

AVIATION MAINTENANCE TECHNICIAN (AVMT)

AVMT 100 Aircraft Sciences I 3 Credit Hour(s)

This course will provide the student with a review of the fundamental operations in arithmetic as they are applied routinely in aircraft maintenance, including fractions, decimals, ratio, geometry, basic trigonometric functions, formulae, and proportions. Basic concepts of aviation applied physics will be presented, including: aerodynamic laws, theory of flight, fluid, heat, power, work, simple machines, and sound. The student will also learn aircraft weight and balance procedures, center of gravity computations, and how to identify and rectify adverse loading conditions.

Offered: Resident

AVMT 101 Maintenance Mathematics 1 Credit Hour(s)

This course will provide the student with a review of the fundamental operations in arithmetic as they are applied routinely in aircraft maintenance, including: fractions, decimals, ratios, geometry, basic trigonometric functions, formulae, and proportions. Applications of these operations in aircraft maintenance will be demonstrated.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 102 Aircraft Sciences II 3 Credit Hour(s)

This course is designed to introduce the student to direct and alternating current electricity, electrical circuit design, measuring devices, transformers, magnetism, electromagnetism, electronic devices and applications; with emphasis on basic laws relating to voltage, current, resistance, inductance, and capacitance. The student will also learn how to read and interpret electrical diagrams and to inspect and service aircraft batteries. This course will also give the student an understanding of aircraft drawings, symbols, and schematic diagrams commonly used in aircraft maintenance and illustrated parts manuals; the knowledge and ability to create drawings and sketches of repairs or alterations, and the ability to interpret blueprints, graphs, and charts.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 103 Maintenance Physics 1 Credit Hour(s)

This course will provide the student with a review of the fundamental concepts of physics. Basic concepts of aviation applied physics will be presented, including: aerodynamic laws, theory of flight, fluid, heat, power, work, simple machines, and sound.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 104 Maintenance Practices I 3 Credit Hour(s)

This course is designed to develop the student's skills in the proper use of basic aircraft mechanic's hand tools and measuring devices, aircraft hardware, safety methods, and materials used in aircraft maintenance and repair. Various methods of nondestructive testing will be learned and applied to practical situations, including liquid penetrant, magnetic particle, eddy current, ultrasound and radiography. The student will understand the privileges, limitations, and regulations provided by the FAA Code of Federal Regulations pertinent to aircraft maintenance technicians. Emphasis will be placed on the selection and use of FAA and manufacturers' aircraft maintenance specifications, data sheets, manuals, and publications; as well as proper logbook and maintenance entries and record keeping.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 105 Aircraft Weight and Balance 1 Credit Hour(s)

This course will provide the student with an understanding of the principles of aircraft weight and balance, and its crucial impact on flight safety. The student will learn aircraft weight and balance procedures, center of gravity computations, and how to identify and rectify adverse loading conditions.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 106 Maintenance Practices II 3 Credit Hour(s)

This course will instruct the student in aircraft cleaning; corrosion identification, treatment, removal, and control practices. The student will learn how to fabricate and install flexible and rigid fluid lines and fittings. The student will also understand proper procedures for safely securing, moving, fueling, starting, servicing, and taxiing aircraft.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 150 General Curriculum Final 0 Credit Hour(s)

Prerequisite: AVMT 101 (may be taken concurrently) and AVMT 102 (may be taken concurrently) and AVMT 103 (may be taken concurrently) and AVMT 104 (may be taken concurrently) and AVMT 105 (may be taken concurrently) and AVMT 106 (may be taken concurrently)

This course is designed to serve as a gateway between FAA required SOA Aviation Maintenance Technician Program (AMTP) training of General Curriculum material and FAA testing for licensure. It provides a means by which the student will demonstrate mastery of FAA General Curriculum material before receiving an endorsement for FAA licensure testing.

Offered: Resident

AVMT 200 Airframe Auxiliary Systems 3 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for airframe auxiliary systems and their components, including: cabin atmosphere control, communication and navigation, instruments, static and pitot, fire detection and extinguishing, smoke and carbon monoxide detection, ice and rain control, speed and configuration, anti-skid brakes, as well as position and warning. The student will also learn the operations and maintenance of aircraft fuel systems and components, including fluid quantity indicating systems, fluid pressure and temperature warning systems, fuel dump systems, transfer and defueling, and pressure fueling systems.

