

Department of Civil, Environmental, and Construction Engineering

The Department ▼

Established as the Department of Civil Engineering when the university opened in 1925, the department prepares students for careers in construction engineering, environmental engineering, geotechnical engineering, structural engineering, transportation engineering, water resources engineering, and wind engineering.

Students have developed a **reputation of preparedness**, a strong work ethic, and a willingness to advance their knowledge and experience to **meet society's challenges in a sustainable and efficient manner**.

Faculty members have risen to **international prominence** in wind engineering, water resources engineering, and glazing designs for wind and blast loads, and strong programs exist through **collaborations** within the department, the college, and across the university in transportation research, structures research, environmental engineering, geotechnical engineering, and **design and modeling** in a wide range of the department's sub-disciplines.

With a changing world, the department is preparing students for **emerging technological advances**, including **Building Information Modeling**, and working – through the confluence of the department's collective areas – to maintain **sustainability of resources** in all aspects of projects.

By the Numbers ▼

Enrollments (Fall 2014):

Undergraduate.....	306
Estimated Qualifying Foundational Students.....	165
Master's.....	47
Doctoral.....	37

Faculty Members:..... 30

Endowed Chairs, Professors, and Fellows:..... 3

Research ▼

Complementing classroom instruction in key civil, environmental, and construction engineering concepts and techniques, Texas Tech faculty members conduct research in the department's **research centers and institutes**:

- ▶ **Center for Multidisciplinary Research in Transportation (TechMRT)**: TechMRT is committed to all facets of transportation research, including pavement engineering and construction, geotechnical engineering, transportation hydraulics, structural engineering, traffic engineering, environmental engineering, data integration and sustainability.
- ▶ **Murdough Center for Engineering Professionalism and National Institute for Engineering Ethics (NIEE)**: This center promotes engineering ethics, relating its findings to students and professional engineers across the country.
- ▶ **Water Resources Center (WRC)**: The WRC focuses on improving water quality, water availability, and water resources management.

Areas of Study ▼

- ▶ Bachelor of Science in Civil Engineering
- ▶ Bachelor of Science in Construction Engineering
- ▶ Bachelor of Science in Environmental Engineering
- ▶ Dual Degree: Bachelor of Science in Architecture and Bachelor of Science in Civil Engineering
- ▶ Graduate Certificate in Construction Engineering and Management
- ▶ Master of Science in Civil Engineering
- ▶ Master of Environmental Engineering
- ▶ Doctor of Philosophy in Civil Engineering

Contacts ▼

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Department of Civil, Environmental, and Construction Engineering

Faculty Research Specializations ▼

Dr. Audra N. Morse, P.E.

Professor

Water and Wastewater Treatment, Water reclamation systems and Fate of personal products in treatment systems

Dr. Stephen M. Morse

Assistant Professor

Window Glass Str. Design, Wind loads on Struct., Finite Element Mod. of Brittle Mat., Large Scale Data Processing and Data Mining

Dr. Ali Nejati

Assistant Professor

Mod. Dyn. of Post-disaster Recovery, Agent-based Mod., System Dyn., Infrastruct. Manag., Building Information Mod., Transp. Const. Manag.

Dr. H. Scott Norville, P.E., F.A.S.T.M.

Professor

Str. & Behav. of Window Glass under Extreme Loading, Blast Resist. Glazing Design, Str. of Heat Treated Glass, Behav. of Triple Glazed Insul. Glass Units, Str. & Behav. of Laminated Glass with High Perf. Interlayers, Dev. of Stds. for Test/Des. Window Glass

Dr. Ken A. Rainwater, P.E., D.W.R.E.

Professor

Water Resources Manag., Groundwater Flow and Contaminant Transport, Groundwater Rights, Remediation of Contaminated Soil, Groundwater and Watershed Manag.

Dr. Danny Reible, P.E., N.A.E.

Donovan Maddox Distinguished Engr. Chair and Professor

Contaminant fate and behav. in the environment, Mod. env. processes, Assessment and manag. of contaminated sediments, Treatment and recycling of produced and flowback waters, Sust. manag. of water resources

Dr. Sanjaya Senadheera

Associate Professor and Interim Director, TechMRT

Pavement Engr., Pavement Preservation, Asphalt-aggregate interaction, Infrastructure Systems, Mat. education, Sust. Design, Engr. Education

Dr. Hoyoung Seo, P.E.

Assistant Professor

Fnd. engr., Analytical and numerical mthds. in geomechanics, Geotechnical instrumentation and monitoring, Dev. of in situ-test- and reliability-based design mthds., Rock mechanics and rock engr., Water jet Appl. in const. engr.

Dr. Douglas A. Smith, P.E., F.S.E.I., F.A.S.C.E.

Associate Professor

Bluff body aerodyn., Struct. response to wind induced loading, Atmospheric boundary layer flows, Hurricane wind and surge damage prediction, Papercrete material usage and properties

Dr. Lianfa Song

Professor

Membrane Processes in Water Desalination and Reclamation, Characterization and Mitigation of Membrane Fouling, System Mod. and Optimization of Full-scale reverse osmosis (RO) processes, Membrane Bioreactor (MBR) for wastewater treatment

Dr. Annette Hernandez Uddameri, P.E.

