

Engineering Career Cluster

The Engineering Career Cluster focuses on the planning, designing, testing, building, and maintaining of machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles.

Engineering Foundations Statewide Program of Study



The Engineering Foundations program of study focuses on a wide range of skills applied in the Engineering industry. Students will design, test, and evaluate projects related to engines, machines, and structures. CTE learners will apply scientific, mathematical, and empirical evidence to solve problems through innovation, design, construction, operation and maintenance of different engineering systems.

Secondary Courses for High School Credit

Level 1

- Introduction to Engineering (PLTW) - Weighted
 - 1 Semester at Ben Barber
 - 1835CT/9-12
 - Autodesk Certified User: Fusion 360 Possible**

Level 2

- Principles of Engineering (PLTW) - Weighted Science Credit
 - 1 Semester at Ben Barber
 - 1836CT/11-12
 - Prerequisites: Intro to Engineering AND Algebra I AND Biology AND Chemistry OR IPC OR Physics**
- Robotics I
 - 1 Semester at Ben Barber
 - 1856CT/9-12

Level 3

- Computer Integrated Manufacturing (PLTW) - Weighted
 - 1 Semester at Ben Barber
 - 1838CT/10-12
 - Prerequisites: Introduction to Engineering**

Level 3

- Aerospace Engineering (PLTW) - Weighted
 - 1 Semester at Ben Barber
 - 1834CT/11-12
 - Prerequisites: Principles of Engineering**
- Engineering Design & Development (PLTW) - Weighted
 - 1 Semester at Ben Barber
 - 1845CT/11-12
 - Prerequisites: Computer Integrated Manufacturing OR Aerospace Engineering**
- Robotics II - Math Credit
 - 1 Semester at Ben Barber
 - 1858CT/10-12
 - Prerequisites: Robotics I**

Level 4

- Practicum in STEM
 - 2 Semesters at Ben Barber
 - 1857CA-CB/12 Only
 - Prerequisites: Students must complete a level 1 or 2 course AND a level 3 or 4 course to take a practicum course**
 - Selection Process
- Edu-Drone I Science Credit
 - 1 Semester at Ben Barber
 - 1860CT/11-12
 - Prerequisites: Biology, Chemistry or IPC or Physics AND Drivers License/Permit**
 - FAA Part 107 Remote Drone Pilot Certification**

Roadmap to Completer

Levels	Courses			
Level 1	1835CT Introduction to Engineering (1 Credit)			
Level 2	1836CT Principles of Engineering (1 Credit)		1856CT Robotics (1 Credit)	
Level 3	1838CT Computer Integrated Manufacturing (1 Credit)	1834CT Aerospace Engineering (1 Credit)	1845CT Engineering Design & Development (1 Credit)	1858CT Robotics II (1 Credit)
Level 4	1857CA-CB Practicum in STEM (2 Credits)		1860CT Edu-Drone I (1 Credit)	

1 Semester Home Campus	2 Semester Home Campus	1 Semester Ben Barber	2 Semesters Ben Barber	Ben Barber or HC
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- Failure to follow the sequence of courses in the Roadmap to Completer could result in a student not meeting standards to be a CTE Completer in the program of study.
- Students without their own transportation may not be able to participate in a practicum course.
- Successful completion of the Engineering Foundations program of study will fulfill requirements of the STEM and Business & Industry endorsement.