



Transportation, Distribution, and Logistics Career Cluster

The Transportation, Distribution, and Logistics career cluster focuses on careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. It also includes related professional support services such as transportation infrastructure planning and management, logistics services, and mobile equipment and facility maintenance. This career cluster includes a diverse spectrum of occupations, ranging from automotive mechanic, avionics technician, automotive entrepreneur, pilots to logistics planning professionals.

Statewide Program of Study: Aviation Maintenance

The Aviation Maintenance program of study focuses on occupational and educational opportunities associated with maintenance and repair of airframe structures, systems, and components of an aircraft. This program of study includes exploration of aircraft maintenance procedures, air navigational aids, air traffic controls, and communication equipment to ensure compliance with federal safety regulations.



Secondary Courses for High School Credit

Level 1 • Introduction to Aircraft Technology

Level 2

Level 3 • Aircraft Airframe Technology

Level 4 • Practicum in Transportation Systems + Extended Practicum in Transportation Systems
• Career Preparation for Programs of Study + Extended Career Preparation

Aligned Advanced Academic Courses

Dual Credit Dual credit offerings will vary by Local Education Agency.

Students who earn credit for all of the college courses within this program of study will be eligible to graduate from Southwest Texas Junior College with a Level I Certificate in Aircraft General Maintenance.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Shadow an aviation maintenance technician at an airport to learn about aircraft inspection and maintenance
- Participate in an aircraft maintenance apprenticeship at an airline or a defense technology company

Expanded Learning Opportunities

- Participate in TechForce
- Participate in SkillsUSA
- Explore associations such as Aircraft Mechanics Association and Women in Aviation

Aligned Industry-Based Certification



Example Postsecondary Opportunities

Apprenticeships

- Aircraft Mechanic Apprentice



Associate Degrees

- Avionics Maintenance Technology
- Aeronautics/Aviation/Aerospace Science and Technology

Bachelor's Degrees

- Aircraft Powerplant Technology
- Airframe Mechanics and Aircraft Maintenance Technology

Master's, Doctoral, and Professional Degrees

- Aerospace, Aeronautical, and Astronautical/Space Engineering
- Industrial Technology

Additional Stackable IBCs/Licensures

- Certificated Aviation Maintenance Technician



Example Aligned Occupations

Aerospace Engineering and Operations Technicians

Median Wage: \$48,204
Annual Openings: 192
10-Year Growth: 21%

Aircraft Mechanics and Service Technicians

Median Wage: \$67,683
Annual Openings: 1,636
10-Year Growth: 16%

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>

COURSE INFORMATION

COURSE NAME	COURSE NUMBER AND CREDITS	PREREQUISITES (PREQ) COREQUISITES (CREQ)	GRADE
Introduction to Aircraft Technology	8727 (1 credit)	admission criteria in the student handbook	10
Aircraft Airframe Technology Dual Credit	8724D1 & 8724D2 (2 credits)	Intro to Aircraft & SWTJC requirements	11
Practicum in Transportation Systems Dual Credit	8729D1 & 8729D2 (3 credits)	Aircraft Airframe Technology Dual Credit	12

COURSE DESCRIPTIONS

Introduction to Aircraft Technology:

This course is designed to teach the theory of operation of aircraft airframes, power plants, and avionics systems and associated maintenance and repair practices. Aircraft services include knowledge of the function, diagnosis, and service of the electrical, electronic, hydraulic, pneumatic, airframe, mechanical, and power plant components of aircraft. Safety regulations will be explored through OSHA.

Aircraft Airframe Technology Dual Credit:

College Credits: AERM 1203, 1210, & 1315

This course is designed to teach basic theory of operation of aircraft, its power plants (engines), airframe (structure), and avionic system (instrumentation) along with associated maintenance and repair practices to keep these systems working. Student will understand the theory of how they all work to keep aircraft flying.

Practicum in Transportation Systems Dual Credit:

College Credits: AERM 1314, 1350, & 2231

Laughlin Air Force Base becomes the classroom for this course, providing hands-on training on T-1, T-6, and T-38 aircraft. Students learn about removing, replacing, and installing components of different systems that make an aircraft fly. They are trained on servicing fuel and oil in the engines and hydraulic systems of the aircraft and learn the proper use of manuals and publications to maintain aircraft.

Courses in yellow are advanced courses for endorsement purposes.

