



THE WORLD'S TOP SUSTAINABILITY PROGRAMS

MASTER OF SCIENCE IN SUSTAINABILITY SCIENCE

Master of Science in **Sustainability Management**

Certification of Professional Achievement in
Sustainability Analytics

Certification of Professional Achievement in
Sustainable Finance

Certification of Professional Achievement in
Sustainable Water Management

Master of Science in Sustainability Science

OVERVIEW

Columbia University in the City of New York offers the world's foremost master's degree programs in applied sustainability studies. The Master of Science in Sustainability Science program is offered by Columbia's School of Professional Studies in partnership with the Columbia Climate School. Bolstered by the cutting-edge research of the Columbia Climate School's Earth Institute and the Lamont-Doherty Earth Observatory, the MS in Sustainability Science offers students a world-class education, based on a practical, hands-on curriculum, which will allow them to advance in their professional careers and become leaders in their fields.

In recognition of the critical importance of incorporating scientific knowledge into the field of sustainability, the program was launched in 2018. It is designed for current and aspiring leaders who wish to help organizations and policymakers better understand, predict, and address environmental impacts. Ideal candidates have an undergraduate degree in science, engineering, math or related fields. Graduates will be skilled in the practical application of scientific expertise, research, and methodologies to solve sustainability issues impacting everything from local environments to the global climate.

Students who complete this course of study learn how to:

- Use scientific methods to **observe** and **monitor** the sustainability of natural systems.
- **Analyze** and **model** scientific data related to current and future environmental conditions and effects on communities.
- Use scientific tools and instruments to **detect** disruptive sustainability issues and evaluate **solutions**.
- Strategically **integrate** scientific knowledge in the **decision-making** processes of policymakers and managers.
- Employ scientific knowledge to **conserve** and **maintain** the earth's natural resources and environmental conditions.

There is a growing demand for sustainability science professionals in a range of sectors. Graduates are equipped for management and leadership positions in which they supervise scientific and technical personnel or shape policy through their scientific expertise.

Graduates have access to Columbia's unparalleled resources and professional network of sustainability professionals, along with its global alumni base. New York City serves students as a living laboratory for developments in sustainability practice, and as a source of many employers who hire program graduates.

The MS in Sustainability Science program is customized for working professionals. Students have the flexibility to choose from a variety of courses to position themselves for professional advancement. The program is offered as both a full- and part-time course of study. Courses are held primarily in the evenings, and the degree can be completed without daytime courses. The program is structured to enable part-time students to maintain full-time employment while pursuing their degree requirements.

Graduates receive the knowledge, training, tools, and confidence to tackle the most complex and disruptive environmental and natural resource challenges, with the goal of establishing a sustainable world.

The Earth Institute, which is now part of Columbia University's Climate School, blends research in the physical and social sciences, education, and practical solutions to help guide the world onto a path toward sustainability. The Columbia Climate School will provide the scholarship needed to tackle climate change and its related challenges.

The School of Professional Studies offers innovative and rigorous programs that focus on the principles of cross-disciplinary knowledge, lifelong learning and an agile response to a changing environment. Its programs combine theory with practice, leverage the expertise of students and faculty, and connect global constituencies.

CURRICULUM

By learning practical scientific methods in observation and analysis, and the use of cutting-edge tools, students are prepared to monitor, analyze, predict, and respond to environmental change. Students must successfully complete 36 credits or 12 courses. They can enroll on a full-time or part-time basis. They have the flexibility to choose from courses in the program designed especially for them, as well as from pre-approved courses taught throughout Columbia. Courses are categorized into five areas of study:

1. Integrative Courses in Sustainability Science (9 credits or 3 courses)

Courses in this area teach students the scientific underpinnings of the complex interactions between human beings and nature. The courses challenge students to integrate their knowledge of earth observation, measurement, analysis, and modeling skills, as well as the use of scientific tools, to inform sustainability policy, management, and decision-making.

- Fundamentals of Sustainability Science (Required)
- Capstone Workshop in Sustainability Science (Required)
- and more...

2. Methods of Earth Observation and Measurement (9 credits or 3 courses)

This area of study introduces students to basic scientific methods used in observing and monitoring natural systems. Students learn to apply these methods in assessing the condition of natural systems, and in making data-driven conclusions about their sustainability.

- Statistics, Data Analysis, and Coding for Sustainability Science (Required)
- Observing and Understanding Sea Level Change
- Predicting the Effects of Climate Change on Global Forests
- Environmental Sustainability Indicators: Construction and Use
- Remote Sensing for Aquatic Environments
- and more...

3. Analysis and Modeling Environmental Conditions and Impacts (9 credits or 3 courses)

Courses in this area train students to analyze and model scientific data to understand current and future environments and their interactions with human systems. By learning analysis and modeling, students are better able to inform sustainability policy, management, and decision-making.

- Climate Science for Decision-Makers: Modeling, Analysis, and Applications
- Geographic Information Systems for Sustainability Science
- Monitoring and Analysis of Marine and Estuary Systems
- and more...

4. Scientific Tools for Responding to Sustainability Challenges (6 credits or 2 courses)

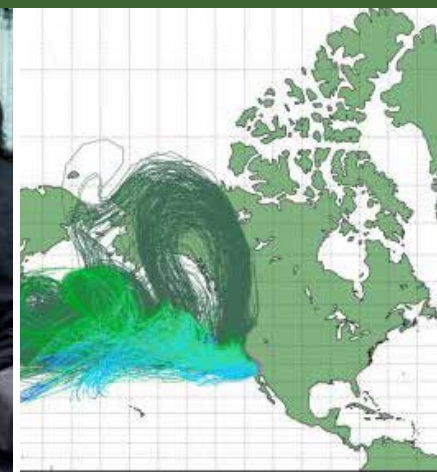
In this area, students learn how to use scientific tools in order to prevent, detect, respond, and adapt to pressing sustainability issues, such as the loss of biodiversity, climate change impacts, soil and water contamination, and threats to populations.

