05/25

ISSUE 2

TAMUK ENGINEERING

Welcome to the Frank H. Dotterweich College of Engineering

Texas A&M University–Kingsville

AN OVERVIEW OF OUR COLLEGE AND COMMUNITY

Brought to you by:
Engineering Communications

CONTENT UPDATED AS OF:

MAY 2025

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INTRODUCTION TO THE COLLEGE

The Frank H. Dotterweich College of Engineering has a long-standing tradition of excellence, proudly established in 1936. We are deeply committed to student success, with more than 70% of our students being first-generation college students — the first in their families to pursue a college education.

Our college is home to 6 engineering departments, offering 11 bachelor's programs, 10 master's programs, and 2 doctoral programs, providing a comprehensive range of opportunities for students to grow, lead, and innovate in the field of engineering.

Top Faculty With Extraordinary Qualifications

We are proud to have faculty from across the nation and around the globe, bringing a wealth of experience and expertise from varied backgrounds — all available to serve and support our students right here in Kingsville, Texas.

ENGINEERING DEPARTMENTS

Our six engineering departments house our undergraduate programs and are led by dedicated faculty and staff who are committed to your success. Each department offers its own unique strengths, providing the guidance, expertise, and support students need to grow, thrive, and lead in their chosen field of engineering.

Wayne H. King Department of Chemical and Natural Gas Engineering (CHNG)

Department of Civil and Architectural Engineering (CAEN)

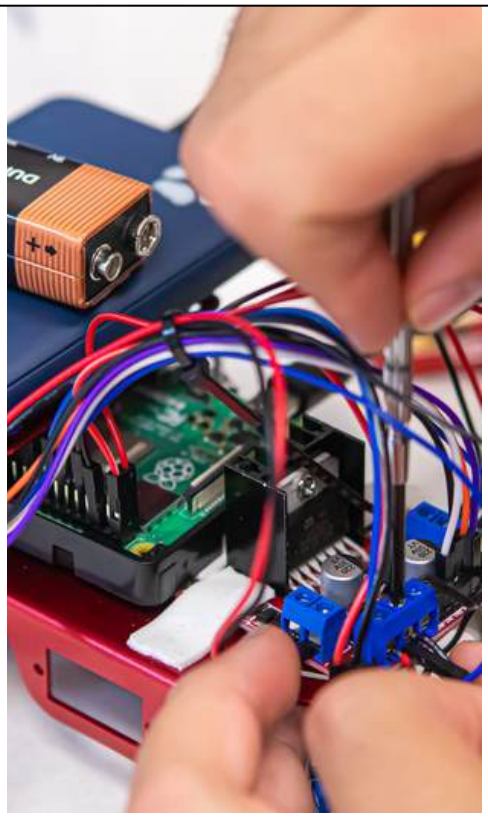
Department of Electrical Engineering and Computer Science (EECS)

Department of Environmental Engineering (EVEN)

Department of Industrial Management and Technology (INDT)

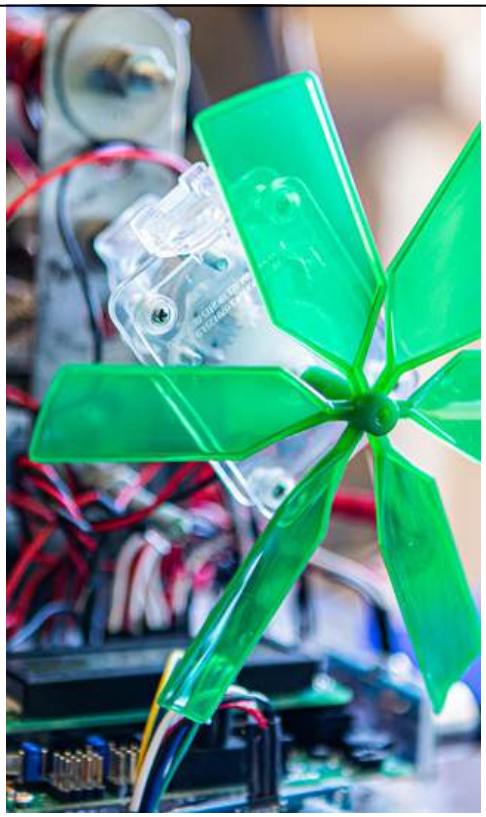
Department of Mechanical and Industrial Engineering (MIEN)

