

ENERGY POLICY AND CLIMATE, MASTER OF SCIENCE

MS in Energy Policy and Climate (<https://advanced.jhu.edu/academics/graduate/ms-energy-policy-climate/>)

The Master of Science in Energy Policy and Climate program will prepare the next generation of interdisciplinary professionals to address the challenges of climate change and to understand the global transition of energy systems.

Graduates will be able to demonstrate an understanding of the science related to a changing climate, the impacts of current and future climate change on natural and human systems, the vulnerabilities of these systems to predicted changes, and a variety of possible legal, policy, and technological strategies for mitigation and adaptation. Graduates will also develop a comprehension of energy production, delivery, and consumption for both traditional systems and sustainable/renewable energy alternatives, and the implications of our energy choices for averting dangerous levels of climate change.

The program was originally designed by members of JHU's Department of Earth and Planetary Sciences in the Krieger School of Arts and Sciences and by industry and policy specialists. Courses are taught by distinguished instructors with valuable experience in the academic, public, corporate, and nonprofit sectors. The program seeks to build in students the technical and management skills needed to become highly competent and ethical professionals capable of leading societal responses to the challenges of a changing climate and the quest for a revolution in energy production. The curriculum is designed to help students develop an understanding of policy strategies employed at all levels, from the local to the international level, in response to these challenges. Graduates of the program will have an understanding of the current state of the U.S. response to climate change, as well as a familiarity with multilateral agreements and non-U.S.-based approaches to both mitigation of and adaptation to climate change. Additionally, students will develop expertise in energy production and policymaking.

Admissions Criteria for All Advanced Academic Programs (<https://e-catalogue.jhu.edu/arts-sciences/advanced-academic-programs/Admission/#admissionrequirementstext>)

PROGRAM-SPECIFIC REQUIREMENTS

In addition to the materials and credentials required for all programs, the MS in Energy Policy and Climate program has the following program-specific requirements:

- **Resume**
- **Two Letters of Recommendation**
- **Statement of Purpose:** Please provide a statement, up to one page in length, describing your personal background and/or a part of your life experience that has shaped you or your goals. Feel free to elaborate on personal challenges and opportunities that have influenced your decision to pursue a graduate degree at Johns Hopkins.
- **Required Coursework:**

- One semester of undergraduate calculus
- One semester of undergraduate statistics
- One semester of undergraduate chemistry

Program Requirements

Students pursuing the MS in Energy Policy and Climate degree must complete 10 courses:

- Three required core courses
- Two customizable core courses
- Five electives

Code	Title	Credits
Core Courses - Required:		9
AS.425.601	Principles and Applications of Energy Technology	
AS.425.602	Science of Climate Change and its Impact	
AS.425.800	Research Design for Capstone Projects in Energy and Environmental Sciences	
Core Courses - Customizable:		6
<i>Select two of the following:</i>		
AS.425.603	Climate Change Policy Analysis	
AS.425.604	Energy & Climate Finance	
AS.425.605	Introduction to Energy Law & Policy	
Electives		15
Total Credits		30

MS in Energy Policy and Climate Focus Areas

Students wishing to further customize their degree can focus on one of the following areas or combine them. These are suggested elective courses to illustrate how degree customization can take place. Students should consult with their adviser for further recommendations appropriate to their career and academic goals.

Climate Change Focus Area

Code	Title	Credits
Electives		
AS.425.630	Cities and Climate Change	3
AS.425.634	Climate Change and Health	3
AS.425.637	International Climate Change Policy	3
AS.425.638	Adaptation to Climate Change	3
AS.425.647	Energy and Water Security in South Asia	3

Energy Focus Area

Code	Title	Credits
Electives		
AS.425.624	Wind Energy: Science, Technology and Policy	3
AS.425.625	Solar Energy: Science, Technology & Policy	3
AS.425.628	Renewable Energy Project Development and Finance	3
AS.425.636	Emerging Energy Technologies and Applications	3
AS.425.644	Principles & Applications of Energy Technology II	3
AS.425.646	US Offshore Energy: Policy, Science and Technology	3
AS.425.651	The Electric Grid: Technology and Policy	3