Offered: Resident

AVMT 201 Airframe Auxiliary Systems I 1 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for airframe auxiliary systems and their components, including: communication and navigation systems, aircraft instrument systems, and ice and rain control systems. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 202 Aircraft Electrical Systems 3 Credit Hour(s)

This course is designed to provide the student with an advanced study of AC and DC electrical systems, electrical power generation and control; to include alternators, generators, motors, relays, switches, wiring installations, load analyses, and aircraft batteries. The student will gain principle knowledge and skills to inspect, check, service, and troubleshoot airframe electrical components.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 203 Aircraft Auxiliary Systems II 1 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for airframe auxiliary systems and their components, including: cabin atmosphere control, and position and warning systems. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 204 Airframe Structures I 3 Credit Hour(s)

This course will instruct the student in the basic construction and properties of materials typically used in aircraft applications, with emphasis on aluminum sheet metal applications and their manufacture, repair, and inspection. Student projects will focus on sheet metal lay-out, cutting, forming, bending and riveting, using solid and blind rivets, as well as identifying and using specialty fasteners.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 205 Airframe Auxiliary Systems III 1 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for airframe auxiliary systems and their components, including: aircraft fire protection and aircraft fuel systems. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 206 Airframe Structures II 3 Credit Hour(s)

In this course the student will learn the design, application, fabrication, repair, finishing, and safety practices relating to composite, laminated, honeycomb, bonded, plastic, wood and fabric materials found in structural applications on aircraft, including windows, doors, and interior panels and furnishings. The student will also gain understanding and skills in various welding methods, procedures, and techniques as applied to aircraft manufacturing and repair. Oxygen/acetylene, shielded metal arc, gas metal arc welding, soldering and brazing processes will be studied.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 207 Hydraulic and Pneumatic Systems 2 Credit Hour(s)

This course is designed to introduce the student to basic fluid mechanics as it applies to practical applications in aircraft hydraulic and pneumatic systems. Construction and operation of hydraulic and pneumatic systems and components will be discussed. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 208 Airframe Assembly and Inspection 3 Credit Hour(s)

This course will instruct the student in aircraft covering materials, construction, inspection, and repairs using natural and synthetic fabrics. The student will understand the identification, inspection, and application of finishing materials to both fabric and metal surfaces, including touch-up, trim, and lettering. The student will learn the fundamentals of airframe assembly, rigging, aerodynamics, and controls. This course will also introduce the student to conformity and airworthiness inspection requirements and procedures as they relate to the airframe, including knowledge and abilities needed to perform inspections and properly complete associated forms and paperwork.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 209 Landing Gear Systems 1 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for aircraft landing gear systems. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 210 Airframe Hydraulic, Pneumatic, and Landing Gear Systems 3 Credit Hour(s)

This course is designed to introduce the student to basic fluid mechanics as it applies to practical applications in airframe systems. Construction and operation of hydraulic and pneumatic systems and components will be discussed, as well as identification and selection of hydraulic fluids and their related components. The student will learn landing gear designs, construction, and operations; as well as the inspection, servicing, and repair or replacement of various types of fixed and retractable landing gear systems, shock struts, brakes, wheels, tires, and steering systems.

Offered: Resident

AVMT 213 Powerplant Fuel Systems 2 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for engine fuel systems and their components, including: carburetion, injection, and fuel metering systems for reciprocating engines, as well as engine fuel control systems for turbine engines. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 214 Engine Electrical Systems 3 Credit Hour(s)

This course will present the principles of operation and servicing procedures of electrical systems and electrical components found on reciprocating and turbine engine powered aircraft. Students will study and understand the operation, inspection, and servicing of ignition and starting systems, generation and control systems, auxiliary power units, and wiring installations.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 215 Powerplant Lubrication Systems 1 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for engine lubrication systems and their components. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the students must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 216 Engine Auxiliary Systems I 3 Credit Hour(s)

In this course the student will learn the construction, operation, inspection, troubleshooting, servicing, repair and overhaul of reciprocating engine carburetion, injection, and fuel metering systems, as well as turbine engine fuel control systems. The student will also study fuel warning, pressure and rate of flow instruments, as well as reciprocating and turbine engine lubricants and lubrication systems.

