Aviation Maintenance Technology: Scope & Sequence

Year 1, Semester 1
AV101-Aviation Technologies General Curriculum
(416 hours)

District Pre-Assessment

Unit 1 (208 Hours)

- Drawings: Aircraft blueprints, drawings, symbols, graphs, and system schematics
- Math: Area, volume, ratio, proportion, algebra, and percentage problems.
- Weight/Balance: Weigh aircraft, compute and record data
- Basic Electricity: Capacitance, inductance, voltage, current, resistance, and continuity

CTSO Integration (Leadership Skills): Officer Elections, Bi-Monthly Officer Meetings, Monthly General Meetings.

Work-based Learning: Guest Speaker (Jobs in aviation)
Technical Standard: 2.1, 2.2, 2.3, 3.1, 3.2, 1.1-1.4

Unit 2 (208 Hours)

- Pubs, Forms, Records: Maintenance forms, records, and inspection reports
- Mechanic Privileges: Mechanic privileges per FAA part 65
- Materials & Processes: Perform precision measurements, Nondestructive testing methods
- Physics: Principles of simple machines, gas, fluid, heat, aerodynamics; and theory of flight
- Cleaning/Corrosion: Inspect, identify, remove, and treat aircraft corrosion and perform aircraft cleaning
- Fluid Lines/Fittings: Fabricate and install rigid and flexible fluid lines and fittings
- Ground Ops/Servicing: Start, ground operate, move, service, and secure aircraft and identify typical ground operation hazards

Certification: FAA- General exam
CTSO Integration (Leadership Skills): SkillsUSA Fall Leadership Conferences, Bi-Monthly Officer Meetings, Monthly General Meetings.

Work-based Learning: Mock Interview, Resumes. Simulated lab experience (fluid lines and fittings)

ADE Technical Skills Assessment Test

Year 1, Semester 2
AV102-Aviation Airframe Systems I
AV103 - Aviation Airframe Systems Summer
(564 Hours)

Unit 1 (282 Hours)

- Wood Structures: Inspect, service, and repair wood structures
- Aircraft Coverings: Inspect, service, and repair fabric and fiberglass covering materials
- Aircraft Finishes: Inspect, maintain, and apply finishing materials
- Sheet Metal/Structures: Layout, cut, bend, sheet metal, Rivets, fasteners, composites, Interiors, windows, doors
- Communication/Navigation: Inspect and service aircraft communication/navigation systems
- Fuel Systems: Inspect, service, and repair aircraft fuel systems and components
- Ice/Rain Protection: Inspect, service and repair aircraft ice and rain systems
- Fire Protection: Inspect, service, and repair aircraft fire detection and extinguishing systems

CTSO Integration (Leadership Skills): SkillsUSA State Conference, Bi-Monthly Officer Meetings, Monthly General Meetings.
Work-based Learning: Simulated Lab experience (industry competition)

Unit 2 (282 Hours)

- Welding: Weld, solder, and braze materials using gas/arc welding methods
- Landing Gear: Inspect, service, and repair aircraft landing gear systems
- Hydraulics/Pneumatics: Inspect, service, and repair aircraft hydraulic and pneumatic systems
- Aircraft Electrical: Inspect, service, and repair aircraft electrical systems

CTSO Integration (Leadership Skills): SkillsUSA National Conference, Bi-monthly officer meetings, monthly general meetings.
Professional Skills: 5.A-E

Aircraft Mechanics 47.0600.50
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District Post Assessment

Year 2, Semester 1
AV201 Aviation Airframe Systems II
(204 Hours)

Unit 1 (102 Hours)
- Assembly & Rigging: Inspect, assemble, and rig aircraft systems and components
- Cabin Atmosphere Control Systems: Inspect, service repair, and troubleshoot aircraft

CTSO Integration (Leadership Skills): Officer Elections, CTSO Officer Training, Fall Leadership Conference, Bi-Monthly Officer Meetings, Monthly General Meetings.


Work-Based Learning experiences through field trips to aviation related events, guest speakers, opportunities for volunteering in aircraft restoration activities and related activities

Technical Standard: F.22 - F.27, C.33, C.34, C.35

Unit 2 (102 Hours)
- Airframe Inspection: Perform airframe conformity and airworthiness inspections
- Aircraft Instruments: Inspect, service repair, and troubleshoot aircraft instrument systems and components

Certification: FAA Airframe exam

CTSO Integration (Leadership Skills): Officer Elections, CTSO Officer Training, Fall Leadership Conference, Bi-Monthly Officer Meetings, Monthly General Meetings.


Work-Based Learning: Simulated lab experience (100 hour inspection)


Year 2, Semester 2
AV202 – Aviation Powerplant
AV203 – Aviation Powerplant Summer
(766 Hours)

Unit 1 (383 Hours)
- Turbo Engines: Inspect, service repair, and troubleshoot of aircraft turbine engines
- Auxiliary Power Units: Inspect, service repair, and troubleshoot of auxiliary power unit systems and components
- Engine Instrument Systems: Inspect, service repair, and troubleshoot engine instrument systems
- Engine Fire Protection: Inspect, service repair, and troubleshoot engine fire protection systems
- Engine Electrical: Inspect, Service Repair, and Troubleshoot Engine Electrical Systems
- Engine Fuel Systems: Inspect, Service Repair and Troubleshoot Engine Fuel Systems
- Propellers: Inspect, Service Repair and Troubleshoot Propeller Systems

CTSO Integration (Leadership Skills): Bi-Monthly Officer Meetings, Monthly General Meetings State SkillsUSA competition, & SkillsUSA National Conference


Work-Based Learning: Simulated lab experience (Engine overhaul)


Unit 2 (383 Hours)
- Reciprocating Engines: Inspect, Service Repair, overhaul and troubleshoot of reciprocating engines
- Ignition & Starting: Inspect, Service Repair, and troubleshoot of ignition and starting systems
- Engine Induction: Inspect, Service Repair and Troubleshoot Induction Systems
- Engine Exhaust: Inspect, Service Repair and Troubleshoot of Engine Exhaust Systems
- Lubrication Systems: Inspect, Service Repair and Troubleshoot Engine Lubrication Systems
- Cooling Systems: Inspect, Service Repair and Troubleshoot of Engine Cooling Systems

Certification: FAA - Powerplant exam

CTSO Integration (Leadership Skills): Bi-Monthly Officer Meetings, Monthly General Meetings.

State SkillsUSA competition, Preparation for SkillsUSA National Conference


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Work-Based Learning: Field trip (Airline Shop tour, Simulated lab experience (100 hour inspection) Simulated lab experience (Engine overhaul). Mock interviews, Resume update

District Post-Assessment

Arizona Department of Education (ADE)
Common AZCCR Math Standards (CAMS)
English Language Art Standards (ELAS)
Federal Aviation Administration (FAA)