

CLIMATE RESILIENCE AND ADAPTATION MINOR (ATMS)

Banner Code: CLRA

Academic Advising

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Website: <https://science.gmu.edu/academics/departments-units/atmospheric-oceanic-earth-sciences/climate-resilience-and-adaptation>

Overview

Climate-related disasters in the United States resulting in losses exceeding \$1 billion each are on the rise. Virginia alone has suffered hundreds of multimillion-dollar disasters resulting from extreme weather and climate change. The increasing severity and frequency of climate change impacts on communities worldwide have created the need for a climate-literate workforce; professionals with the knowledge and skills required to design, develop, and implement climate adaptation and resilience solutions. The minor will equip students with the skills they need to understand how and why the climate is changing; the current and expected impacts of that change; how to develop and assess adaptation strategies to enhance communities' climate readiness; and how to help societies and ecosystems gain resilience to future impacts of climate change for generations to come. Climate resilience and adaptation encompasses a wide range of disciplines reflected in the minor's unique curriculum; the minor also includes practical experience to ensure career-readiness.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (<https://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-3-4>).

Requirements

Minor Requirements

Total credits: 16-18

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Students must successfully complete the following coursework with a minimum GPA of 2.00.

Foundation Courses

Code	Title	Credits
CLIM 101 & CLIM 103	Global Warming: Weather, Climate, and Society (Mason Core) (https://catalog.gmu.edu/mason-core/) and Global Warming: Weather, Climate, and Society Laboratory (Mason Core) (https://catalog.gmu.edu/mason-core/)	4

EVPP 490	Special Topics in Environmental Science and Policy (when the topic is "Climate Change Adaptation Planning and Assessment")	3
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Total Credits 7

Practical Experience

Code **Title** **Credits**
Students have the option of completing this requirement via an internship, an independent research project, or a capstone course: 3

Internship ^{1,2}		
ANTH 495	Internship	
BUS 492	Internship in Business ³	
CLIM 409	Research Internship	
COMM 450	Internship in Communication	
ECON 493	Capstone Internship (Mason Core) (https://catalog.gmu.edu/mason-core/)	
EVPP 494	Internship	
GCH 498	Global and Community Health Internship	
GOVT 480	Internship	
INTS 490	Internship	
SOCI 416	Internship in Sociology I (Mason Core) (https://catalog.gmu.edu/mason-core/)	
Independent Research Project ¹		
ANTH 450	Ethnographic Research Methods	
CEIE 490	Civil Engineering Senior Design Project I (Mason Core) (https://catalog.gmu.edu/mason-core/)	
CEIE 491	Civil Engineering Senior Design Project II (Mason Core) (https://catalog.gmu.edu/mason-core/)	
CONF 370	Internship Field Experience	
CONF 375	Special Programs Field Experience	
CONF 385	International Field Experience	
GCH 499	Independent Study in Global and Community Health	
GOVT 399	Research Practicum	
INTS 498	Experiential Learning	
SYST 490	Senior Design Project I	
SYST 495	Senior Design Project II (Mason Core) (https://catalog.gmu.edu/mason-core/)	
Capstone Course		
EVPP 480	Sustainability in Action (Mason Core) (https://catalog.gmu.edu/mason-core/)	
GCH 465	Community Health Capstone (Mason Core) (https://catalog.gmu.edu/mason-core/)	
GEOL 420	Earth Science and Policy (Mason Core) (https://catalog.gmu.edu/mason-core/)	
GEOL 480	Internship	

GGS 485	Capstone in Geography and Geoinformation Science (Mason Core) (https://catalog.gmu.edu/mason-core/)
PSYC 499	Senior Thesis
Total Credits	
3	

¹ The proposed project or internship must be approved by the Climate Resilience and Adaptation Coordinator and the student's academic advisor.

Projects or internships should meet at least one of the following criteria:

- Support climate readiness efforts of local partners,
- Contribute to regional or state-wide assessment of climate vulnerabilities, or
- Contribute to regional or state-wide opportunities to increase resilience

² George Mason's Virginia Climate Center (<https://www.vaclimate.gmu.edu/>) at Mason can facilitate student connections with potential mentors and identify suitable placements for internships.

³ Available only to Costello College of Business students who meet the course's prerequisite.

