CIVIL AND ENVIRONMENTAL ENGINEERING

AUBURN
GINN ENGINEERING

From the roads and bridges we travel to the clean water, air and soil on which we depend, **civil and environmental engineers play a vital role in our everyday lives and in designing the cities of the future .** As part of the oldest and broadest of all engineering disciplines, civil and environmental engineers design and construct infrastructure to meet current and emerging needs, such as airports, buildings, bridges, dams, roads and water and sanitation systems. These professionals can be found in rural and urban areas working for large and small companies and local, state and federal governments. Auburn's Department of Civil and Environmental Engineering is known for its comprehensive and challenging curricula, strong and dedicated faculty, outstanding experiential and hands-on learning and for the achievements of its graduates.

NOTABLE

- 597 undergraduate and 150 graduate students enrolled in fall 2024
- 26 full time faculty members and 3 lecturers
- Edward Austin, '91, ALDOT Chief Engineer
- David Stejskal, '00, VP, Jacobs
- Kelly Roberts, '05, Managing Director, Walter P. Moore
- Angela Fanney, '04, VP & Regional Leader, Kimley-Horn
- Christopher Kramer, '94, Chief Strategy Officer, Brasfield & Gorrie

UNDERGRADUATE PROGRAMS

Bachelor of Civil Engineering — The following specializations are possible as part of the Bachelor of Civil Engineering degree program:

Construction Engineering — Construction engineers plan, oversee and manage the construction efforts associated with building new or rehabilitating existing buildings, bridges, roads and other facilities.

Environmental Engineering — Environmental engineers apply scientific and engineering principles to assess, manage and design sustainable environmental systems for the protection of human and ecological health.

Geotechnical Engineering — Geotechnical engineers design and analyze engineering systems made from or supported by earth materials. These include foundations, earth retaining structures, excavations, slopes, dams and landfills. Geotechnical engineers often work closely with other branches of civil engineering on a variety of projects, including solid waste management, groundwater protection, highway and pavement engineering and foundation design.

Pavements and Materials Engineering — Pavements and materials engineers design, build and maintain pavement infrastructure for highways, airports, parking lots and port facilities. This includes design and characterization of the constituent materials, pavement construction, integration and application of materials in engineered pavement structures and management of pavement infrastructure.

Site Engineering and Land Development — This specialization addresses site planning and land development for various settings: commercial, industrial, municipal, recreational and residential.

UNDERGRADUATE PROGRAMS *(cont.)*

Structural Engineering — Structural engineers design new structures—such as buildings, bridges and stadiums—to withstand loads and natural hazards, such as hurricanes, tornadoes and earthquakes. They also evaluate and improve the capabilities of existing structures. While architects are concerned with the arrangement and appearance of spaces, structural engineers are responsible for stability, strength and stiffness.

Transportation Engineering — Transportation engineers forecast, design, analyze and manage transportation systems to support the safe, efficient and environmentally-friendly movement of people and materials. They engage in general transportation network design and planning, facilities planning, site evaluation, transportation management systems, needs projections and analysis and cost analysis.

Water Resources Engineering — Water resources engineers design, evaluate, maintain and operate the water systems in natural and built environments. They conceive and design new water infrastructure for collecting, storing, moving, conserving and controlling surface water, pressurized water and groundwater. This includes water quality control, water cycle management, management of human and industrial water requirements, water delivery and flood control.

For information about academic programs and minors, visit **www.eng.auburn.edu/programs**

RESEARCH, LABS AND CENTERS

The Department of Civil and Environmental Engineering provides opportunities to perform cutting-edge research through:

- Advanced Structural Engineering Laboratory
- Alabama Technology Transfer Center
- Concrete Materials Laboratory
- Environmental Engineering Laboratories
- Geotechnical Engineering Laboratories
- Highway Research Center
- Hydraulic Engineering Laboratories
- National Center for Asphalt Technology (NCAT)
- Stormwater Research Facility

GRADUATE PROGRAMS

Graduate Certificates — The Department of Civil and Environmental Engineering offers graduate certificates to both degree and non-degree seeking students interested in continuing their education but may not be ready to commit to a master's degree program. Each certificate is four courses. Students may complete multiple certificates toward an M.C.E. or M.E. degree: Geotechnical Engineering, Pavement Analysis and Design, Pavement Materials, Structural Analysis, Structural Design, Water Environmental Modeling and Water Resources Engineering.

