

The School of Civil and Environmental Engineering at Georgia Institute of Technology offers graduate programs leading to the degrees of Master of Science in Civil Engineering, Master of Science in Engineering Science and Mechanics, Master of Science in Environmental Engineering, Master of Science (undesigned), and Doctor of Philosophy. The School awarded 85 Masters and 26 PhD degrees in 2005 and currently has 288 Graduate students.

The faculty members in CEE are leaders in their fields and provide exceptional range of opportunities for graduate study and research. The School has exceptional national and international reputations based on its academic and research programs and the accomplishments of its graduates. Current academic and research areas of interest are shown below:



Environmental Engineering

- Air pollution formation, control and dynamics from combustion by-product formation to atmospheric sciences and climate change with related health and policy implications
- Physicochemical processes in water reclamation and environmental aquatic chemistry
- Environmental biotechnology for contaminated waters, soils and sediments and for environmentally-friendly, green products and processes
- Microbial ecology and genomics
- Fate and transport of pollutants in multimedia environments
- Nanotechnology and innovative materials in natural and engineered systems



Environmental Fluid Mechanics and Water Resources

- Experimental and computational fluid mechanics and hydraulics
- Biology and ecology interactions with hydraulic and hydrologic systems
- Turbulent entrainment, transport, and mixing processes in natural and engineered environments
- Water quality modeling of surface and subsurface waters
- Terrestrial and atmospheric water and energy balances and fluxes
- Information and decision support systems for integrated water resources assessment, planning, and management



Geosystems

- Mechanics of particulate materials; physical, chemical, and biological phenomena in soils and rocks; interface behavior; fracture mechanics, computational mechanics of materials and engineered soils
- In situ testing, geotechnical site characterization, mechanical and electromagnetic wave propagation, and inverse problems, and engineering geology and geophysics
- Dynamic soil properties, strong motion site effects, seismic wave scattering, and liquefaction and tsunamigenic landslide hazards, soil structure interaction
- Waste containment, plasma vitrification, and remediation of contaminated soil and groundwater
- Foundation engineering, enhanced recovery of mining, petroleum, and methane hydrate resources, and extraterrestrial geomechanics



Structural Engineering, Mechanics and Materials

- High-performance and smart materials (polymer composites, advanced cement based materials and Shape Memory Alloys)
- Earthquake engineering and structural rehabilitation
- Computational mechanics and computer-aided engineering
- Structural reliability and risk analysis
- Solid mechanics in small scales, geometric mechanics, magnetoelastic and electroelastic interaction in solids



Transportation

- Planning including multimodal tools, safety and environmental factors, environmental justice, brownfields and transportation
- Operations/ITS including, driver behavior studies, simulation, kinematic waves and modeling, data warehousing, and signal system operations and optimization
- Air quality including motor vehicles emission modeling and monitoring, remote sensing and value pricing of auto insurance
- Infrastructure management and transit applications including portfolio theory applications and transit conformity modeling
- Design including highway, transit, bicycle and pedestrian facilities, context sensitive design in urban areas, work zone safety, and crash analysis

In addition, a number of centers and exciting multi-disciplinary programs and activities exist in the School. Research expenditures in 2005 were \$12 Million. Graduate assistantships and fellowships are available.