Civil and environmental engineers are a critical component in supporting the global economy, securing the health and welfare of diverse communities, improving the quality of life, and maintaining and improving the environment. Open and learn how to become one.

WHO WE ARE

Consistently ranked as one of the top programs in the country, Georgia Tech’s School of Civil & Environmental Engineering is committed to providing a rigorous, comprehensive curriculum, hands-on instruction, service-based learning, and interdisciplinary research.

The School of Civil & Environmental Engineering has a teaching and research program that is at the interface of built, natural, and social systems, and is focused on six key integrated areas:

- **ENVIRONMENTAL ENGINEERING**
- **ENVIRONMENTAL FLUID MECHANICS AND WATER RESOURCES**
- **GEOSYSTEMS ENGINEERING**
- **STRUCTURAL ENGINEERING, MECHANICS, AND MATERIALS**
- **TRANSPORTATION SYSTEMS ENGINEERING**
- **CONSTRUCTION ENGINEERING**

WHAT WE DO

Civil and environmental engineering addresses grand challenges facing society on global and local scales through the design, construction and maintenance of the natural and built environment, including works such as bridges, roads, canals, dams and buildings. The work of professional civil and environmental engineers ranges from consulting to design work to owning their own businesses. Graduates are prepared to work with government agencies and non-governmental organizations; private consulting firms involved with aspects of planning, design, construction, or sustainability; and with the development of facilities, resources, and environmental controls for infrastructure development.

AREAS OF RESEARCH

Our faculty are leading experts in their respective fields, and our students receive an education which delivers foundational knowledge and exposure to emerging technologies. We work in critical areas to address pressing global challenges. Examples include:

**ENERGY** Bio-fuel transportation and supply chain solutions; Wind, wave and tidal energy; Solar power using hydrodynamics; Microbial fuel cells – using waste for electricity; Energy from waste and landfills; CO\textsubscript{2} storage; Nuclear waste disposal; Enhanced geothermal systems.

**SUSTAINABILITY** Atmospheric processes related to global warming; Microbial processes needed for waste decomposition; Productive reuse of by-product materials; Sustainable infrastructure systems; Sustainability and social interaction; Sustainable solutions for growth and development.

**ENVIRONMENT & HEALTH** Water quality and treatment; Wastewater reclamation and reuse; Health effects of air pollution; Bio-remediation of hazardous waste; Pollution control and modeling.

**INFRASTRUCTURE** Disaster-resilient infrastructure systems; Materials for next generation infrastructure; Sensing the built environment; Infrastructure policy; Infrastructure and energy; Deterioration and rehabilitation of infrastructure.

**TRANSPORTATION** Innovation/analysis of freight and passenger air travel; Context Sensitive Solution (CSS) to develop scenic, historic, safe and sustainable transportation systems; Benefits of transportation investment; Innovative materials and construction techniques; Highway performance during hazardous events; Policy and planning; Security, evacuation planning and modeling; Structures and bridges.

**WATER** Environmentally friendly hydropower; Flood and drought management; Sustainable desalination technologies; River restoration; Water systems security; Remote and conventional sensors in water resources management; Policy, legal, and institutional frameworks for shared water resources; Coastal engineering; Erosion control.
CEE administers three degree-granting programs: civil engineering, environmental engineering, and engineering science and mechanics. In all, the School awards seven degrees. The following is an overview of undergraduate and graduate programs:

### BACHELOR OF SCIENCE IN CIVIL ENGINEERING (BSCE) DEGREES

The BSCE degree enables graduates to enter professional practice as an engineer or to continue studying for an advanced degree in one of several specialized areas, including construction engineering, environmental engineering, environmental fluid mechanics, geotechnical engineering, hydrology, materials, structural and engineering mechanics, transportation engineering, and water resources planning and management. Students learn the collaboration and technical skills that are required of all engineers. Graduates are also well-poised to excel in the areas of planning and design, construction, research and development, operations, and maintenance.

### BACHELOR OF SCIENCE IN ENVIRONMENTAL ENGINEERING (BSENV) DEGREES

The BSEnvE degree provides students with the scientific disciplines and engineering principles used to address compelling global challenges such as sustainable air, water, and land resources, human health, and environmental restoration. Students pursue advanced engineering topics, including solid and fluid mechanics, thermodynamics, and laboratories in engineering materials, hydraulic engineering, and environmental monitoring and process engineering. Fourth-year electives and a senior capstone project allow students to focus on specific areas, including biological processes, sustainability, air pollution, and water resources, and to work with other disciplines.

### DOCTORAL DEGREES:

The Ph.D. program is offered to students with an excellent academic background and a capacity for independent research. Doctoral students pursue a highly individualized program of study (typically around 50 credit-hours of courses beyond the bachelor’s degree) to develop expertise in their major area of specialization. Candidates must also complete a minor field of study. To demonstrate the ability for independent research, the candidate must pass a qualifying examination, a thesis proposal, and a thesis defense. Candidates are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in their major area of specialization.

### MASTER’S DEGREES:

The designation of the CEE master’s degree depends on undergraduate training, field of study, and personal preference. Current degree options include civil engineering (MSCE); environmental engineering (MSEnvE); engineering science & mechanics (MSES); computational science & engineering (MSCSE); bioengineering (MSBIOE); transportation planning/transportation engineering (MCRP/MSCE); and science (MS). Master’s degrees are generally completed in a one to one-and-a-half year period if research is not included. **Non-thesis and thesis MS degree paths** are available, as well as a **BS/MS joint degree program** in which students may begin graduate courses in their fourth year of undergraduate study.

**People are our priority. The world is our laboratory.**

*Learn more at [www.ce.gatech.edu](http://www.ce.gatech.edu)*

@CEEatGT on

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I chose our School because of the potential I saw for working on engineering projects in the developing world. In my four years at Georgia Tech, I've gone on seven trips to five different countries, most of them for projects and research that I found through CEE. Working on international projects has taught me valuable lessons, rounded out my engineering education, and informed my decision on where to start my career. I now look forward to putting the skills I learned in CEEatGT to work as a water resource engineer.