TAMUK ENGINEERING BACHELOR OF SCIENCE DEGREES:



- Architectural Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Computer Science
- Electrical Engineering
- Environmental Engineering
- Industrial Engineering
- Industrial Management & Applied Engineering
- Mechanical Engineering
- Natural Gas Engineering

TAMUK ENGINEERING MINORS



- Aerospace Engineering
- Nuclear Engineering
- Security Engineering
- Supply Chain Standards
- Computer Science
- Cyber Intelligence
- Environmental Engineering
- Natural Gas Midstream Engineering
- Biochemical Engineering
- Construction Management

JAVELINA ENGINEERING STUDENT SUCCESS CENTER (JESSC)

Our goal is to ensure students are set up for success by educating them about the resources available to help them navigate their academic journey and achieve new heights.

We strive to ensure our students are informed, involved, and inspired about all things engineering.

The College of Engineering takes pride in serving the student population, the surrounding community, and other industry partners and stakeholders.

It is our intent to adapt and evolve to keep up with the world so our students can know they have access to a one-stop shop designed to provide a more conducive environment for their success in the ever-changing landscape of engineering.

For more information, contact the JESSC Director:
Mr. Austin McCoy
361-593-2799
austin.mccoy@tamuk.edu

JESSC Services

Explore some how our center strives to support our students.

- Schedule tutoring.
- Speak to an Academic Advisor.
- Explore internship opportunities.
- Scholarship information.
- Learn about study-abroad opportunities.
- Dive into research opportunities.
- Navigate your career path.
- Event announcements.
- Important graduation deadlines.
- Professional development opportunities.

Plus, we help new and future engineering students connect with essential university resources like Student Engagement & Campus Life, the Disability Resources Center, Career Engagement, and TAMUK Student Counseling Services.

ENGINEERING ADVISORS

Maria Lopez, Academic Advisor, TEAM LEAD
Phone: 361-593-3920
Email: maria.lopez@tamuk.edu
Location: Engineering Complex 114G

- 30+ Credit hours in chemical, natural gas, environmental, and industrial management.

Tony Ramirez, Academic Advisor
Phone: 361-593-3308
Email: juan.ramirez@tamuk.edu
Location: Engineering 114H

- 30+ Credit hours in mechanical, industrial engineering, and electrical engineering.

Svetlana Singer, Academic Advisor
Phone: 361-593-3360
Email: svetlana.singer@tamuk.edu
Location: Engineering 114F

- 30+ Credit hours in architectural, civil, computer engineering, and computer science.

Klarissa Krueger, Academic Advisor
Phone: 361-593-2554
Email: klarissa.krueger@tamuk.edu
Location: Library 210

- 0-29 Credit hours in architectural, civil, chemical, computer engineering, computer science, electrical engineering, environmental, industrial engineering, industrial management, and natural gas engineering.

Gina Merzbacher, Academic Advisor
Phone: 361-593-2789
Email: gina.merzbacher@tamuk.edu
Location: Library 210

- 0-29 Credit hours in mechanical engineering.

MATH PLACEMENT USING ALEKS

Mr. Mark Cortez
Mark.Cortez@tamuk.edu
361-593-3607 or 361-593-4852

- Strongly encouraged for all Engineering Students
- Cost of ALEKS Software: $30
- Administered by the Math Department
- Schedule to take the Math placement on campus by contacting Mr. Cortez

Exemptions from ALEKS

You will be exempt from taking ALEKS if you have appropriate scores in:

- AP Math
- At least C grade in Dual Enrollment Math course
- CLEP Math Exam
- IB Math Exam
- Math ACT or Math SAT

You will be exempt from taking ALEKS if you have Math ACT or Math SAT scores, that can be used for Math Placement

Math Course Placement based on Math SAT/ACT Scores		
Calculus I	SAT ≥ 620	ACT ≥ 28
Analytic Geometry	SAT (580-610)	ACT (25-27)
Trigonometry	SAT (560-570)	ACT (22-24)
College Algebra	SAT (530-550)	ACT (19-21)

ALEKS Score	Math Course Placement
75-100%	MATH 2413 Calculus I
69-74%	MATH 1348 Analytic Geometry
61-68%	MATH 1316 Trigonometry
46-60%	MATH 1314 College Algebra

MORE ABOUT THE ALEKS PLACEMENT

All incoming Engineering students who do not already place in Calculus I (by completion of MATH 1348 or its equivalent, SAT math score 620 or more, or ACT math score 28 or more) are required to prepare for and take a proctored ALEKS Placement assessment prior to the semester. For questions about this *requirement*, please contact your academic advisor. ALEKS Placement is a process to help you prepare for success in math classes on your degree plan. A single test does not determine your success... the work you put in does. We are here to support and guide you the whole way. Use the QR code to visit our website and learn more about ALEKS Placement. After you read all about the ALEKS Placement, if you still have questions, reach out to Mr. Christopher Trombley, ALEKS Coordinator, at 361-593-2362.