- The Technology of Renewable Energy
- Sustainability in the Face of Natural Disasters
- Fundamentals of Economic and Financial Impacts of Climate Change
- Carbon Capture Utilization and Storage
- Environmental Investigation and Remediation
- and more...

5. Sustainability Policy or Management (3 credits or 1 course)

This area examines the relationships among sustainability science, policy, governance, and management. Students learn about the socio-political and economic contexts in which sustainability science is practiced and the opportunities and obstacles for integrating scientific knowledge in decision-making. Students also examine the intersectional roles of sustainability science, environmental justice, and the disparate impacts of climate impacts and mitigation measures.

- Managing Diverging Stakeholder Interests in Response to Climate Change
- and more...



CAREERS

Helping students and alumni meet their professional goals is a top priority of the program. Both students and alumni have access to a wealth of professional development services from the School of Professional Studies and the Climate School's Earth Institute. The School of Professional Studies offers the Career Design Lab, which provides tailored career services and programming in addition to self-directed online tools for professional development. The Climate School offers a broad sustainability-specific professional development program, which focuses on skill building, access to leading practitioners, career networking, and specialized job search strategies and tools. Initiatives include:

- Research, Fieldwork, and Internship Opportunities
- Climate & Sustainability Career Planning
- Access to Climate and Sustainability Practitioners
- Climate & Sustainability Alumni Network
- Associations & Clubs
- Fellowships & Scholarships

FACULTY

The faculty are primarily scientists at the Lamont-Doherty Earth Observatory – the world's leader in the Earth Sciences. Lamont Research Professors Braddock Linsley and Brendan Buckley serve as the Program Co-Directors. They are joined on the faculty by some of the world's leading experts in the monitoring, analysis, and remediation of environmental impacts. From global climate change to earthquakes, volcanoes, non-renewable resources, environmental hazards and beyond, the program's faculty work with students on the fundamental challenge of sustainability science to provide a rational basis for the difficult choices faced by humankind in the stewardship of this fragile planet.

STUDENTS

The students build on their backgrounds in science, math, and engineering, and related fields, to advance sustainability. Students enroll in the program from a variety of backgrounds including environment, health and safety, energy and utilities, chemistry, engineering, manufacturing, regulatory compliance, remediation strategies, impact investing, pharmaceuticals, sustainability consulting, and more. The program's students are mission-driven and passionate about incorporating scientific principles of sustainability in their respective professions.

ALUMNI

Graduates solve disruptive sustainability issues, influence decision-making processes of policymakers and managers, and protect earth's natural resources and environmental conditions using scientific tools and knowledge. Alumni hold leading positions in private companies, government agencies, and non-profit organizations both in the United States and abroad. Examples of alumni roles:

- Director, Climate Growth Fund | Blue Earth Capital
- Neighborhood Air Pollution Control Lead | MN Pollution Control Agency
- Environmental Scientist | Langan Engineering & Environmental Services
- Director, Sustainability Graduate Programs | Columbia University
- Senior Analyst, Environmental Chemistry | Gradient
- Director of Research | Map Collective
- Environmental Health Safety Engineer | SpaceX
- Senior Decarbonization Analyst | EcoAct
- Investment Manager | Korea Federation of Small and Medium Business (KBIZ)
- Associate | McKinsey & Company



ADMISSIONS

Time Commitment

The MS in Sustainability Science offers full-time and part-time options for those with current professional obligations, along with flexible course options, which can be tailored to students' specific career goals. Courses are held primarily in the evenings, and the degree can be completed without daytime courses. In fact, 70% of students enroll in the program on a part-time basis and complete the program in up to nine semesters, and 30% of our students enroll in the program on a full-time basis and complete the program in three semesters.

Who Should Apply

The MS in Sustainability Science is designed for professionals with backgrounds in engineering, math, science, or related fields, who want to enter the sustainability field, or who already have some sustainability function in their current positions. Practitioner experience is greatly valued, and accomplishments in the field of sustainability science or environmental science are considered. *Please note: college-level science, math, and/or economics are required.*

Fellowship Funding

The program offers fellowships for use towards the cost of tuition for competitive candidates based on academic and professional merit.

Application Deadlines

Applications are accepted on a rolling basis. Prospective students are encouraged to apply early.

- Fall Admission: **Final deadline is May 1**
- Spring Admission: **Final deadline is November 1**

How to Apply

For complete information about how to apply to the program, please visit www.science.ei.columbia.edu

Application Materials Checklist

Only complete applications are reviewed.

- Completed online application form
- \$150 nonrefundable application fee
- Transcripts from all postsecondary schools
- Professional resumé
- Statement of academic purpose
- Two letters of recommendation
- Demonstration of English proficiency (if your first or native language is not English)
- Video essay

Please visit our website for a complete list of application requirements and admissions policies.

BEST REASONS TO APPLY



COLUMBIA'S EXCELLENCE

and reputation in sustainability education, **globally recognized** for strength in Earth Science by the National Research Council



OVER 200 ENVIRONMENTAL

and sustainability courses taught every year by the world's best practitioners and researchers, **more than any other university**



FLEXIBLE CURRICULUM,

part-time option, and evening classes to **personalize your experience**

COLUMBIA'S GLOBAL ALUMNI NETWORK

with more than 3,000 environmental and sustainability professionals from various partner programs working at the **world's most influential** organizations



Lamont-Doherty administers

THE VETLESEN PRIZE, "the Nobel Prize in Earth Sciences."



PROGRAM CONTACT

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