

Certification of Professional Achievement in Sustainable Water Management

The Sustainable Water Management Certification, developed by Columbia University's Earth Institute, the Columbia Water Center, and the School of Professional Studies, provides the skills necessary to improve water access, delivery, and quality.

This certification equips professionals with the skills to conduct integrated water management and water systems analysis. These professionals—ranging from urban planners for local governments to operations managers for large supply chains, to NGO workers focused on issues of health in developing communities—need new skills to create effective solutions to the world's water problems.

According to the United Nations Development Programme, just under 900 million people lack access to safe water and over 2.7 billion lack access to basic sanitation. As the world's population continues to grow, the demand for access to water is rising. At the same time, the impacts of climate change are making it more difficult to ensure the supply of safe water to the populations that need it most. The Sustainable Water Management Certification addresses concepts of hydrology, water policy and regulation, economics, finance and conflict resolution. The program is designed to provide sophisticated and multidisciplinary training in water issues—the nexus of natural science, social science and public policy.

Students will learn the science of the hydrological cycle; best practices in water systems management; the economics of water; how large-scale water projects are financed; how water is allocated and the principles of water rights, access and privatization. Students will also learn how to develop reliable water supplies given diverse sources and variability in climate and water quality.

FACULTY

Dr. Upmanu Lall, a leading expert on hydroclimatology, climate change adaptation, risk analysis and mitigation, directs the program. Course instructors include both expert faculty and leading practitioners in the fields of hydrology, environmental management, economics, and water policy.

STUDENTS

The Sustainable Water Management Certification is designed for a broad range of professionals, whose careers involve water-related issues. The certification is applicable to a variety of fields and industries, including financial services, government, international development, manufacturing, risk management, supply chain management and utilities.

The Sustainable Water Management Certification can be taken as a complement to other graduate degree programs—or it can be taken separately as a stand-alone certification.

All courses are offered in the evening to accommodate the schedules of students working full-time. The certification is available through part-time enrollment. Students enrolled on a part-time basis can complete the certification in as few as two or as many as four semesters.

CURRICULUM

Students complete three required courses focused on the science, policy, and management of water systems and one elective course.

• WATER GOVERNANCE (Required)

The course provides an overview of the political, social, economic, and administrative systems that affect the use, development, and management of water resources, including sustainable development, integrated water resource management, water rights and pricing, corruption, and equity for marginal groups.

• SCIENCE OF SUSTAINABLE WATER (Required)

In this course, students gain a fundamental understanding of hydrological processes and explore sustainable strategies for integrated water resources management.

- **WATER SYSTEMS ANALYSIS (Required)**

This course offers an analytic framework for operating, managing, and planning water systems, considering changing climate, values and needs.

- **ELECTIVE COURSE (Select one)**

Subjects include but are not limited to: planning and finance for hydrologic systems, environmental data analysis, climate-water hazards, water quality, and water security, environmental engineering

COMMUNITY

Certification students are members of the Earth Institute and the School of Professional Studies communities. The Earth Institute is affiliated with more than 30 academic programs at Columbia University and has 30 research centers and programs — including the Columbia Water Center — which conduct and apply interdisciplinary scientific research to address cross-cutting issues associated with sustainable development.

The Columbia Water Center focuses on the assessment, understanding and resolution of the global crisis of freshwater scarcity. The Center's mission is to tackle the issue of global water scarcity through innovations in technology, public policy

and private action. The Center designs reliable, sustainable models of water management and development that can be implemented on local, regional and global levels.

Certification students are an integral part of a growing network of emerging sustainability professionals and are encouraged to take advantage of all university and Earth Institute cocurricular events and resources.

The certification focuses on the science, policy, and economics of sustainable water management. Students who complete the certification will be able to develop and manage reliable water supplies given diverse sources and variability in climate and water quality.



Photos: Eileen Barroso, Marco Tedesco

TO APPLY

Admission to the program is highly selective. Prospective students interested in learning about the program are encouraged to meet with the program director, the associate director, and faculty.

Application Deadlines

- Fall enrollment: May 15th
- Spring enrollment: November 1st

For more information about the Certification in Sustainable Water Management, please visit earth.columbia.edu/sustainablewatermanagement

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