In summary, we expect our graduates to be fully prepared for life-long enhancement through meaningful interactions with the profession. Additionally, the department provides opportunities for educational advances to facilitate the development of their problem-solving skills.

Environmental engineers are employed by consulting firms, public agencies, and start and operate their own businesses. Environmental engineers use a multidisciplinary approach to solve environmental challenges facing public and environmental health, such as water treatment, waste management, and climate change. Environmental engineers work to protect human health and welfare while minimizing the adverse effects of human activity on the environment. Environmental engineers are also employed by consulting firms, public agencies, and start and operate their own businesses.

Civil engineers plan, design, supervise the construction, operate, maintain, inspect, retrofit, and manage many of the facilities and systems in both public and private sectors that are essential to modern life. The civil engineering profession is one of the most stable and most diverse of the engineering disciplines. Civil engineers are employed by consulting firms, public agencies, and start and operate their own businesses. Workplaces range from construction sites to design offices. Most civil engineers work with some engineering or construction aspect of private and/or public facilities, such as airports, bridges, buildings, coastal structures, dams, environmental remediation of contaminated sites, harbors, highways, offshore structures, pipelines, railroads, transportation systems, tunnels, water collection systems, water distribution systems, water and wastewater treatment facilities, and waterways. Civil engineers are on the forefront of applying the newest technology innovations in engineering and construction.

Civil engineering projects are unique because they require individual planning, analysis, design, construction supervision, performance monitoring, management, and retrofitting. Civil engineering projects often require technical, governmental, legal, financial, and social evaluations. The primary objective is to provide the best service for the users while minimizing costs and other undesirable impacts.

Environmental engineers use a multidisciplinary approach to solve environmental challenges facing public and environmental health, such as water treatment, waste management, and climate change. Environmental engineers work to protect human health and welfare while minimizing the adverse effects of human activity on the environment. Environmental engineers are also employed by consulting firms, public agencies, and start and operate their own businesses.

What is Civil Engineering?

Civil engineers plan, design, supervise the construction, operate, maintain, inspect, retrofit, and manage many of the facilities and systems in both public and private sectors that are essential to modern life. The civil engineering profession is one of the most stable and most diverse of the engineering disciplines. Civil engineers are employed by consulting firms, public agencies, and start and operate their own businesses. Workplaces range from construction sites to design offices. Most civil engineers work with some engineering or construction aspect of private and/or public facilities, such as airports, bridges, buildings, coastal structures, dams, environmental remediation of contaminated sites, harbors, highways, offshore structures, pipelines, railroads, transportation systems, tunnels, water collection systems, water distribution systems, water and wastewater treatment facilities, and waterways. Civil engineers are on the forefront of applying the newest technology innovations in engineering and construction.

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What is Environmental Engineering?

Environmental engineers use a multidisciplinary approach to solve environmental challenges facing public and environmental health, such as water treatment, waste management, and climate change. Environmental engineers work to protect human health and welfare while minimizing the adverse effects of human activity on the environment. Environmental engineers are also employed by consulting firms, public agencies, and start and operate their own businesses.

Department Mission and Objectives

Mission Statement

The mission of the Zachry Department of Civil and Environmental Engineering (http://engineering.tamu.edu/civil/) at Texas A&M University is to prepare our graduates to become professional engineers and leaders in the engineering profession by providing our students with a solid education that will enable them to integrate fundamental scientific engineering principles and that will couple with the latest technological advances to facilitate the development of their problem-solving skills. Additionally, the department provides opportunities for educational enhancement through meaningful interactions with the profession. In summary, we expect our graduates to be fully prepared for life-long learning experiences that will strengthen their abilities to successfully and effectively solve the complex engineering problems facing society.

Objectives

The faculty of the Zachry Department of Civil and Environmental Engineering strives to ensure that our ever-evolving educational programs accomplish several objectives.

1. Our faculty must prepare the students to address the current and future civil and environmental engineering needs of the State of Texas, the nation and the world by being able to recognize the important geopolitical and public policy needs; and solve technical problems.
2. The Department provides a curriculum that integrates scientific and technical knowledge with an appreciation for social, economic, and political concerns.
3. The curriculum and programs provide opportunities for our students to:
   a. build leadership skills,
   b. learn professionalism and ethical responsibility, and
   c. develop an understanding of the need to engage in lifelong learning.
4. Our faculty promote the highest academic standards of excellence, quality, and ethics in both our undergraduate and graduate programs, and in doing so create both a culture of excellence and a community of scholars.
5. Through our programs, our faculty and graduates provide local, state, national, and international leadership to a profession that must solve the civil and environmental engineering problems facing an increasingly complex society.