AS.425.652	Nuclear Energy: Technology, Policy, and Regulations	3
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Policy Focus Area

Code	Title	Credits
Electives		
AS.425.606	Social Science Research Methods for Energy & Environmental Policy	3
AS.425.615	Understanding Public Attitudes for the Communication of Climate and Energy Policy	3
AS.425.623	Transportation Policy in a Carbon-constrained World	3
AS.425.637	International Climate Change Policy	3
AS.425.639	Energy Markets and Strategy from Europe to Asia	3
AS.425.645	Global Energy Policy	3
AS.425.652	Nuclear Energy: Technology, Policy, and Regulations	3

Social Perspectives in Climate and Energy Focus Area

Code	Title	Credits
Electives		
AS.425.606	Social Science Research Methods for Energy & Environmental Policy	3
AS.425.615	Understanding Public Attitudes for the Communication of Climate and Energy Policy	3
AS.425.617	Energy, Eutrophication, and Inundation in Coastal Louisiana	3
AS.425.620	Climate Risk: Society and The Economy	3
AS.425.626	Climate Anthropology and Changing Communities	3

Modeling Focus Area

Code	Title	Credits
AS.420.619	Climate Dynamics (ESP Course/cross-listed)	3
AS.425.641	Greenhouse Gas Inventory, Accounting, and Reporting	3
EN.575.720	Air Resources Management and Modeling	3
EN.575.735	Energy Policy and Planning Modeling	3

Electives

Code	Title	Credits
Electives		
<i>Choose five of the following:</i>		
AS.425.606	Social Science Research Methods for Energy & Environmental Policy	3
AS.425.615	Understanding Public Attitudes for the Communication of Climate and Energy Policy	3
AS.425.617	Energy, Eutrophication, and Inundation in Coastal Louisiana	3
AS.425.620	Climate Risk: Society and The Economy	3
AS.425.623	Transportation Policy in a Carbon-constrained World	3
AS.425.624	Wind Energy: Science, Technology and Policy	3
AS.425.625	Solar Energy: Science, Technology & Policy	3
AS.425.626	Climate Anthropology and Changing Communities	3

AS.425.628	Renewable Energy Project Development and Finance	3
AS.425.630	Cities and Climate Change	3
AS.425.634	Climate Change and Health	3
AS.425.636	Emerging Energy Technologies and Applications	3
AS.425.637	International Climate Change Policy	3
AS.425.638	Adaptation to Climate Change	3
AS.425.639	Energy Markets and Strategy from Europe to Asia	3
AS.425.644	Principles & Applications of Energy Technology II	3
AS.425.645	Global Energy Policy	3
AS.425.646	US Offshore Energy: Policy, Science and Technology	3
AS.425.647	Energy and Water Security in South Asia	3
AS.425.651	The Electric Grid: Technology and Policy	3
AS.425.652	Nuclear Energy: Technology, Policy, and Regulations	3
AS.425.689	Extreme Weather Events and Climate Change	3
AS.420.619	Climate Dynamics	3

Learning Outcomes

Graduates will be able to:

- Analyze Energy Policy and Climate concepts and topics such as energy technology (fossil-fuel based or renewables), energy law and policy, climate change and its societal and environmental impacts (adaptation and mitigation), national and international climate change policy, and energy and climate finance through technical policy developing assessments.
- Critically evaluate existing and proposed models, strategies, and policies from a variety of sources, both academic and non-academic.
- Demonstrate excellent oral and written communication skills that will enhance career objectives in the public sector, nonprofit and/or private organizations.
- Demonstrate proficiency in use of qualitative or quantitative research methodologies and the communication of findings for relevant academic or public policy areas.