- Cost for ALEKS access code: $30 for up to 5 total attempts.
- **Only proctored assessments will count for placement.**
  - It is the student's responsibility to arrange proctoring
  - The Dept. of Mathematics offers in person proctoring in the JavALab, Rhode Hall 308
  - ProctorU offers remote proctoring for attempts 2 – 5 for $32.50 per session
- There is a 48 hour 'cooling off' period between attempts
- You must work actively in ALEKS for 8 hours between attempts
- Every attempt counts as one of the maximum of five attempts
- **Assessment attempt one (not available with ProctorU)**
  - Sets up your individual preparation and learning module
  - Take on your own without proctoring (recommended)
    - The score will not count for placement
    - Requires Lockdown Browser for ALEKS
    - For technical help contact the JavALab at 361-593-4852
- **Assessment attempt one – five can be taken proctored** in the JavALab, RH 308, by Mr. Cortez
  - ***Before scheduling, make sure you have purchased and received your ALEKS code***
    - Sign up for group testing date on our website under the second tab
    - Email Mr. Cortez at mark.cortez@tamuk.edu to schedule an individual appointment
- **Assessment attempt two – five can be taken proctored** remotely by ProctorU for $32.50 per session
- **GETTING STARTED**
  - Purchase an ALEKS Access Code
  - After receiving the email response with your access code and PPL course code, download dthe PPL Registration Instructions and follow the instructions to register
  - Once registered with ALEKS PPL, you may access the Overview Summary of ALEKS PPL to get more information about how the program works
  - Take the first ALEKS assessment attempt and then work in ALEKS to prepare to retest
  - Schedule and take your proctored ALEKS assessment(s)
    - Take a valid photo ID (university ID, drivers license, military ID, passport)
    - Remote proctoring available for two attempts two – five through ProctorU for $32.50 per session
    - No-cost in per proctoring for all attempts in the JavALab, Rhode 308, with Mr. Cortez
      - Email Mr. Cortez to schedule an individual appointment
      - Sign up for a group testing date on our website under the second tab

If you or anyone supporting you has any questions after reading the information provided, please contact your academic advisor, or Mr. Christopher Trombley at Christopher.trombley@tamuk.edu or by phone.

What if you change your major?

Freshman curricula are similar across disciplines. Key courses to focus:

- **Calculus I and II**
- **Chemistry I**
- **Physics I and II**
- **English**
- **General Education**

Companies that hire Javelina Engineers:

- Flint Hills Resources
- Citgo
- DOW Chemicals
- Dupont
- Zachry Bay Ltd.
- Bay Ltd.
- Lockheed Martin
- Intel
- Jacobs
- Schlumberger
- Texas Instruments
- Henderson Engineers
- American Electric Power
- Dell
- ExxonMobil
- Among many others!

Student Organizations

- American Academy of Environmental Engineers and Scientists (AAEES)
- American Association of Drilling Engineering (AADE)
- Association for Computing Machinery (ACM)
- Architectural Engineering Institute (AEI)
- Association of General Contractors (AGC)
- American Institute of Chemical Engineers (AIChE)
- American Society of Civil Engineers (ASCE)
- American Society of Mechanical Engineers (ASME)
- Air & Waste Management Association (AWMA)
- National Civil Engineering Honors Society (Chi Epsilon)
- Engineering Student Council (ESC)
- Eta Kappa Nu - Electrical & Computer Engineering Honor Society (HKN)
- Institute of Electrical and Electronics Engineering (IEEE)
- National Society of Black Engineers (NSBE)
- Omega Chi Epsilon - National Honor Society for Chemical Engineering (OXE)
- Robotics Club
- Society of Automotive Engineers (SAE)
- Mexican-American Engineers and Scientists (MAES)
- Society of Hispanic Professional Engineers (SHPE)
- Society of Petroleum Engineers (SPE)
- Society of Women Engineers (SWE)
- Water Environment Association of Texas and Texas American Water Works Association (WEAT/TAWWA)
- Tau Beta Pi - The Engineering Honor Society (TBP)
- Texas Society of Professional Engineers (TSPE)
- TAMUK Energy Club