Elective Courses

Code	Title	Credits
Select 6-8 credits from the following:		6-8
ANTH 370	Environment and Culture	
ANTH 394	Archaeology of Climate Change	
BIOL 301	Biology and Society (Mason Core) (https://catalog.gmu.edu/mason-core/)	
BIOL 379	RS: Ecological Sustainability (Mason Core) (https://catalog.gmu.edu/mason-core/)	
BUS 200	Global Environment of Business (Mason Core) (https://catalog.gmu.edu/mason-core/)	
BUS 295	Business Models For Sustainability	
CEIE 100	Environmental Issues and Solutions Around the World (Mason Core) (https://catalog.gmu.edu/mason-core/)	
CEIE 441	Engineering for Climate Adaptation	
CEIE 445	Flood Hazards Engineering and Adaptation	
CEIE 452	Climate Change Engineering and Policy	
CLIM 102	Introduction to Global Climate Change Science (Mason Core) (https://catalog.gmu.edu/mason-core/)	
CLIM 111	Introduction to the Fundamentals of Atmospheric Science (Mason Core) (https://catalog.gmu.edu/mason-core/)	
CLIM 312 or GGS 312	Physical Climatology	
CLIM 314	Severe and Extreme Weather	
CLIM 319	Air Pollution	
CLIM 440	Climate Dynamics	
COMM 433	Environmental Communication, Campaigns, and Social Movements	

CONF 300	Conflict Resolution Techniques and Practice
CONF 330	Community, Group, and Organizational Conflict Analysis and Resolution
CONF 340	Global Conflict Analysis and Resolution (Mason Core) (https://catalog.gmu.edu/mason-core/)
CONF 347	Mobilizing for Change and Justice
ECON 105	Environmental Economics for the Citizen (Mason Core) (https://catalog.gmu.edu/mason-core/)
ECON 309	Economic Problems and Public Policies
ECON 335	Environmental Economics
ECON 435	Economics of Energy
EVPP 322	Business and Sustainability
EVPP 336	Tackling Wicked Problems in Society the Environment (Mason Core) (https://catalog.gmu.edu/mason-core/)
EVPP 337	Environmental Policy Making in Developing Countries (Mason Core) (https://catalog.gmu.edu/mason-core/)
EVPP 361	Introduction to Environmental Policy
EVPP 362	Intermediate Environmental Policy
EVPP 378	RS: Ecological Sustainability (Mason Core) (https://catalog.gmu.edu/mason-core/)
EVPP 432	Energy Policy
EVPP 434	Food-Energy-Water-Climate Nexus
EVPP 436	Politics of Climate Change Governance
EVPP 442	Urban Ecosystems and Processes
EVPP 480	Sustainability in Action (Mason Core) (https://catalog.gmu.edu/mason-core/)
GCH 305	Introduction to OneHealth
GCH 360	Health and Environment
GEOL 120	The Changing Ocean (Mason Core) (https://catalog.gmu.edu/mason-core/)
GEOL 121	The Changing Ocean Laboratory (Mason Core) (https://catalog.gmu.edu/mason-core/)
GEOL 305	Environmental Geology (Mason Core) (https://catalog.gmu.edu/mason-core/)
GEOL 332	Paleoclimatology
GGS 103	Human Geography (Mason Core) (https://catalog.gmu.edu/mason-core/)
GGS 302	Global Environmental Hazards
GGS 303	Geography of Resource Conservation (Mason Core) (https://catalog.gmu.edu/mason-core/)
GGS 304	Population Geography (Mason Core) (https://catalog.gmu.edu/mason-core/)
GGS 306	Urban Geography
GGS 307	Geographic Approaches for Sustainable Development
GGS 354	Data Analysis and Global Change Detection Techniques
GLOA 388	Global Health and Development

GOVT 352	Responsible Innovation
GOVT 357	Urban Planning
GOVT 361	Introduction to Environmental Policy
GOVT 362	Intermediate Environmental Policy
GOVT 364	Public Policy Making
GOVT 464	Issues in Public Policy and Administration (when the topic is "Introduction to Energy and Climate Law")
INTS 102	Global Networks and Communities (Mason Core) (https://catalog.gmu.edu/mason-core/)
INTS 210	Sustainable World (Mason Core) (https://catalog.gmu.edu/mason-core/)
INTS 211	Introduction to Conservation Studies (Mason Core) (https://catalog.gmu.edu/mason-core/)
INTS 292	Leadership for Sustainability
INTS 304	Social Movements and Community Activism (Mason Core) (https://catalog.gmu.edu/mason-core/)
INTS 332	Business and Sustainability
INTS 334	Environmental Justice (Mason Core) (https://catalog.gmu.edu/mason-core/)
INTS 337	Social Justice Consciousness and Action
INTS 406	Global Leadership (Mason Core) (https://catalog.gmu.edu/mason-core/)
INTS 450	Social Innovation in Action
MGMT 454	Social Impact and Entrepreneurship
PHIL 243	Global Environmental Ethics (Mason Core) (https://catalog.gmu.edu/mason-core/)
PHIL 343	Topics in Environmental Philosophy (Mason Core) (https://catalog.gmu.edu/mason-core/)
PSYC 335	Psychology of Creativity and Innovation
PSYC 410	The Psychology of Environmental Stewardship
PSYC 427	Community Engagement for Social Change (Mason Core) (https://catalog.gmu.edu/mason-core/)
SOCI 332	The Urban World (Mason Core) (https://catalog.gmu.edu/mason-core/)
SOCI 352	Social Problems and Solutions (Mason Core) (https://catalog.gmu.edu/mason-core/)
WMST 319	Gender, Health, and Culture in the United States

Total Credits**6-8**