BS in Civil Engineering

Program Educational Objectives

The program educational objectives for the undergraduate civil engineering program within the Zachry Department of Civil and Environmental Engineering at Texas A&M University are as follows.

Within a few years after graduation, Texas A&M University Civil Engineering graduates will:

- Actively engage in civil engineering practice or pursue graduate programs in civil engineering or related fields.
- Achieve a level of technical competency allowing them to become licensed professional engineers.
- Complement their education through advanced studies, professional development, and continuing education courses.

Accreditation

The undergraduate program in civil engineering within the Zachry Department of Civil and Environmental Engineering at Texas A&M is accredited by the Engineering Accreditation Commission of ABET, www.abet.org (http://www.abet.org/).

Areas of Specialization

Students pursuing a BS in Civil Engineering can follow a general track or specialize in one of seven areas. Eight tracks are available for undergraduate study within Civil Engineering as follows:

1. General Civil Engineering
2. Coastal and Ocean Engineering
3. Construction Engineering and Management
4. Environmental Engineering
5. Geotechnical Engineering
6. Structural Engineering
7. Transportation and Infrastructure Materials Engineering
8. Water Resources Engineering

Before commencing course work in the major, students must be admitted to the major or have the approval of the department.

### Graduate Degrees

Graduate programs in civil engineering are also available. These programs allow further specialization and offer more in-depth study to address more complex technical and management issues. Graduate degrees also offer additional employment opportunities.

### BS in Environmental Engineering

#### Program Educational Objectives

The program educational objectives for the undergraduate environmental engineering program within the Zachry Department of Civil and Environmental Engineering at Texas A&M University are as follows.

Within a few years after graduation, Texas A&M University Environmental Engineering graduates will:

- Actively engage in environmental engineering practice or pursue graduate programs in environmental engineering or related fields.
- Achieve a level of technical competency allowing them to become licensed professional engineers.
- Complement their education through advanced studies, professional development, and continuing education courses.

#### Program Highlights

Our environmental engineering curriculum is unique in that it:

1. Has a specific focus on the protection of public and environmental health by solving environmental challenges;
2. Showcases a broad range of coursework to pursue specific environmental interests in natural or engineered systems;
3. Is multidisciplinary in every approach, melding earth science, life science, chemistry, social science, and engineering;
4. Provides the tools to develop solutions to solve emerging and existing issues such as water treatment, climate change, and other environmental challenges.

Before commencing course work in the major, students must be admitted to the major or have the approval of the department.

### Graduate Degrees

Graduate programs in civil engineering with a focus on environmental engineering are also available. These programs allow further specialization and offer more in-depth study to address more complex technical and management issues. Graduate degrees also offer additional employment opportunities.

### Faculty

Appleton, Robert A, Professor of the Practice
Civil & Environmental Engineering
BS, Texas A&M University, 1984

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Sims, Kassandra, Assistant Lecturer
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Torres, Jacob, Senior Lecturer
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Zhang, Yunlong, Professor
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PHD, University of Illinois at Urbana-Champaign, 1989

• Bachelor of Science in Civil Engineering, Coastal Engineering Track (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-coastal-engineering-track/)
• Bachelor of Science in Civil Engineering, Construction Engineering and Management Track (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-construction-engineering-management-track/)
• Bachelor of Science in Civil Engineering, Environmental Engineering Track (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-environmental-engineering-track/)
• Bachelor of Science in Civil Engineering, General Civil Engineering Track (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-general-civil-engineering-track/)
• Bachelor of Science in Civil Engineering, Geotechnical Engineering Track (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-geotechnical-engineering-track/)
• Bachelor of Science in Civil Engineering, Structural Engineering Track (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-structural-engineering-track/)
• Bachelor of Science in Civil Engineering, Transportation and Infrastructure Materials Engineering Track (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-transportation-infrastructure-materials-engineering-track/)
• Bachelor of Science in Civil Engineering, Water Resources Engineering Track (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/bs-water-resources-engineering-track/)
• Bachelor of Science in Environmental Engineering (http://catalog.tamu.edu/undergraduate/engineering/civil-environmental/environmental-engineering-bs/)