Master's Degrees — Several master's degree programs are available for students wishing to advance their education through additional coursework and option for research experience.

Master of Science (M.S.) — This program features 30 credit hours, including completion of a research thesis. M.S. students typically complete eight graduate-level courses. Candidates must pass an on-campus comprehensive oral examination covering course work and the thesis.

Master of Civil Engineering (M.C.E.) — This coursework-focused program features 30 credit hours of graduate-level coursework (typically 10 courses). This degree is a great option for distance students as well who will benefit from the top-ranked online program.

The Accelerated Bachelor's/Master's (ABM) Program in Civil Engineering allows highly motivated undergraduate students to earn both degrees in a five-year span.

Doctor of Philosophy (Ph.D.) — Ph.D programs with highly tailored focus in each civil and environmental engineering discipline area are available for highly motivated students interested in research-based advanced education. After completing graduate coursework, doctoral candidates complete and defend a highly independent research dissertation. A written and oral general doctoral examination is required prior to becoming a candidate for the degree.

Financial support may be available for outstanding students pursuing M.S. and Ph.D. degrees through fellowships and assistantships in teaching or research. Supported students are provided a competitive monthly stipend along with tuition reimbursement. Further information on graduate programs available at: **aub.ie/ceegrad**

SCHOLARSHIPS

The College of Engineering and the Department of Civil and Environmental Engineering provide scholarship opportunities to students at every stage of their academic career.

SCHOLARSHIPS *(cont.)*

To be eligible for scholarships at Auburn University, all students must apply through AUSOM. For information about engineering scholarships, visit **www.eng.auburn.edu/scholarships**

TEAMS & ORGANIZATIONS

Civil and Environmental engineering students are encouraged to participate in various campus and departmental organizations and their associated competition teams, including:

- American Society of Civil Engineers
- American Concrete Institute
- Chi Epsilon, the National Civil Engineering Honor Society.
- Engineers Without Borders
- Institute of Transportation Engineers
- Water and Environmental Student Association
- Auburn Geotechnical Society
- American Railway Engineering
- Maintenance-Of-Way Association

For more information, **www.eng.auburn.edu/organizations**

LIFE AFTER GRADUATION

Civil and environmental engineers conceive, plan, design, construct, operate and maintain facilities and systems that serve the basic needs of society. These include buildings, bridges, water tanks, transmission lines, pipelines, highways, railways, airports, harbors, water and wastewater systems, dams and power plants. They also help protect the environment by working to prevent air, land and water pollution. Because civil and environmental engineers are involved in every aspect of creating and maintaining our society's infrastructure, the job market for them is strong and stable.

Civil and environmental engineers work for industrial and manufacturing firms; structural, environmental, geotechnical and transportation consulting firms; architectural and engineering firms; construction companies; local governments; state and federal agencies; departments of transportation; and industries such as oil, aircraft, shipbuilding, electric utility, communication, chemical and paper. Our graduates are employed at highly reputable and successful companies and corporations, with many serving in top managerial and executive positions. These organizations include Brasfield & Gorrie; Hoar Construction; many state departments of transportation; LBYD; Jacobs; U.S. Army Corps of Engineers; Terracon; Hayward Baker Keller; Walter P. Moore; Kimley-Horn; BL Harbert; Southern Company and subsidiaries such as Alabama Power, Georgia Power and Gulf Power; the U.S. Nuclear Regulatory Commission; Wood; Building and Earth Sciences; TTL; many state departments of environmental management and many more.

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