

# Aviation Maint Tech (AMT)

---

## Courses

### **AMT A170 Aircraft Ground Operations and Safety 1 Credit**

Examines safety in aviation maintenance including aircraft ground operation and fuel servicing. Presents policies and procedures of the Aviation Maintenance Technology Program, UAA and the FAA.

**Registration Restrictions:** Admission to the Undergraduate Certificate in Aviation Maintenance Technology, Airframe, Undergraduate Certificate in Aviation Maintenance Technology, Powerplant, Associate of Applied Science in Aviation Maintenance Technology, or the Bachelor of Science in Aviation Technology.

### **AMT A171 Basic Aerodynamics 3 Credits**

Introduces the theory of aerodynamics and factors affecting flight of heavier than air, fixed and rotary wing aircraft. Emphasizes aircraft Weight and Balance, aircraft structures, aerodynamics, theory of flight, and aircraft rigging.

**Registration Restrictions:** Admission to the Undergraduate Certificate in Aviation Maintenance Technology, Airframe, Undergraduate Certificate in Aviation Maintenance Technology, Powerplant, Associate of Applied Science in Aviation Maintenance Technology, or the Bachelor of Science in Aviation Technology.

### **AMT A172 Aircraft Publications, Regulations, and Records 3 Credits**

Examines the government's involvement in aviation maintenance and FAA regulations regarding aviation maintenance and approved training programs. Emphasizes the use of maintenance publications, maintenance forms and records, and technicians' privileges and limitations.

**Registration Restrictions:** Admission to the Undergraduate Certificate in Aviation Maintenance Technology, Airframe, Undergraduate Certificate in Aviation Maintenance Technology, Powerplant, Associate of Applied Science in Aviation Maintenance Technology, or the Bachelor of Science in Aviation Technology.

### **AMT A174 Fundamentals of Aircraft Electronics 3 Credits**

Examines the theory, derivation, and application of basic DC and AC electrical concepts, definitions, and laws. Introduces passive electrical components, electrical sources, AC waveforms, schematic symbols, and electrical wiring diagrams. Explains troubleshooting fundamentals and circuit analysis of both passive and reactive components.

**Prerequisites:** MATH A055 with a minimum grade of C or MATH A060 with a minimum grade of C or ALEKS Overall Test 1 with a score of 030 or ALEKS Overall Test 2 with a score of 030 or ALEKS Overall Test 3 with a score of 030 or ALEKS Overall Test 4 with a score of 030 or ALEKS Overall Test 5 with a score of 030.

**Corequisites:** AMT A174L.

### **AMT A174L Fundamentals of Aircraft Electronics Lab 2 Credits**

Introduces the methods of safe and accurate measurement of DC and AC electrical quantities using basic electrical test equipment. Connecting, testing, and operating a variety of DC and AC circuit components, troubleshooting defective components, observing the characteristics of electrical components in test circuits, and wiring circuits from schematic diagrams.

**Prerequisites:** AMT A170 with a minimum grade of D or concurrent enrollment and (MATH A055 with a minimum grade of C or MATH A060 with a minimum grade of C or ALEKS Overall Test 1 with a score of 030 or ALEKS Overall Test 2 with a score of 030 or ALEKS Overall Test 3 with a score of 030 or ALEKS Overall Test 4 with a score of 030 or ALEKS Overall Test 5 with a score of 030).

**Corequisites:** AMT A174.

### **AMT A175 Drawing and Precision Measurement 2 Credits**

Examines the theory and techniques involved in making and reading aircraft drawings and blueprints. Introduces precision measurement techniques and practices, and the use of blueprint information.

**Registration Restrictions:** Admission to the Undergraduate Certificate in Aviation Maintenance Technology, Airframe, Undergraduate Certificate in Aviation Maintenance Technology, Powerplant, Associate of Applied Science in Aviation Maintenance Technology, or the Bachelor of Science in Aviation Technology.

### **AMT A176 Aircraft Materials and Processes I 2 Credits**

Introduces aircraft cleaning, corrosion control, materials, and aircraft hardware. Covers the selection of appropriate cleaning chemicals and processes. Describes the identification, selection, and installation of aircraft hardware, fluid lines, and fittings. Examines the performance of aircraft processes such as heat treating and hardness testing.

