Revised–May 2026

Engineering Career Cluster

The Engineering career cluster focuses on planning, designing, testing, building, and maintaining of machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and to mapping technician.

CFISD Program of Study: Robotics – Engineering Focus

Successful completion of the Robotics-Engineering Focus program of study will fulfill requirements of the STEM endorsement if the math and science requirements are met or the Business and Industry endorsement.

The Robotics-Engineering Focus program of study focuses on occupational and educational opportunities associated with a wide range of skills applied in the Engineering industry. Students will design, test, and evaluate projects related to engines, machines, and structures. This program of study incudes applying scientific, mathematical, and empirical evidence to solve problems through innovation, design, construction, operation, and maintenance of different engineering systems.

Recommended Course Sequence (credits)(A=advanced)

Students wanting an endorsement in this area must select three (3) or more courses totaling four (4) or more credits with at least one being advanced.

Grade 9	• Principles of Applied Engineering (1)
Grade 10	• Robotics I (1)
Grade 11	• Robotics II K (1-math) (A)
Grade 12	• Engineering Design and Problem Solving K (1-science) (A) • OR Capstone – Engineering (1) (A) • OR Practicum in STEM (2) (A)

Note: There is a robotics program of study offering courses with a manufacturing focus available in the Manufacturing career cluster.

Aligned Industry-Based Certifications Offered in CFISD

(course) (CCMR=impacts "career ready" status as outlined by the TEA Accountability System for College, Career or Military Readiness)

- SACA C-103 Robot System Operations (Robotics II K) (CCMR)

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	• Intern at an engineering, robotics, or aerospace company. • Visit an engineering firm and shadow multiple types of engineers.
Expanded Learning Opportunities	• Participate in SkillsUSA or TSA • Join a local engineering association and attend meetings.

CFISD·CTE opportunity starts here

AVAILABLE TO STUDENTS AT ALL 12 HIGH SCHOOLS!

- Receive training on industry-standard material, software & equipment.
- Enhance your resume by earning recognized industry-based certifications.
- Get a jump-start by taking advantage of core curriculum dual credit, transferable to 2-yr and 4-yr degrees.

ALL AT A FRACTION OF THE COST!

Example Postsecondary Opportunities

Apprenticeships
- Industrial Engineering Technician Apprenticeship

Associate Degrees
- Manufacturing Engineering Technology/ Technician
- Robotics Technology/Technician

Bachelor's Degrees
- Electrical and Electronics Engineering
- Engineering, General

Master's, Doctoral, and Professional Degrees
- Electrical and Electronics Engineering
- Engineering, General

Additional Stackable IBCs/Licensures
- Professional Engineer (PE License)
- Engineer in Training Certification (EIT)

Example Aligned Occupations

Data Source: Texas Wages, Texas Workforce Commission. rev 3/8/2024

Computer Numerically Controlled Tool Operators
Median Wage: $62,156
Annual Openings: 220
10-Year Growth: 10%

Aerospace Engineers
Median Wage: $127,870
Annual Openings: 429
10-Year Growth: 18%

Mechanical Engineers
Median Wage: $103,189
Annual Openings: 1,455
10-Year Growth: 19%

For more information on this and other CTE programs of study offered in CFISD, visit https://www.cfisd.net/academics/career-technical-education/programs-of-study

What's next? For more information on related programs available to continue your studies at Lone Star College, visit https://www.lonestar.edu/programs-of-study

Robotics – Engineering Focus