Aviation [2 Year Pathway]

CTE Year 1 - Aviation Maintenance I

This course will introduce students to the operational and scientific nature of the aviation maintenance industry. This course will teach the practical applications of safe work habits and the correct use of tools and precision test instruments. Students will practice safe working habits and learn the components of a reciprocating aircraft engine; aircraft control systems and avionics systems. The course will include aircraft service requirements, ground operation procedures and calculating the cost associated with aircraft preventative maintenance. The appropriate use of technology and industry-standard equipment is an integral part of this course.

[This course meets A - G requirements, articulation pending as of 09.15.2022]

CTE Year 2 - Aviation Maintenance II

This course is a continuation of Aviation Maintenance Technician I. This course provides intermediate aviation maintenance technician students with instruction in general aeronautics. It includes the study of physical mathematics, weight and balance, FAA regulations, common and special tools and measuring devices, fluid lines, hardware, aircraft servicing, and documentation (Part 65). Discussions include a study of the principals and concepts of basic DC and AC electrical theory, magnetism, batteries, generators, motors, voltage regulators, circuit protection, and electrical component installations (FAR Part 65). The appropriate use of technology and industry-standard equipment is an integral part of this course.

[This course meets A - G requirements, articulation pending as of 09.15.2022]

CTE Endorsement

A student qualifies for a CTE endorsement on their high school diploma after successfully completing the following criteria: 1) completion of a CTE course of study in a program area, 2) completion of academic requirements governing receipt of a standard diploma, and 3) meet all requirements for the issuance of the Certificate of Skill Attainment.

Aviation Pathway Learning Outcomes

By the end of this course, WCW students will have experience in/knowledge of the following topics:

- Identify significant historical aviation milestones to include both aviation icon figures and individual aircraft recognition.
- Define common aviation terminology, definitions, and acronyms
- Describe the aviation industry structure, including the role of air carriers, general aviation, and corporate aviation.
- Recall basic aircraft systems, instruments, and components of a conventional airplane.
- Summarize the basic principles of flight.
- Interpret basic AC/DC Circuitry and symbols, apply Ohm's Law.
- Develop a detailed knowledge of lab tools and safety procedures.
- Describe common hydraulic and pneumatic systems as they apply to aircraft.
- Describe in detail aircraft systems which affect flight performance and stability.
- Identify and apply common aviation fasteners in association with sheet metal repair.

Course Contents

Aviation Mathematics	Principles of Flight
Physics	Electricity and Circuits
Aircraft Drawings	Weight and Balance
Materials and Processes	Cleaning and Corrosion Control
Fluid Lines and Fittings	Ground Operations and Servicing
Maintenance Publications	Maintenance Forms and Records
Tools for Aircraft Maintenance	Shop Safety through Human Factors

Certifications

FAA Wings Credits for the following courses:

ALC - 733 Damage History Aircraft Safety and Value
ALC - 531 Bonanza/Baron Landing Gear Systems and Maintenance
ALC - 796 ABS Engine Service Clinic Review
ALC - 180 Aircraft Maintenance Documentation for AMT's
ALC - 498 Aircraft Exhaust Systems
ALC - 107 Dirty Dozen - Human Error in Aircraft Maintenance
ALC - 37 Failure to Follow Procedures - Inspections
ALC - 587 Pause for Safety
ALC - 587 Wiring and Electrical

AOPA Certifications

Runway Safety
Human Factors

OSHA 10 Certification (10 hour)
CPR/First Aid Certification
Opt - STOP the Bleed Training

Supplies

Binder, pen/pencil for written assignments.

Course Requirements

The student will be expected to meet the same physical demands and be exposed to the same working conditions typical of the aviation maintenance industry.

- Standing and walking on hard surfaces
- Comprehension of a repair manual
- Heavy lifting
- Handling potentially dangerous equipment
- Cleaning of floors, work-surfaces, tools, and equipment

Course Policies

Attendance: It is imperative that students are in class.

Tardies: Students must be in the door by the time the tardy bell rings or they shall be counted tardy.

Class Participation

This is a very hands-on class. In order to get the most out of it you MUST participate. Participation will be monitored. Participation points will be reflected throughout your grade.

Student Expectations

- Come to class prepared everyday
- Active Participation
- Professional behavior towards instructor and classmates
- Be ready to learn

Late Assignments

A student will be marked down for late assignments without a proper excused absence. Missed repair labs can be made up either at home or an alternative assignment can be given for excused absences.

Donations

Aviation and aircraft components, text sources, advertisements and aviation repair manuals are all greatly appreciated in our classroom. Guest speakers who have experience in this industry who would like to share their stories with students are encouraged to make contact with Mr. Collins. (nathanc@vacavilleusd.org)