GEEN 1201 FRESHMAN ENGINEERING COURSE

- Student Success Strategies
- Class Visit by Department Chairs/Faculty
- Class Visit by Student Organizations
- Class Visit by Tutors
- Class Visit by Advisors
- Intro to Different Engineering Majors
- Undertake Freshman Design Project
- Work in Teams
- Make Presentations
- Freshman Design Expo

FRESHMAN DESIGN EXPO

The Freshman Design Expo is a signature event of the Frank H. Dotterweich College of Engineering, dedicated to celebrating engineers' impact and engaging the next generation of innovators.

This event honors engineers' contributions, raises awareness of their impact on society, and inspires future engineers through interactive presentations and engaging activities.

31 SCHOOLS PARTICIPATED.
69 CHAPERONES ATTENDED.
764 STUDENTS ATTENDED.
833 TOTAL VISITING ATTENDEES.

*Figures from the November 2024 Freshman Design Expo.

SENIOR DESIGN CONFERENCE

The Senior Design Conference showcases student capstone projects in Architectural, Chemical, Civil, Electrical, Environmental, Mechanical, and Natural Gas Engineering. It also includes projects in Computer Science.

Six parallel sessions will be held. Each session will have a moderator and a staff member to ensure the presentations are on schedule. Judges will be made up of faculty and industry partners to evaluate the senior design projects' oral presentations and technical merits using a standard rubric. The scores assigned by judges will be used to select the best projects for cash awards for the top three winners of the Senior Design Conference.

Projects at a glance:

CH1 - Vinyl Chloride Production
ME1 - Design and Analysis of a SCARA Robotic Mechanism
EE1 - Smart Garage Control & Monitoring System
CE1 - Porky's Arcade AE1 - Design of TAMUK New Growth Center
CS1 - The Pet Place
MD2 - Transmission Pipeline and LNG Plant Design
ME5 - Design of a Hydraulic Arm for Industrial Applications
MD1 - TAMUK Smart Parking Lot System - IoT: Internet of Things Approach
EV1 - Sustainable Coastal Flood Prevention Solutions for Rockport, Texas
AE5 - Design of Buc-ee's Gas
Among many others!

This event brings together:

ALUMNI
INDUSTRY PARTNERS
FACULTY AND STAFF
ENGINEERING STUDENT BODY

*Projects from the May 2025 Senior Design Conference.

Outstanding Alumni

ExxonMobil
President, William “Bill” Stevens

American Electric Power
Vice-Chairman and CEO, Thomas Shockley

Valero
Founder and Sr. Vice-President, Wayne King

Pape-Dawson Engineers, Inc.
President, Gene Dawson, Jr.

Mitchell Gas Services L.P.
President, Allen J. Tarbutton, Jr.

