Program Change Request

Date Submitted: 08/16/21 10:39 am

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

Last approved: 02/23/21 4:51 pm

Last edit: 08/16/21 10:39 am

Changes proposed by: jbazaz

Catalog Pages
Using this Program
Environmental Science and Policy, MS

Rationale for

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-Programs

Approval Path

1. 08/24/21 2:36 pm A. Alonso Aguirre (aaguirr3): Approved for ESP Chair

History

1. Nov 8, 2017 by clmig-jwehrheim
2. Feb 28, 2018 by rzachari
3. Mar 8, 2018 by rzachari
4. Mar 16, 2018 by rzachari
5. Mar 19, 2018 by 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)
11. Jan 29, 2021 by Jennifer Bazaz Gettys (jbazaz)
12. Feb 23, 2021 by Johanna Riemen (jriemen)

Name	Extension	Email
Jennifer Sklarew	2012	jsklarew

Effective Catalog:	2022-2023
Program Level:	Graduate
Program Type:	Master's
Degree Type:	Master of Science
Title:	Environmental Science and Policy, MS
Banner Title:	MS Environmental Sci & Policy
Is this a retitling of an existing	
Existing Program	
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
6	Energy and Sustainability Policy and Science	ESPS
7	Conservation Medicine & Planetary Health	CMPH

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

Adding CEIE 742 as a Science option within the Energy and Sustainability Policy and Science concentration. This course was accidentally omitted when the concentration was originally approved.

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 an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent 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 the Environmental Sciences for Governance")	3
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	
CEIE 742	**Water Resources Engineering II: Water Resource Systems**	
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 (CMPH)

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		
EVPP 505	Selected Topics in Environmental Science (When the topic is "Planetary Health")	3
EVPP 527	Conservation Medicine	3
EVPP 677	Applied Ecology and Ecosystem Management	3
Areas of Focus		3-6
Conservation Medicine		
Choose 3-6 credits from the following:		
EVPP 545	Principles of Environmental Toxicology	
EVPP 560	Infectious Diseases of Wildlife	
EVPP 651	Multivariate Data Analysis for Ecology and Environmental Science	
EVPP 575	Global Biodiversity Governance	
BIOD 609	Biodefense Strategy	
GGS 540	Health Geography	
GCH 604	Fundamentals of Epidemiology and Biostatistics	
CLIM 690	Scientific Basis of Climate Change	
PUAD 630	Emergency Planning and Preparedness	
Planetary Health		
Choose 3-6 credits from the following:		
EVPP 525	Economics of Human/Environment Interactions	
EVPP 529	Environmental Science Communication	
EVPP 542	Urban Ecosystems Processes	
EVPP 610	Bioremediation: Theory and Applications	
EVPP 637	Human Dimensions of Climate Change	
EVPP 642	Environmental Policy	
COMM 735	Crisis Communication	
GCH 543	Global Health	
NUTR 630	Global Nutrition	
Total Credits		12-15

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?

No

Off-campus details:

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

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

What off-campus location(s)? List all

**What percentage of credits toward this program are offered at the off-campus lo
Please list percentages by site (i.e. 15% at Site A, 35% at Site B etc.)**

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

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)?

No

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)?

No

Which existing approved program(s)?

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

No

Which existing approved program(s)?

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/facilites 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:

Will any 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

List sustainability-related courses currently required

Does this program cover material which crosses into another department?

No

Impacted

Additional Attachments

SCHEV Proposal

Executive Summary

Reviewer Comments

Additional Comments

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

%wi_required.eschtml%

Attached

Key: 189