

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.

Mechanical and Aerospace Engineering Statewide Program of Study



The Mechanical and Aerospace Engineering program of study focuses on the design, development, maintenance, and testing of engines, machines, and structures related to aircraft and spacecraft. Students will design, test and evaluate projects related to aerodynamics, structural, and mechanical design. CTE learners will apply scientific, mathematical, and empirical evidence to solve problems for navigation, mechanics, robotics, propulsion and combustion.

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**

Level 3

- Aerospace Engineering (PLTW) - Weighted
 - 1 Semester at Ben Barber
 - 1834CT/11-12
 - **Prerequisites: Principles of Engineering**

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
- Engineering Design & Development (PLTW) – Weighted
 - 1 Semester at Ben Barber
 - 1845CT/11-12
 - **Prerequisites: Computer Integrated Manufacturing OR Aerospace Engineering**
- 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 Possible**

Roadmap to Completer

Levels	Courses		
Level 1	1835CT Introduction to Engineering (1 Credit)		
Level 2	1836CT Principles of Engineering (1 Credit)		
Level 3	1834CT Aerospace Engineering (1 Credit)		
Level 4	1857CA-CB Practicum in STEM (2 Credits)	1860CT Edu-Drone I (1 Credit)	1845CT Engineering Design & Development (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 Mechanical and Aerospace Engineering program of study will fulfill requirements of the STEM and Business & Industry endorsement.