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.

Regional Program of Study: Drone (Unmanned Vehicle)

The Drone (Unmanned Vehicle) regional program of study focuses on the occupational and educational opportunities associated with operating or designing an unmanned aircraft using a ground-based controller. This program of study includes understanding and designing systems of communications between the controller and the aircraft to ensure compliance with federal aviation safety regulations.

Secondary Courses for High School Credit

Level 1

- **No Level 1 Courses Offered**

Level 2

- **Robotics I (1 credit)**
  - 1856CT; 9-12 grade
  - 1 semester at Ben Barber

Level 3

- **Principles of Engineering (PLTW) (1 credit)**
  - 1836CT; 10-12 grade
  - 1 semester at Ben Barber
  - Weighted and Science Credit
  - *Prerequisite: Introduction to Engineering AND Algebra I AND Biology AND Geometry (can be concurrent enrollment)*
- **Robotics II (1 credit)**
  - 1858CT; 10-12 grade
  - 1 semester at Ben Barber
  - Math Credit
  - *Prerequisite: Robotics I*

Level 4

- **Practicum in Manufacturing (2 credits)**
  - 1822CA/CB; 12th grade
  - 2 semesters at Ben Barber
  - *Prerequisite: Completion of Level I or 2 AND Level 3 or 4 Course AND Selection Process*
- **EduDrone (1 credit)**
  - 1860CT; 11-12 only
  - 1 semester at Ben Barber
  - Science Credit
  - *Prerequisite: Biology, Chemistry or IPC or Physics, AND Driver's License or Permit*
  - FAA Part 107 Remote Drone Certification Possible

Example Postsecondary Opportunities

Associate Degrees

- Airline/Commercial/Professional Pilot and Flight Crew
- Manufacturing Engineering Technology/Technician

Bachelor's Degrees

- Aviation Science
- Aeronautical/Aerospace Engineering Technology

Master's, Doctoral, and Professional Degrees

- Aerospace, Aeronautical, and Astronautical/Space Engineering, General

Additional Stackable IBCs/License

- Aerial Mapping and 3D Modeling Certification

Example Aligned Occupations

Aerospace Engineering and Operations Technicians
Median Wage: $48,204
Annual Openings: 192
10-Year Growth: 21%

Avionics Technicians
Median Wage: $72,461
Annual Openings: 255
10-Year Growth: 16%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.

For more information visit:
https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources

Successful completion of the Drone (Unmanned Vehicle) regional program of study will fulfill requirements of the Business and Industry endorsement.

Texas Education Agency

Drone (Unmanned Vehicle)