

ZACHRY DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

Introduction

The Zachry Department of Civil and Environmental Engineering (<http://engineering.tamu.edu/civil/>) at Texas A&M University offers two undergraduate degree programs: *Bachelor of Science in Civil Engineering* and *Bachelor of Science in Environmental Engineering*.

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.

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.

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

Aubeny, Charles P, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 1992

Banks, Margaret K, University Distinguished Professor
Civil & Environmental Engineering
PHD, Duke University, 1989

Barroso, Luciana R, Associate Professor
Civil & Environmental Engineering
PHD, Stanford University, 1999

Birely, Anna C, Associate Professor
Civil & Environmental Engineering
PHD, University of Washington, 2012

Bracci, Joseph M, Professor
Civil & Environmental Engineering
PHD, University of Buffalo - The State University of New York, 1992

Briaud, Jean-Louis, University Distinguished Professor
Civil & Environmental Engineering
PHD, University of Ottawa, Canada, 1979

Brumbelow, James K, Associate Professor
Civil & Environmental Engineering
PHD, Georgia Institute of Technology, 2001

Bullard, Jeffrey, Professor
Civil & Environmental Engineering
PHD, University of California at Berkeley, 1993

Burris, Mark W, Professor
Civil & Environmental Engineering
PHD, University of South Florida, 2001

Cahill, Anthony T, Associate Professor
Civil & Environmental Engineering
PHD, Johns Hopkins University, 1998

Chang, Kuang-An, Professor
Civil & Environmental Engineering
PHD, Cornell University, 1999

Chellam, Shankararaman, Professor
Civil & Environmental Engineering
PHD, Rice University, 1995

Chen, Hamn C, Professor
Civil & Environmental Engineering
PHD, University of Iowa, 1982

Chu, Kung-Hui, Professor
Civil & Environmental Engineering
PHD, University of California at Berkeley, 1998

Damjanovic, Ivan, Professor
Civil & Environmental Engineering
PHD, The University of Texas at Austin, 2006

England, Peter S, Instructional Associate Professor
Civil & Environmental Engineering
PHD, Texas Tech University, 2011

Gao, Huilin, Associate Professor
Civil & Environmental Engineering
PHD, Princeton University, 2005

Gharaibeh, Nasir G, Professor
Civil & Environmental Engineering
PHD, University of Illinois, 1997

Grasley, Zachary C, Professor
Civil & Environmental Engineering
PHD, University of Illinois Urbana Champaign, 2006

Hueste, Marybeth D, Professor
Civil & Environmental Engineering
PHD, University of Michigan, 1997

Hurlebaus, Stefan, Professor
Civil & Environmental Engineering
PHD, University of Stuttgart, Germany, 2002

Hutchinson, Richard N, Instructional Assistant Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 2015

Kaihatu, James M, Professor
Civil & Environmental Engineering
PHD, University of Delaware, 1994

Keating, Peter B, Associate Professor
Civil & Environmental Engineering
PHD, Lehigh University, 1987

Kim, Yong-Rak, Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 2003

Koliou, Maria, Assistant Professor
Civil & Environmental Engineering
PHD, University of Buffalo - The State University of New York, 2014

Little, Dallas N, University Distinguished Professor and Regents Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 1979

London, Mara R, Instructional Professor
Civil & Environmental Engineering
PHD, The University of Texas at Austin, 2009

Lord, Dominique, Professor
Civil & Environmental Engineering
PHD, University of Toronto, 2000

Lowery Jr, Lee L, Senior Professor
Civil & Environmental Engineering
PHD, Texas A&M University, 1967

Lyle, Stacey, Associate Professor Of The Practice
Civil & Environmental Engineering
PHD, University of Georgia, 2003

Ma, Xingmao, Associate Professor
Civil & Environmental Engineering
PHD, Missouri University of Science and Technology, 2004

Mander, John B, Professor
Civil & Environmental Engineering
PHD, University of Canterbury, 1984

Martin, Amy E, Professor
Civil & Environmental Engineering
PHD, University of California at Berkeley, 1997

McKay, Garrett, Assistant Professor
Civil & Environmental Engineering
PHD, University of Colorado Boulder, 2017

Medina Cetina, Zenon, Associate Professor
Civil & Environmental Engineering
PHD, John Hopkins University, 2007

Mercier, Richard S, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 1985

Mostafavidarani, Ali, Associate Professor
Civil & Environmental Engineering
PHD, Purdue University, 2013

Niedzwecki, John M, Professor
Civil & Environmental Engineering
PHD, The Catholic University of America, 1977

Noshadravan, Arash, Assistant Professor
Civil & Environmental Engineering
PHD, University of Southern California, 2011

Olivera, Francisco, Associate Professor
Civil & Environmental Engineering
PHD, The University of Texas at Austin, 1996

Paal, Stephanie G, Associate Professor
Civil & Environmental Engineering
PHD, Georgia Institute of Technology, 2013

Puppala, Anand, Professor
Civil & Environmental Engineering
PHD, Louisiana State University, 1993

Quadrifoglio, Luca, Associate Professor
Civil & Environmental Engineering
PHD, University of Southern California, 2005

Rogers Jr, Alton G, Associate Professor of the Practice
Civil & Environmental Engineering
BS, Texas A&M University, 1976

Sanchez Castilla, Marcelo Javier, Professor
Civil & Environmental Engineering
PHD, Universidad Politecnica de Catalunya (UPC), Barcelona, Spain, 2004

Scarfuto, Jessica C, Lecturer
Civil & Environmental Engineering
MS, Texas A&M University, 2014

Sideris, Petros, Assistant Professor
Civil & Environmental Engineering
PHD, University of Buffalo - The State University of New York, 2012

Sims, Kassandra, Assistant Lecturer
Civil & Environmental Engineering
MS, University of North Texas, 2012

Skillen, Kinsey, Assistant Professor
Civil & Environmental Engineering
PHD, Purdue University, 2020

Socolofsky, Scott A, Professor
Civil & Environmental Engineering
PHD, Massachusetts Inst of Technology, 2001

Torres, Jacob, Senior Lecturer
Civil & Environmental Engineering
PHD, Rice University, 2016

Walewski, John A, Associate Professor of the Practice
Civil & Environmental Engineering
PHD, The University of Texas at Austin, 2005

Wang, Xiubin B, Professor
Civil & Environmental Engineering
PHD, University of California at Irvine, 2001

Wolf, Charles M, Professor of the Practice
Civil & Environmental Engineering
PHD, Texas A&M University, 2001

Wurbs, Ralph A, Senior Professor
Civil & Environmental Engineering
PHD, Colorado State University, 1978

Ying, Qi, Associate Professor
Civil & Environmental Engineering
PHD, University of California at Davis, 2004

Zhang, Yunlong, Professor
Civil & Environmental Engineering
PHD, Virginia Tech, 1996

Zollinger, Dan, Professor
Civil & Environmental Engineering
PHD, University of Illinois at Urbana-Champaign, 1989

- 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/>)

Majors

- 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/>)