media Analysis

[COMM 650](#) Research Methodologies in Communication

[COMM 775](#) Media Content Analysis

[EDRS 811](#) Quantitative Methods in Educational Research

[EDRS 827](#) Introduction to Measurement and Survey Development

[POGO 511](#) Introductory Data Analysis for Policy and Government

[POGO 646](#) Policy and Program Evaluation

- [PSYC 557](#) Psychometric Methods
- [PSYC 611](#) Advanced Statistics
- [PUBP 704](#) Statistical Methods in Policy Analysis
- [SOCI 620](#) Methods and Logic of Social Inquiry
- [SOCI 631](#) Survey Research

Total Credits

12-

15

Environment and Management Concentration (EVM)

This concentration combines the managerial and administrative skills developed in a traditional master of public administration degree program with the scientific knowledge and understanding normally found in a master of science degree. It is especially meant for individuals working in or aspiring to work as managers in the environmental field in government or private industry.

[EVPP 641](#) Environmental Science and Public Policy 3

[EVPP 677](#) Applied Ecology and Ecosystem Management 3

Choose 3 credits from the following: 3

[EVPP 638](#) Corporate Environmental Management and Policy

[PUAD 502](#) Administration in Public and Nonprofit Organizations

Choose 3-6 credits from the following: 3-6

[EVPP 505](#) Selected Topics in Environmental Science (When the topic is "Evidence-based Policymaking: Using the Environmental Sciences for Governance")

[EVPP 524](#) Introduction to Environmental and Resource Economics

[EVPP 525](#) Economics of Human/Environment Interactions

[EVPP 529](#) Environmental Science Communication

[EVPP 533](#) Energy Policy

[EVPP 542](#) Urban Ecosystems Processes

[EVPP 545](#) Principles of Environmental Toxicology

[EVPP 550](#) Waterscape Ecology and Management

[EVPP 560](#) Infectious Diseases of Wildlife

[EVPP 620](#) Development of U.S. Environmental Policies

[EVPP 646](#) Wetland Ecology and Management

[GGS 553](#) Geographic Information Systems

Total Credits

12-

15

Energy and Sustainability Policy and Science (ESPS)

Many mid-level energy and sustainability positions in the public and private sectors require multidisciplinary grounding in science, policy, and methods. To provide such a foundation, this concentration combines the scientific knowledge normally acquired through a Master of Science degree with development of relevant policy and methods skills.

Required Foundation

[EVPP 533](#) Energy Policy 3

Choose one from the following: 3

[EVPP 534](#) Food-Energy-Water Nexus

[GGS 507](#) Geographic Approaches for Sustainable Development

Science

Choose one from the following: 3

[EVPP 542](#) Urban Ecosystems Processes

[EVPP 677](#) Applied Ecology and Ecosystem Management

[GEOL 521](#) Geology of Energy Resources

[PHYS 581](#) Topics in Renewable Energy

[CEIE 501](#) Sustainable Development

[CEIE 550](#) **Environmental Engineering Systems**

[CEIE 634](#) **Geoenvironmental Design**

[CEIE 690](#) **Topics in Civil Engineering**

Policy and Methods Electives

Choose 1 or 2 from the following: 1 3-6

[EVPP 505](#) Selected Topics in Environmental Science (When the topic is "Energy Law & Regulation," or "Fundamentals of Environmental GIS" ([EVPP 505](#) can be taken twice if these two topics are taken separately))

[EVPP 534](#) Food-Energy-Water Nexus

[EVPP 503](#) Field Mapping Techniques

or [GEOL 553](#) Field Mapping Techniques

[EVPP 638](#) Corporate Environmental Management and Policy

[EVPP 650](#) **Ecosystem Analysis and Modeling**

[CSS 645](#) Spatial Agent-Based Models of Human-Environment Interactions

[GGS 507](#) Geographic Approaches for Sustainable Development

[ECON 695](#) Special Topics in Economics

[NUTR 608](#) **Perspectives on Food Security**

[NUTR 630](#) **Global Nutrition**

Total Credits 12-

15

1 Choose courses that have not already been taken.

Conservation Medicine & Planetary Health Concentration

Conservation Medicine and Planetary Health (CMPH) are emerging disciplines that address complex health problems that follow disturbances to the Earth's natural systems requiring transdisciplinary collaborations, systems thinking, and adaptive management approaches to health and ecology. Conservation Medicine evolved from the singular key principle that *health connects all species in the planet*. Planetary Health is focused on characterizing the human health impacts of anthropogenic disruptions of Earth's natural systems. The CMPH concentration will provide training in quantitative and qualitative research methods and expand the student's

ability to think outside of the box and work beyond traditional disciplinary silos to address complex health issues rooted in ecological principles.

Students should complete the Required Foundation and choose either the Conservation Medicine or the Planetary Health areas of focus.

Required Foundation

<u>EVPP 505</u>	Selected Topics in Environmental Science (When the topic is "Planetary Health")	3
<u>EVPP 527</u>	Conservation Medicine	3
<u>EVPP 677</u>	Applied Ecology and Ecosystem Management	3

Areas of Focus

3-6

Conservation Medicine

Choose 3-6 credits from the following:

<u>EVPP 545</u>	Principles of Environmental Toxicology
<u>EVPP 560</u>	Infectious Diseases of Wildlife
<u>EVPP 651</u>	Multivariate Data Analysis for Ecology and Environmental Science
<u>EVPP 575</u>	Global Biodiversity Governance
<u>BIOD 609</u>	Biodefense Strategy
<u>GG5 540</u>	Health Geography
<u>GCH 604</u>	Fundamentals of Epidemiology and Biostatistics
<u>CLIM 690</u>	Scientific Basis of Climate Change
<u>PUAD 630</u>	Emergency Planning and Preparedness

Planetary Health

Choose 3-6 credits from the following:

<u>EVPP 525</u>	Economics of Human/Environment Interactions
<u>EVPP 529</u>	Environmental Science Communication
<u>EVPP 542</u>	Urban Ecosystems Processes
<u>EVPP 610</u>	Bioremediation: Theory and Applications
<u>EVPP 637</u>	Human Dimensions of Climate Change
<u>EVPP 642</u>	Environmental Policy
<u>COMM 735</u>	Crisis Communication
<u>GCH 543</u>	Global Health
<u>NUTR 630</u>	Global Nutrition

Total Credits

12-

15

Retroactive
Requirements
Updates:

Plan of Study:

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?

No

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 programs. ("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 be 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

SCHEV Proposal

Executive Summary

Reviewer Comments

Additional Comments

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

%wi_required.eshtml%