**Registration Restrictions:** Admission to the Undergraduate Certificate in Aviation Maintenance Technology, Airframe, Undergraduate Certificate in Aviation Maintenance Technology, Powerplant, Associate of Applied Science in Aviation Maintenance Technology, or the Bachelor of Science in Aviation Technology.

**Prerequisites:** AMT A170 with a minimum grade of D or concurrent enrollment.

### **AMT A177 Reciprocating Engine Theory 2 Credits**

Introduces the theory of operation and construction of the internal combustion engine. Examines the combustion processes, design rationale, cooling, and lubrication of internal combustion reciprocating engines.

**Registration Restrictions:** Admission to the Undergraduate Certificate in Aviation Maintenance Technology, Airframe, Undergraduate Certificate in Aviation Maintenance Technology, Powerplant, Associate of Applied Science in Aviation Maintenance Technology, or the Bachelor of Science in Aviation Technology.

**AMT A178 Turbine Engine Theory 2 Credits**

Examines the construction and operation of turbine engines. Introduces thrust development and design and environmental factors that influence thrust, along with construction details from inlet to exhaust for representative aircraft turbine engines.

**Registration Restrictions:** Admission to the Undergraduate Certificate in Aviation Maintenance Technology, Airframe, Undergraduate Certificate in Aviation Maintenance Technology, Powerplant, Associate of Applied Science in Aviation Maintenance Technology, or the Bachelor of Science in Aviation Technology.

**AMT A181 Aircraft Fuel Systems 3 Credits**

Examines aircraft fuels, fuel/air mixtures, basic fuel systems, and fuel metering devices. Introduces the application of fuels, metering systems, tanks, valves, fuel lines, carburetors, fuel injection systems, turbochargers, and superchargers utilized in a variety of modern aircraft.

**Prerequisites:** AMT A176 with a minimum grade of D.

**Corequisites:** AMT A181L.

**AMT A181L Aircraft Fuel Systems Lab 1 Credit**

Examines the identification, handling, inspection, servicing, and troubleshooting aircraft fuels, basic fuel systems, and fuel metering devices, including complex aircraft systems, tanks, valves, fuel lines, carburetors, fuel injection systems, turbo-chargers, and superchargers.

**Prerequisites:** AMT A170 with a minimum grade of D and AMT A176 with a minimum grade of D.

**Corequisites:** AMT A181.

**AMT A185 Aircraft Sheetmetal Structures 3 Credits**

Introduces sheetmetal, its properties, and uses in fabrication of structural and nonstructural components of aerospace vehicles. Inspection techniques are addressed along with fabrication and repair processes of bending, cutting, forming, drilling, and riveting aluminum sheetmetal parts.

**Prerequisites:** AMT A176 with a minimum grade of D.

**Corequisites:** AMT A185L.

**AMT A185L Aircraft Sheetmetal Structures Lab 2 Credits**

Examines the inspection, fabrication, and repair of aircraft sheetmetal structures including the processes of bending, cutting, forming, drilling, and riveting aluminum sheetmetal parts.

**Prerequisites:** AMT A170 with a minimum grade of D and AMT A176 with a minimum grade of D.

**Corequisites:** AMT A185.

**AMT A186 Aircraft Non-Destructive Inspection Methods 3 Credits**

Introduces the selection and use of appropriate non-destructive testing methods commonly employed in the aircraft industry such as visual, dye penetrant, magnetic particle, eddy current, and ultrasound.

**Prerequisites:** AMT A170 with a minimum grade of D.

**AMT A187 Aircraft Reciprocating Engine Overhaul 3 Credits**

Introduces the overhaul practices for aircraft internal combustion engines. Includes disassembly, cleaning, non-destructive testing, measurement, lubrication, and assembly of engines.

**Prerequisites:** AMT A175 with a minimum grade of D and AMT A177 with a minimum grade of D.

**Corequisites:** AMT A187L.

**AMT A187L Aircraft Reciprocating Engine Overhaul Lab 2 Credits**

Provides practice in the performance of overhaul of aircraft internal combustion engines. Describes disassembly, cleaning, non-destructive testing, measurement, lubrication, and assembly of internal combustion engines.

**Prerequisites:** AMT A170 with a minimum grade of D and AMT A175 with a minimum grade of D.

**Corequisites:** AMT A187.

**AMT A272 Aircraft Electrical Hardware and Systems 3 Credits**

Examines the operation, application, servicing, and installation practices of aircraft electrical components such as switches, relays, fuses, other circuit protection devices, wires, and connectors. Describes components such as aircraft batteries, power generators (DC and AC), and aircraft electrical distribution systems. Details the methods used in testing, inspecting, and troubleshooting these components.