Offered: Resident

AVMT 217 Powerplant Auxiliary Systems I 1 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for engine auxiliary systems and their components, including: engine exhaust and thrust reversers, and engine fire protection systems. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the students must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 218 Engine Auxiliary Systems II 3 Credit Hour(s)

In this course the student will study engine instrument systems, fire detection and extinguishing systems, induction systems, cooling systems, exhaust and thrust-reverser systems, with a focus on theory of operation, servicing, inspection, repair, and troubleshooting. The student will also learn the theory of operation and basic construction of fixed-pitch, constant-speed, and feathering propellers. The student will also be introduced to propeller synchronization systems, ice-control systems, and propeller governing systems. The student will gain knowledge & skills to inspect, check, service, remove, repair, and install propellers.

Offered: Resident

AVMT 219 Powerplant Auxiliary Systems II 1 Credit Hour(s)

This course will provide the student an understanding of operating principles and basic maintenance techniques for engine auxiliary systems and their components, including: engine cooling, engine induction, and engine instrument systems. The student will learn to inspect, check, service, troubleshoot and repair these systems.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 221 Propeller Systems 1 Credit Hour(s)

In this course the student will study the construction and operation of propeller systems and their components, including: fixed-pitch, constant-speed, and feathering propellers. The student will also be introduced to propeller synchronization systems, ice-control systems, and propeller governing systems. The student will learn to inspect, check, service, troubleshoot and install propeller systems.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 250 Airframe Curriculum Final 0 Credit Hour(s)

Prerequisite: AVMT 201 (may be taken concurrently) and AVMT 202 (may be taken concurrently) and AVMT 203 (may be taken concurrently) and AVMT 204 (may be taken concurrently) and AVMT 205 (may be taken concurrently) and AVMT 206 (may be taken concurrently) and AVMT 207 (may be taken concurrently) and AVMT 208 (may be taken concurrently) and AVMT 209 (may be taken concurrently)

This course is designed to serve as a gateway between FAA required SOA Aviation Maintenance Technician Program (AMTP) training of Airframe Curriculum material and FAA testing for licensure. It provides a means by which the student will demonstrate mastery of FAA Airframe Curriculum material before receiving endorsement for FAA licensure testing.

Offered: Resident

AVMT 312 Reciprocating Engine Technology 3 Credit Hour(s)

This course will instruct the student in the principles of operation, construction, and design of reciprocating aircraft engines and components. The student will gain procedural knowledge and technical skills in reciprocating engine removal, disassembly, inspection, servicing, overhaul, reassembly, installation, and troubleshooting. A student research project will delve into the history and development of reciprocating engines, as well as the comparative efficiencies of various types of reciprocating engines.

Registration Restrictions: Due to FAA requirements, the student must submit an AMTS Application through the School of Aeronautics prior to enrollment.

Offered: Resident

AVMT 320 Turbine Engine Technology 3 Credit Hour(s)

This course provides the student with an understanding of gas turbine engine cycles, high speed gas flow, and the design and construction of turbojet, turboprop, and turbofan engines. The student will receive an introduction to unducted fans and turbine-driven auxiliary power units. The student will learn the fundamentals of turbine engine operation, removal and replacement, maintenance, servicing, troubleshooting, and inspection. A student research project will delve into the history and development of turbine engines, as well as the comparative efficiencies of various types of turbine engines.

Offered: Resident

AVMT 350 Powerplant Curriculum Final 0 Credit Hour(s)

Prerequisite: AVMT 213 (may be taken concurrently) and AVMT 214 (may be taken concurrently) and AVMT 215 (may be taken concurrently) and AVMT 217 (may be taken concurrently) and AVMT 219 (may be taken concurrently) and AVMT 221 (may be taken concurrently) and AVMT 312 (may be taken concurrently) and AVMT 320 (may be taken concurrently)

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Offered: Resident