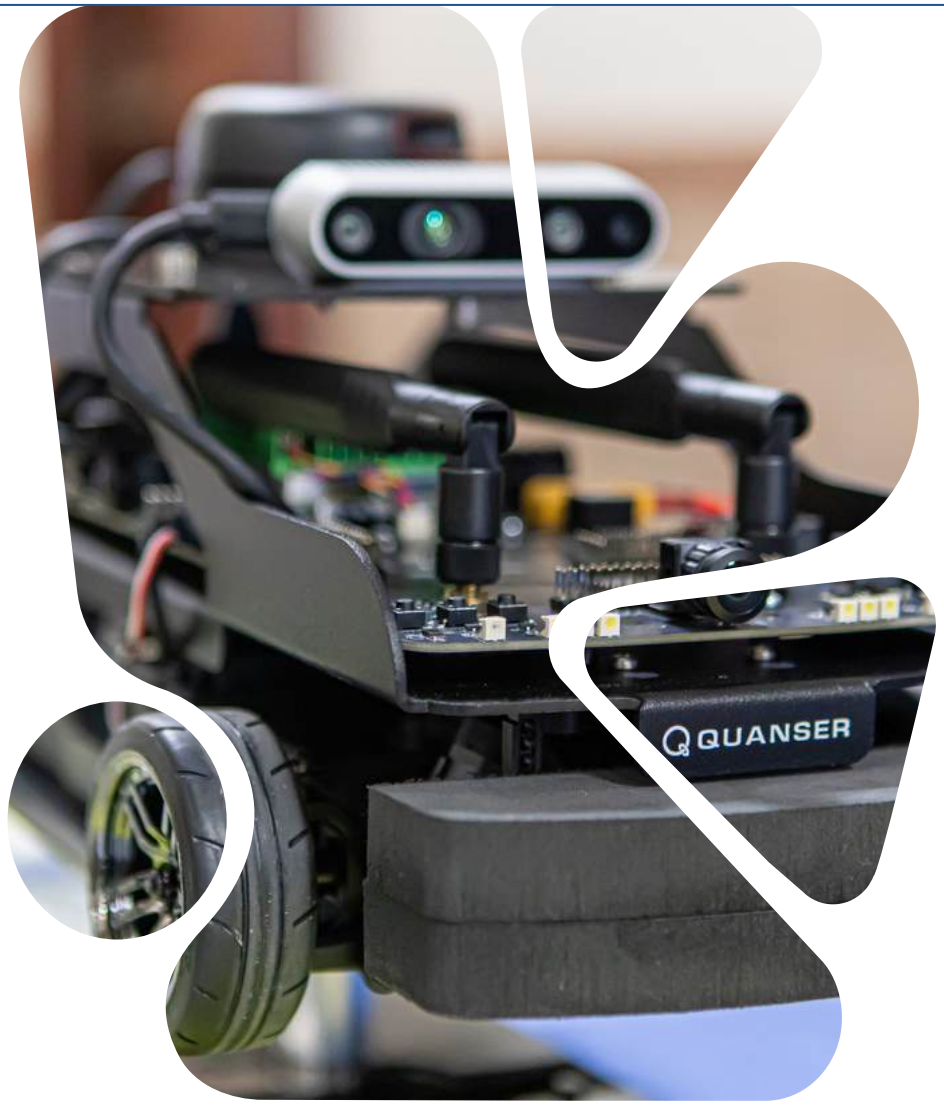
Texline Gas Company
President, Steven G. Herbst

Mitchell Energy and Development Corp.
President, Bruce Withers

Among many others!

GRADUATE COLLEGE

Upon earning your bachelor's degree, one option to consider is continuing your education with a graduate degree. Many of our students go on to pursue master's programs at universities across the globe, while others choose to stay and capitalize on the Fast Track Program — an excellent opportunity to begin earning graduate-level credit during your undergraduate journey, which can be applied toward a TAMUK Engineering graduate degree.



Master of Science Degrees:

- Chemical Engineering (M.S.)
- Civil Engineering (M.S.)
- Computer Science (M.S.)
- Electrical Engineering (M.S.)
- Environmental Engineering (M.S.)
- Industrial Engineering (M.S.)
- Industrial Management (M.S.)
- Mechanical Engineering (M.S.)
- Mechatronics Engineering (M.S.)
- Natural Gas Engineering (M.S.)

Ph.D. Programs

- Environmental Engineering (Ph.D.)
- Engineering (Ph.D.)
  - Chemical Engineering
  - Civil Engineering
  - Electrical Engineering
  - Mechanical Engineering
  - Sustainable Energy Engineering

STEP INTO YOUR FUTURE AS A JAVELINA ENGINEER

We Want to Hear from You!

Are you—or someone you know—interested in taking the next steps toward pursuing an engineering degree at Texas A&M University-Kingsville?

We'd love to connect with you!

Please take a moment to complete the contact form, and a member of our team will reach out to you soon.

