

ENGINEERING

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.

Drone (Unmanned Vehicle)

The Drone (Unmanned Vehicle) regional program of study focuses on opportunities related to 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.

Drone (Unmanned Vehicle) Belton New Tech High School Course Pathway

Investigation	◆ Robotics I
Navigation	◆ Robotics II
Preparation	◆ Introduction to Unmanned Aerial Vehicles (UAV)
Application	◆ Scientific Research & Design ◆ Career Preparation for Program of Study



ALIGNED ENDORSEMENT: Successful completion of the Drone (Unmanned Vehicle) regional program of study fulfills the requirements of the Business & Industry endorsement.

ALIGNED OCCUPATIONS

Aerospace Engineering & 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%

WORK-BASED LEARNING

- ◆ Internship at public service, engineering, construction, or transportation firm
- ◆ Drone operations at a work site

EXPANDED LEARNING

- ◆ SkillsUSA participation
- ◆ Aerial drone competition participation

INDUSTRY-BASED CERTIFICATIONS

- ◆ FAA Part 107 Remote Drone Pilot

POSTSECONDARY LEARNING

Associate Degrees

- ◆ Airline/Commercial/Prof. Pilot and Flight Crew
- ◆ Manu. Engineering Technology/Technician

Bachelor's Degrees

- ◆ Aviation Science
- ◆ Aeronautical/Aerospace Engineering Technology

Master's, Doctoral, & Professional Degrees

- ◆ Aerospace, Aeronautical, and Astronautical Engineering, General

Stackable IBCs/Licensures

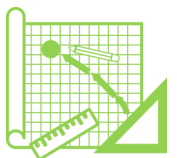
- ◆ Aerial Mapping & 3D Modeling Certification



Drone (Unmanned Vehicle) Course Details

COURSE	GRADE LEVEL	PREREQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Robotics I* (Level 2)	10-12		13037000 27769 1 credit		BNT
Robotics II* (Level 3) (Satisfies a math requirement)	11-12	Robotics I	13037050 27779 1 credit	FAA Part 107 Remote Drone Pilot	BNT
Introduction to Unmanned Aerial Vehicles (UAV) (Level 2)	11-12	None	N1304670 27728 1 credit	FAA Part 107 Remote Drone Pilot	BNT
Scientific Research & Design* (Level 4) (Satisfies a science requirement)	12	Biology Chemistry IPC or Physics 2+ courses for 2+ credits in Engineering career cluster	13037200 27735 1 credits	FAA Part 107 Remote Drone Pilot (BNT)	BHS LBHS BNT
Career Prep or Ext. Career Prep for POS* (Level 4) (Related job placement Required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27516 2 credits 12701141 27517 3 credits		BHS LBHS BNT

*Course is included in additional programs of study.



Drone (Unmanned Vehicle) Course Descriptions

Robotics I	In Robotics I, students will transfer academic skills to component designs in a project-based environment through implementation of the design process. Students will build prototypes or use simulation software to test their designs. Additionally, students will explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.
Robotics II	In Robotics II, students will explore artificial intelligence and programming in the robotic and automation industry. Through implementation of the design process, students will transfer academic skills to component designs in a project-based environment. Students will build prototypes and use software to test their designs.
Introduction to Unmanned Aerial Vehicles (UAV)	The Introduction to Unmanned Aerial Vehicles (UAV) Flight course is designed to prepare students for entry-level employment or continuing degrees in piloting UAV operations. This course is designed to instruct students in UAV flight navigation, industry laws and regulations, and safety regulations.
Scientific Research & Design	Scientific Research and Design is a broad-based course designed to allow districts and schools considerable flexibility to develop local curriculum to supplement any program of study or coherent sequence. The course has the components of any rigorous scientific or engineering program of study from the problem identification, investigation design, data collection, data analysis, formulation, and presentation of the conclusions. All of these components are integrated with the career and technical education emphasis of helping students gain entry-level employment in high-skill, high-wage jobs and/or continue their education.
Career Preparation for Program of Study	Career Preparation I provides opportunities for students to participate in a work-based learning experience that combines classroom instruction with business and industry employment experiences. The goal is to prepare students with a variety of skills for a changing workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

