

GHG Certificate Purpose

The George Washington University has partnered with the Greenhouse Gas Management Institute, the preeminent organization in the world for GHG management training, to create this customized graduate program, a one-of-a-kind certificate. The Graduate Certificate in Greenhouse Gas Management prepares its graduates to contribute to the coming low carbon future.

The United Nations' Paris Agreement, was approved by 195 countries at the 2015 United Nations Climate Change Conference of Parties. It calls for significant short- and long-term reductions of greenhouse gas emissions. Many countries are establishing market-based mechanisms and other policies to reduce emissions. There are now over thirty existing and developing carbon markets. In the United States, the Regional GHG Initiative (RGGI) and the California Air Resources Board (CARB) represent two major efforts at regulated GHG reporting and management programs. The EPA's Clean Power Plan will regulate GHG emissions from the electric power generation sector and allows for regional cap-and-trade systems.

Approximately 40,000 entities around the world quantify and report GHG emissions or removals. Many want to minimize emissions; others report to mandatory programs or want to be ready to make disclosures when those are required. Still others want to gain competitive advantage or improve their energy efficiency. A growing number of large corporations put an internal price on carbon when evaluating business opportunities.

Further Information Contact

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Graduate Certificate Credits

The GHG Management certificate program will provide those who work in the field with the tools they need for success. The program may serve as an alternative to a Master of Science degree program for professionals who may not have the time to commit to a full graduate degree program, but who wish to align their background with the rapid changes in GHG management and to expand their education beyond the Bachelor's degree.

All courses taken as part of this program may be transferred to the Master's or Doctoral programs of the School of Engineering and Applied Science at The George Washington University. Companies or other third parties employing energy managers may sponsor students in this program.



THE GEORGE
WASHINGTON
UNIVERSITY

WASHINGTON, DC

Online Graduate Certificate

Greenhouse Gas Management

This graduate certificate program provides a powerful means to acquire up-to-date knowledge of the technical facets associated with managing GHG emissions using globally-applicable standards. Specifically, the program addresses the measurement, reporting, analysis, reduction, trading, and verification of GHG emissions. It is conducted as an online program available globally.



Check us out on the web!

<https://eemi.seas.gwu.edu/GHG-certificate>

GHG Certificate Curriculum

The program is designed for aspiring and existing environmental and energy managers and other professionals in industrial, business, or government organizations. It will provide the policy and technical knowledge, skills, and abilities needed to understand and act on the GHG implications of energy management decisions to improve environmental performance and create new business opportunities. Graduates of the program will be able to measure, analyze, and report emissions related to energy use and to apply cost-effective energy management principles that reduce GHG emissions.

Students will learn the engineering, economic, legal, and logistical considerations for implementing GHG management in compliance with existing and planned GHG mitigation policy from internationally recognized leaders in this field. Topics covered in the program include:

- GHG management in the context of the challenges posed by climate change
- Fundamental concepts of GHG accounting
- Methods for estimating GHG emissions, with emphasis on energy-related activities
- Project-level mitigation through energy efficiency and renewable energy
- Mitigation policies and programs, including carbon markets
- GHG management data systems and reporting
- Verifying emissions and emission reductions

Course Descriptions

Climate Change: Policy, Impacts, and Response

EMSE 6290: This course will explore the scientific knowledge that lies behind global concerns about anthropogenic climate change and will probe the process of scientific inquiry that creates this knowledge. Students will learn how remaining uncertainties and unknowns influence the ability of science to guide climate change policymaking at local, national and international levels and the challenges of mitigating anthropogenic influences as well as potential impacts of unmitigated climate change, and adapting to such impacts.

Greenhouse Gas Measurement and Reporting

EMSE 6291: This course will cover existing methodologies and standards for measuring and reporting GHG emissions, with particular emphasis on accepted environmental accounting frameworks for the business sector and regulatory schemes. Students will develop the technical skills required to estimate, analyze, and manage GHG emission inventories at various scales. They also will develop the ability to report results that satisfy current and emerging local, national, and international requirements, and gain knowledge to advise business leaders on the implications of these inventories.

Course Descriptions

Greenhouse Gas Mitigation: Projects and Markets

EMSE 6292: This course will cover methods of conducting mitigation analyses, including identification and analysis of projects to reduce GHG emissions with a focus on energy efficiency and renewable energy. It will include information on monitoring and reporting emission reductions using accepted methodologies, as well as the use of carbon markets as a tool for cost-effective mitigation. Students will use appropriate resources to identify and select mitigation projects, and to develop and present business cases for projects, and techniques to monitor and assess emissions reductions and how to trade those reductions in emission markets.

Greenhouse Gas Management Assurance and Information Systems Design

EMSE 6293: This course will cover the design and operation of data systems for the management of GHG emissions. It will include the verification of GHG emission reports in organizational settings and the assurance of GHG emissions assertions. Students will learn how to design, evaluate, set up, test and operate GHG information management systems and GHG assurance processes that are appropriate for specific applications and that conform to applicable standards.