**Prerequisites:** AMT A174 with a minimum grade of D and AMT A174L with a minimum grade of D.

**AMT A273 Aircraft Fluid Power Systems 2 Credits**

Introduces fluid power and the application of pressure, force, area, volume, flow and speed, and function of fluid power in aircraft systems. Examines fluids, seals, hoses, tubing, connections, component identification and function, inspection, installation, and overhaul. Explores system operation, inspection, and troubleshooting for hydraulic, pneumatic, and landing gear systems.

**Prerequisites:** AMT A176 with a minimum grade of D.

**Corequisites:** AMT A273L.

**AMT A273L Aircraft Fluid Power Systems Lab 2 Credits**

Examines the identification, installation, operation, and servicing of fluid power systems and components such as fluids, seals, hoses, tubing, connections, pumps, valves, regulators, filters, reservoirs, and actuators. Analyses of system operation, inspection, and troubleshooting are included for hydraulic, pneumatic, and landing gear systems.

**Prerequisites:** AMT A176 with a minimum grade of D.

**Corequisites:** AMT A273.

**AMT A274 Aircraft Electronic Systems 5 Credits**

Examines the use of mechanical and electronic systems in sensing, communicating, and displaying information, along with solid state and digital devices, sensors, and special circuits used in instrumentation systems on aircraft. Analyzes the methods used in testing, inspecting, and troubleshooting those systems.

**Prerequisites:** AMT A174 with a minimum grade of D.

**Corequisites:** AMT A274L.

**AMT A274L Aircraft Electronic Systems Lab 1 Credit**

Provides practice in creating, operating, testing, and analyzing solid state and digital devices, sensors, and special circuits used in instrumentation systems and the mechanical and electrical systems used in sensing, communicating, and displaying information in aircraft.

**Prerequisites:** AMT A174L with a minimum grade of D.

**Corequisites:** AMT A274.

**AMT A279 Aircraft Turbine Engine Repair and Overhaul 3 Credits**

Examination of turbine engine construction details and engine support systems. Examination of operational characteristics and the procedures and practices used to repair or overhaul typical aircraft turbine systems.

**Prerequisites:** AMT A175 with a minimum grade of D and AMT A178 with a minimum grade of D.

**Corequisites:** AMT A279L.

**AMT A279L Aircraft Turbine Engine Repair and Overhaul Lab 1 Credit**

Examines practices involved in the disassembly, assembly, inspection, and repair of aircraft turbine engines. Emphasizes the use of technical data, appropriate tools, and inspection devices along with special safety procedures related to the servicing, operation, and repair of turbine engines.

**Prerequisites:** AMT A175 with a minimum grade of D and AMT A178 with a minimum grade of D.

**Corequisites:** AMT A279.

**AMT A282 Aircraft Propeller Systems 1 Credit**

Examines the installation, operation, inspection, performance testing, and troubleshooting of aircraft propeller systems.

**Prerequisites:** AMT A177 with a minimum grade of D and AMT A178 with a minimum grade of D.

**AMT A283 Aircraft Auxiliary Systems 3 Credits**

Examines the operation, maintenance, servicing, and troubleshooting of auxiliary systems on aircraft. Details the environmental control systems (heat, air conditioning, pressurization, oxygen), ice and rain control systems, instrumentation, fire protection, and associated indicating and warning systems of commuter and transport category aircraft.

**Prerequisites:** AMT A274 with a minimum grade of D and AMT A274L with a minimum grade of D.

**Corequisites:** AMT A283L.

**AMT A283L Aircraft Auxiliary Systems Lab 1 Credit**

Examines the operation, maintenance, servicing, inspection, and troubleshooting of auxiliary systems on aircraft. Skill building practice is provided in operating, servicing, and troubleshooting systems using system schematics, wiring diagrams, and maintenance information.

**Prerequisites:** AMT A274 with a minimum grade of D and AMT A274L with a minimum grade of D.

**Corequisites:** AMT A283.

**AMT A284 Aircraft Electrical Machinery 2 Credits**

Examines the construction, operation, inspection, servicing, and repair of aircraft electrical components such as electric motors, generators, alternators, voltage controls, magnetos, and ignition system components.