Associate Professor

Sust. watershed manag. through the dev. of scientifically rigorous consensus-driven decision making tools: Role of uncertainty in Climate change & Various model conceptualizations, Tech. Transfer across intl. bounds., Mun. - Ag water resource interactions.

Dr. Venkatesh Uddameri, P.E.

Professor and Director, Water Resources Center

Groundwater Mod., Sust. Water Resources Manag., Conjunctive Surface Water-Groundwater Interactions, Water-Energy Nexus, Decision Support Systems for Water Resources Planning, Climate Change

Dr. Moon Won, P.E.

Professor

Concr. Pavement Design & Perf. Evaluation, Concr. Mat. Characterization, Forensic Investigations of Concr. Pavement Failures, Preservation and Rehabilitation of Rigid Pavement, Pavement Deterioration Mechanisms

Dr. Weile Yan

Assistant Professor

Env. Appl. and implications of nanomat., Surface-mediated reactions and interactions in env. systems, Iron-based nanoparticles for groundwater and hazardous waste remediation

Dr. Delong Zuo

Associate Professor

Struct. Dyn., Wind loading of Structures

Dr. Sang-Wook Bae

Assistant Professor

Fiber reinforced polymer comp. mat. in concr. struct., Perf. improv. of reinforced and prestressed concr. struct., Progr. collapse mitigation of concr. struct. under ext. abnormal loads, Adv. repair and str. mthds. for corrosion-damaged concr. struct.

Dr. Xinzhong Chen

Associate Professor

Bridge/Building Aerodyn., Wind Engr., Fatigue & Extreme Loads & Resp. of Large Wind Turbines, Aeroelastic Instability of On/Offshore Wind Turb., Cable-Suppt. Bridges & Tall Blds., Struct. Dyn. & Rand. Vibr., Struct. Reliability & Perform.-Bsd. Design, Codes & Stds.

Dr. Theodore Cleveland, P.E.

Associate Professor

Hydrologic, Hydraulic, and Contaminant Transport Mod. Water Resource Systems Optimization, Contaminant Transport Mod. Water Resource Systems Optimization, Instrumentation

Dr. Mukaddes Darwish

Associate Professor

Const. Safety and Health, Risk Manag., Engr. Education Dev. Techniques, Increasing Achievements of Under-Represented Groups in Science Tech., Engr., and Math., Green Building Mat. and Techniques, Sust. Dev. and Const.

David Ernst

Associate Professor and Interim Department Chair

Engineering education

Bobby Green, P.E.

Associate Professor

Circuit Theory, Electric Power and Red Imported Fire Ants, Electric pulsed power and pulsed power modulators, Roadway lighting, Locating buried pipelines, Biomedical Instrumentation, Highly Compact Building Forms

Dr. Tewodros Ghebrab, P.E.

Assistant Professor and Graduate Advisor (Construction Engineering)

Perf. of cement bsd. mat. under adverse env., Effect of mineral/chemical admixtures on the struct.-property relat. of cement bsd. mat., Mod. of mech. and physical properties of cementitious mat. cont. nano-size mineral admixtures

Dr. W. Andrew Jackson, P.E.

Professor, Associate Chair, and Graduate Advisor (Environmental)

Occurrence, Impact and Fate of Perchlorate, Biological wastewater pre-treatment for wastewater recycling, Fate of micro-contaminates in the environment, Crude oil fate in wetlands and marshes, Use and dev. of passive samplers for contaminant fate studies

Dr. Priyantha W. Jayawickrama

Associate Professor and Graduate Advisor (Civil)

Soil/Struct. Inter., Unsat. Soil Behav., Design and Const. of Earth Retaining Struct., Load Response Behav. of Culvert Systems, Design of Bridge Found., Design of Bridge Approach Systems, Improved Quality Control Protocols for Pavement Mat.

Dr. William D. Lawson, P.E.

Associate Professor

Expansive/unsaturated soil behav., Soil/struct. inter., Mech. ly stabilized earth retaining walls, Comp. earth blocks, Pavement edge drop-offs, Pavement maint. mthds., Methodology for conducting forensic studies of residential Fnd. failures

Dr. Sang Lee

Assistant Professor

Appl. of emerging tech. for more efficient infrastruct. manag., Sust. const. mthds. and mat. in buildings and infrastruct. systems, Engr. cost analysis of const. proj., Dev. of risk manag. plan, Bidding strategy and bid-markup decision

Dr. Daan Liang, P.E.

Associate Professor and Interim Director, National Wind Institute

Remote-Sensing Imagery, Post Storm Damage Assessment and Recovery, Wind Effects on Buildings and Struct., Wind Storm Damage Assessment Techniques, Agent-based. Recovery Mod.

Dr. Hongchao Liu, P.E.

Professor

Traffic operation & control, Dev. & assessing operational & control strategies for optimal control of highway facilities, Intelligent transp. systems, Application of AVL & other advanced tech. to bus transit systems & Fundamental traffic flow theory, Car-following models

Dr. Kishor C. Mehta, P.E., N.A.E.

Horn Professor

Wind loads, damage analysis, Design for tornadoes and hurricanes, Interdisciplinary research and studies, Wind engr.

Dr. Kayleigh Millerick, P.E.

Assistant Professor

Redox transformation of aquatic organic micropollutants; Treatment of contaminants adsorbed to activated carbon; Microbiology and microbially-mediated transformations; bioremediation

Open Faculty Positions 1

Environmental/Water