SCAN HERE

Mr. Jesus A. Reina
Director, Outreach
and External Relations
361-593-4971
jesus.reina@tamuk.edu

Heidi A. Taboada, Ph.D.
Dean
Frank H. Dotterweich College of Engineering
Heidi.Taboada@tamuk.edu

TAMUK ENGINEERING

ENGINEERING DEPARTMENT CONTACTS

Wayne H. King Department of Chemical and Natural Gas Engineering (CHNG):

Department Chair: Dr. M.R. Riazi
Email: m.r.riazi@tamuk.edu

Admin: Elizabeth J True-Hill
Temporary Phone: 361-593-2003
Email: elizabeth.true-hill@tamuk.edu

Department of Civil and Architectural Engineering (CAEN):

Department Chair: Dr. Breanna Bailey
Email: breanna.bailey@tamuk.edu

Admin: Chriselda G. Reyes
Phone: 361-593-2266
Email: chriselda.reyes@tamuk.edu

Department of Electrical Engineering and Computer Science (EECS):

Department Chair: Dr. Dunren "Daren" Che
Email: dunren.che@tamuk.edu

Admin: Theresa Walker
Phone: 361-593-3903
Email: theresa.walker@tamuk.edu

Admin: Ida Enz
Phone: 361-593-4507
Email: ida.enz@tamuk.edu

Department of Environmental Engineering (EVEN):

Department Chair: Dr. David Ramirez
Email: david.ramirez@tamuk.edu

Admin: Natalynn Luera
Phone: 361-593-4330
Email: natalynn.luera@tamuk.edu

Department of Industrial Management and Technology (INDT):

Department Chair: Dr. Delia Valles-Rosales
Email: delia.rosales@tamuk.edu

Admin: Desiree Anguiano
Phone: 361-593-2608
Email: desiree.anguiano@tamuk.edu

Department of Mechanical and Industrial Engineering (MIEN):

Department Chair: Dr. Vinod Kumar
Email: vinod.kumar@tamuk.edu

Temporary Admin: Elizabeth J True-Hill
Phone: 361-593-2003
Email: elizabeth.true-hill@tamuk.edu

Frank H. Dotterweich College of Engineering

AN OVERVIEW OF OUR COLLEGE AND COMMUNITY

Brought to you by:
Engineering Communications

CONTENT UPDATED AS OF:

MAY 2025

CLASSES AT A GLANCE: ARCHITECTURAL ENGINEERING

Design & Architecture
- Architectural History II
- Architectural Development Introduction
- Architectural Design
- Senior Design Project I
- Senior Design Project II

Graphics & Visualization
- Computer Graphics

Structural Systems & Analysis
- Statics
- Strength of Materials
- Structural Analysis
- Structural Design Elective

Building Systems & Services
- Building Electrical Systems I
- Building Electrical Systems II
- Building Environmental Systems
- Building Services Engineering

Thermal & Fluid Systems
- Thermal Analysis
- Fluid Mechanics

Construction & Materials
- Construction Engineering
- Construction Materials
- Construction Materials Lab

Mathematics & Science Foundation
- Calculus I, II, III
- Differential Equations
- University Physics I & II
- University Physics Labs I & II
- General Chemistry I
- General Chemistry Lab I
- Statistical Methods

Practical Labs & Tools
- Instrumentation Laboratory

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: CHEMICAL ENGINEERING

Core Chemical Engineering Principles
- Conservation Principles I
- Conservation Principles II
- Introduction to Chemical Engineering for Non-Majors
- Chemical Engineering Thermodynamics I
- Chemical Thermodynamics II
- Fluid Transport Phenomena
- Heat Transport Phenomena
- Mass Transport Phenomena
- Chemical Reactor Engineering
- Process Simulation
- Process Dynamics and Control
- Process Design I
- Process Design II
- Process Economics
- Process Safety
- Process Sustainability
- Environmental Treatment of Chemical Processes

Lab Courses
- Unit Operations Lab I
- Unit Operations Lab II

Specialized & Applied Topics
- Biochemical Engineering
- Biochemical Reaction Engineering
- Biofuels/Biochemical Production Processes
- Bioseparations
- Bioprocesses for Waste Treatment
- Frontiers in Biochemical Processes
- Air Pollution Control
- Service Learning in Chemical Engineering
- Seminar in Chemical Engineering
- Special Problems in Chemical Engineering
- Internship in Chemical Engineering

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: CIVIL ENGINEERING

Fundamentals & Core Engineering
- Surveying
- Surveying Lab
- Statics
- Strength of Materials
- Fluid Mechanics
- Engineering Economics
- Computer Methods in Civil Engineering
- Construction Materials
- Construction Materials Lab
- Hydraulics and Fluid Mechanics
- Hydraulics/Fluid Mechanics Lab
- Environmental Engineering
- Geotechnical Engineering
- Geotechnical Engineering Lab
- Structural Analysis
- Structural Vibration
- Matrix Structural Analysis