**Prerequisites:** AMT A272 with a minimum grade of D.

**Corequisites:** AMT A284L.

**AMT A284L Aircraft Electrical Machinery Lab 2 Credits**

Application of practices in inspecting, servicing, operation, testing, and repair of electrical components such as electrical motors, DC generators, DC alternators, AC alternators, voltage regulators, reverse current relays, generator and alternator protection devices, magnetos, and ignition system components.

**Prerequisites:** AMT A272 with a minimum grade of D.

**Corequisites:** AMT A284.

**AMT A285 Aircraft Bonded Structures 4 Credits**

Examines the theory of and techniques used in the fabrication, inspection, repair, and finishing of bonded structures, plastics, wood structures, fabric covering, honeycomb structures, and advanced composite structures.

**Prerequisites:** AMT A176 with a minimum grade of D.

**Corequisites:** AMT A285L.

**AMT A285L Aircraft Bonded Structures Lab 1 Credit**

Provides practice in the fabrication, inspection, and repair of bonded structures including plastics, fabric covering, honeycomb structures, advanced composite structures, and painting.

**Prerequisites:** AMT A176 with a minimum grade of D.

**Corequisites:** AMT A285.

**AMT A286 Aircraft Materials and Processes II 2 Credits**

Examines the theory of and techniques used in the repair of aircraft steel structures, and certain aluminum, magnesium, and titanium components.

**Prerequisites:** AMT A176 with a minimum grade of D.

**AMT A287 Reciprocating Engine Installation and Operation 3 Credits**

Provides an in-depth study of the installation, operation, and inspection of aircraft reciprocating engines. Examines the application of performance testing and troubleshooting practices commonly used to diagnose and correct aircraft engine problems.

**Prerequisites:** AMT A181 with a minimum grade of D and AMT A187 with a minimum grade of D.

**Corequisites:** AMT A287L.

**AMT A287L Reciprocating Engine Installation and Operation Lab 2 Credits**

Provides practice in the installation, operation, and inspection of aircraft reciprocating engines. Details the application of performance testing and troubleshooting practices commonly used to diagnose and correct aircraft engine problems.

**Prerequisites:** AMT A181L with a minimum grade of D and

AMT A187L with a minimum grade of D.

**Corequisites:** AMT A287.

**AMT A289 Turbine Engine Installation and Operation 3 Credits**

Provides an in-depth study of the installation, operation, and inspection of aircraft turbine engines. Examines the application of performance testing and troubleshooting practices commonly used to diagnose and correct aircraft engine problems.

**Prerequisites:** AMT A181 with a minimum grade of D and AMT A279 with a minimum grade of D.

**Corequisites:** AMT A289L.

**AMT A289L Turbine Engine Installation and Operation Lab 2 Credits**

Provides practice in the installation, operation, and inspection of aircraft turbine engines. Details the application of performance testing and troubleshooting practices commonly used to diagnose and correct aircraft engine problems.

**Prerequisites:** AMT A181L with a minimum grade of D and AMT A279L with a minimum grade of D.

**Corequisites:** AMT A289.

**AMT A364 Aircraft Avionics Systems 3 Credits**

Examines the fundamentals of design, installation, operation, testing, and maintenance of airborne communication, navigation, instrument, and auto flight systems.

**Prerequisites:** AMT A274 with a minimum grade of D.

**AMT A369 Airframe Assembly and Inspections 3 Credits**

Examines the procedures and rules for performance of scheduled and non-scheduled aircraft inspections, and evaluation of the condition of aircraft and their systems to determine airworthiness. Conduct research on regulations and conformity data. Plan and perform inspections then analyze and record findings. Details aircraft disassembly, balancing, reassembly, weight and balance, and the procedures for rigging of structural assemblies and flight control systems.

**Prerequisites:** AMT A185 with a minimum grade of D and AMT A272 with a minimum grade of D.

**Corequisites:** AMT A369L.

**AMT A369L Airframe Assembly and Inspections Lab 2 Credits**

Provides practice in the performance of scheduled and non-scheduled aircraft inspections. Includes practice in the performance of jacking and weighing of aircraft and disassembly, balancing, reassembly, and rigging of aircraft assemblies and flight controls, researching data, inspecting systems and components, evaluating the condition of aircraft and systems to determine air worthiness, and recording findings in maintenance records.

**Prerequisites:** AMT A185L with a minimum grade of D and AMT A272 with a minimum grade of D.

**Corequisites:** AMT A369.