Structural Design & Analysis
- Reinforced Concrete Design
- Structural Steel Design
- Foundation Engineering

Hydraulics, Water & Environmental Systems
- Hydraulic Engineering
- Hydrology
- Design of Water and Wastewater Conveyance Systems
- Geoenvironmental Engineering

Construction & Project Management
- Construction Engineering
- Engineering Project Estimating, Planning & Control
- Selected Topics in Civil Engineering
- Professional Preparation
- Senior Design Project I
- Senior Design Project II

Transportation Systems
- Principles of Transportation Engineering
- Transportation Engineering Design

Internships & Real-World Experience
- Civil Engineering Internship

Based on the Catalog 2024-2026 curriculum guide.

CLASSES AT A GLANCE: COMPUTER ENGINEERING

Foundational & Core Courses
- Introduction to Computer Science
- Rhetoric and Composition I & II
- Calculus I, II, III
- Differential Equations
- Discrete Mathematics
- General Inorganic Chemistry I and Lab
- University Physics I & II and Labs
- Engineering as a Career
- Government and Politics of the U.S. and Texas
- American History to 1877 and since 1877
- Communication, Creative Arts, Language/Philosophy/Culture, and Social/Behavioral electives

Computer Engineering Core
- Digital Logic Design
- Microprocessor Systems
- Network Analysis I & II
- Electronics I
- Circuits and Electronics Lab
- Computer Architecture and Design
- Random Signals
- Digital Systems Engineering
- Operating Systems
- Computer Networks
- Embedded Systems

Programming & Software
- Data Structures and Algorithms
- Software Engineering Project
- Electrical & Computer Engineering Project Lab

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: COMPUTER SCIENCE

Programming & Fundamentals
- Intro to Computer Basics and Excel
- Introduction to Computer Science
- Object-Oriented Programming
- Object-Oriented Software Engineering
- Data Structures and Algorithms
- Programming Languages

Software Engineering & Development
- Software Engineering I
- Software Engineering II
- Software Engineering Project I
- Software Engineering Project II

Cybersecurity & Forensics
- Introduction to Cybersecurity
- Cybersecurity
- Cyber Intelligence
- Computer Security
- Digital Forensics

Data & Intelligence
- Data Mining
- Machine Learning
- Artificial Intelligence

Mobile & Web Development
- Android Mobile App Development
- iOS Mobile App Development
- Web Mobile App Development

Databases & Systems
- Database Systems
- Computer Graphics
- Operating Systems
- Cloud Computing
- Computer Networks

Special Topics & Experience
- Selected Topics in Computer Science
- Special Problems in Computer Science
- Internship in Computer Science

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: ELECTRICAL ENGINEERING

Circuits, Electronics & Networks
- Network Analysis I
- Network Analysis II
- Circuits and Electronics Lab
- Electronics I
- Electronics II
- Circuits and Electromagnetic Devices
- Power Electronics
- Electric Drives

Signals & Systems
- Linear Systems and Signals
- Random Signals
- Communications Engineering
- Digital Systems Engineering
- Linear Control Systems

Digital & Embedded Systems
- Digital Logic Design
- Microprocessor Systems
- Microprocessor-Based Control Systems
- Embedded Systems
- Wireless Sensor Networks

Computers & Architecture
- Computer Architecture and Design
- Robotics II
- VLSI Circuit Design
- Advanced Laboratory
- Electrical & Computer Engineering Project Lab

Specialized & Applied Topics
- Electromagnetics
- Software and Hardware Integration
- Special Problems in Electrical Engineering
- Selected Topics in Electrical Engineering

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: ENVIRONMENTAL ENGINEERING

Foundations & Core Skills
- Introduction to Environmental Engineering
- Environmental Engineering Ethics & Policy
- Environmental Engineering in a Global Society
- Computer Methods for Environmental Engineering
- Chemical Principles for Environmental Engineering
- Engineering Management

Environmental Systems & Analysis
- Environmental Engineering Lab
- Environmental Engineering Process Fundamentals
- Environmental Microbiology
- Water and Wastewater Treatment
- Wastewater Treatment
- Solid and Hazardous Waste Fundamentals
- Air Pollution Control
- Nuclear Environmental Protection
- Water Resources and Advanced Computational Methods

Design & Professional Practice
- Environmental Engineering Design I
- Environmental Engineering Design II
- Selected Topics in Environmental Engineering
- Internship in Environmental Engineering

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: INDUSTRIAL ENGINEERING

Core Engineering and Statistics
- Applied Methods in Engineering Statistics I
- Applied Methods in Engineering Statistics II
- Engineering Methods in Quality Assurance
- Engineering Economic Analysis I
- Engineering Economic Analysis II
- Operations Research Methods in Engineering I
- Operations Research Methods in Engineering II

Systems & Manufacturing
- Computer-Based Production & Inventory Control
- Facility Design & Plant Layout
- Principles of Engineering Project Management
- Lean Manufacturing
- Computer Integrated Manufacturing Systems
- Supply Chain Management
- Standards in Supply Chain

Human-Centered Design & Safety
- Human Factors and Ergonomics
- System Safety Engineering
- Reliability & Advanced Topics in Quality Control

Simulation & Capstone
- Application of Computer Simulation
- Senior Design Project I
- Senior Design Project II

Enrichment & Advanced Topics
- Special Problems in Industrial Engineering
- Selected Topics in Industrial Engineering

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: INDUSTRIAL MANAGEMENT AND APPLIED ENGINEERING TECHNOLOGY

Core Technical & Safety Foundations
- Technical CAD
- Intro to Manufacturing Process
- OSHA for General Industry
- Industrial Electronics
- Measurements and Materials

Applied Engineering & Systems
- Manufacturing Processes
- Construction Technology
- Energy Systems
- Hazardous Waste and Fire Safety

Management & Business
- Principles of Accounting I
- Principles of Macroeconomics
- Principles of Management
- Leadership and Supervision
- Cost Estimating
- Lean Production (WI)
- Quality Assurance

Professional Preparation
- Industrial Employment Research
- Business and Advanced Electives
- Personal Computer Applications

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: MECHANICAL ENGINEERING

Foundations & Design
- Intro to Mechanical Engineering as a Career
- Engineering Graphics I
- Elementary Numerical Methods & Engineering Problem Solving
- Engineering Design & Simulation
- Machine Design I & II
- Kinematics of Machines
- Mechanical Engineering Design Projects I & II (Capstone)
- Materials Science & Laboratory
- Fundamentals of Manufacturing Processes

Thermal, Fluids & Energy Systems
- Thermodynamics
- Heat Transfer
- Fluid Mechanics
- Applied Thermodynamics
- Hydraulics of Pipeline Systems
- Design of Turbomachinery
- Air Conditioning
- Internal Combustion Engines

Control, Systems & Robotics
- Dynamics of Systems
- Control of Systems
- Engineering Vibrations
- Computational Methods in Mechanical Engineering
- Robotics I
- Introduction to Electromechanical System Design

Aerospace Engineering Track
- Design of Aerospace Structures
- Aerodynamics
- Aerospace Flight Dynamics
- Aerospace Systems Design
- Introduction to UAVs

Advanced Topics & Specialized Applications
- Gas Dynamics
- Intro to Finite Element Method
- Polymer Science & Engineering
- Manufacturing of Composites
- Therm Hydraulics of Nuclear Reactors
- Fundamentals of Nuclear Engineering
- Intro to Nuclear Power Plants
- Resource Optimization
- Information Analysis & Modeling in Security Engineering

*Based on the Catalog 2024-2025 curriculum guide.

CLASSES AT A GLANCE: NATURAL GAS ENGINEERING

Core Engineering & Lab Experiences
- Fundamentals of Reservoir Engineering
- Fluid Transport Phenomena
- Fundamentals of Drilling Engineering
- Unit Operations Laboratory
- Reservoir Engineering Lab
- Drilling Engineering Lab
- Hydrocarbon Measurements Lab
- Hydrocarbon Flow Measurement
- Hydrocarbon Measurement

Production, Processing & Distribution
- Natural Gas Production
- Natural Gas Cryogenics and Storage
- Natural Gas Transmission and Distribution
- Natural Gas Processes
- Separation Processes

Design, Simulation & Capstone
- Capstone Design I
- Capstone Design II (WI)
- Computer-Aided Design and Simulation (in multiple process-focused courses)
- Natural Gas Property Evaluation

Specialized Knowledge & Field Applications
- Well-Logging
- Hydrocarbon Flow Theory
- Petroleum Economics
- Pipeline Design
- LNG Safety and Engineering

*Based on the Catalog 2024-2025 curriculum guide.