

AVIATION (AVIATN)

Aviation (AVIATN) 101

Aviation General Sciences I-Math, Science and General Physics

This course introduces math and physics, basic aircraft types, nomenclature, and aerodynamics. Students learn algebraic operations, fractions, exponents, roots, and geometric analysis as applicable to aircraft design, powerplant operations, and aeronautical physics, as well as learning the physics behind simple machines, heat dynamics, fluid and gas laws, work and power, air pressure and the principles of weight and balance on an aircraft. The student will leave the course understanding basic principles of mathematics and physics and be able to apply that knowledge to safely weighing aircraft, computing the center of gravity, and applying an array of math and physics functions. Writing assignments, as appropriate to the discipline, are part of the course. 5 Laboratory hours. 2.5 Lecture hours. 5 Credit Hours.

Offered At: OH

Aviation (AVIATN) 102

Aviation General Sciences II - Tools, Surfaces, and Corrosion Control

This course provides a study into the charts, diagrams, and text, which show the dimension's, stations, access doors, zoning and physical locations of the major structural components of an aircraft. Students will be introduced to the tools, hardware, materials, and processes used in aircraft maintenance and repair. At the end of this course, students will know the proper handling and inspection of aircraft and be able to recognize various types of corrosion causes and troubleshoot corrective measures to control corrosion of different types of metals used in aircraft construction. Writing assignments, as appropriate to the discipline, are part of the course. 5 Laboratory hours. 2.5 Lecture hours. 5 Credit Hours.

Offered At: OH

Aviation (AVIATN) 103

Aviation General Sciences III - Maintenance Operations and Records

This course provides an introduction of maintenance publications and mechanic requirements for maintenance forms and records as well as an overview of flexible and rigid lines and fittings used to convey fluids in aircraft systems. Students learn aircraft services procedures; ground handling of aircraft and safety procedures and types of powerplants used in aircraft. By the end of this class, students will understand FAA regulations regarding maintenance personnel and know the limitations and requirements for inspection, maintenance records, and aviation mechanic privileges. Writing assignments, as appropriate to the discipline, are part of the course

5 Laboratory hours. 2.5 Lecture hours. 5 Credit Hours.

Offered At: OH

Aviation (AVIATN) 104

Aviation General Sciences IV - Basic Electricity

: This course introduces electrical theory and operation. Students learn to calculate and measure voltage, current, resistance, how to build and analyze simple circuits and to use electrical schematics. At the end of this course, students will be able to discuss alternating current electricity and basic electronics theory and apply it to servicing and troubleshooting aircraft batteries and solid state devices.

5 Laboratory hours. 2.5 Lecture hours. 5 Credit Hours.

Offered At: OH

Aviation (AVIATN) 200

Aviation Sheet Metal

This course introduces the theory and basic skills needed to assist aircraft sheet metal mechanics and to perform aircraft sheet metal modification and repair. Students develop skills in pattern layout, drilling, riveting, sheet metal bending, simple repairs, safely use basic hand and machine tools, identify basic material and hardware, common fastener installation/removal, corrosion removal/treatment, weld inspection and the use of gas and arc welding equipment, and print reading used in aircraft maintenance. Writing assignments, as appropriate to the discipline, are part of the course.

14 Laboratory hours. 4 Lecture hours. 8 Credit Hours.

Offered At: OH

Aviation (AVIATN) 205

Metallic Structures

This course provides basic repair techniques for sheet metal structures. Students will learn metal selection, layout and rivet selection composite structure types, composite defects, and repairs. The student will leave the course understanding basic sheet metal repair, weld inspection and the use of gas and arc welding equipment.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 206

Electrical, Navigational, and Communications Systems

This course introduces fundamentals of aviation electronics systems (avionics), theory of operation, use, installation, testing, and services. Students learn theory and applications of motors, generators, alternators, and voltage regulation. At the end of this course, students will understand the electrical supply and production systems found on an aircraft and apply their knowledge by testing, wire splicing, routing and installing and servicing aircraft electrical systems.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 207

Non-Metallic Structures

This course provides how to inspect and repair wood structures, fabric and fiberglass coverings, and the application of protective or decorative finishes. Students learn basic structural techniques for fiberglass laminates, plastics, and honeycomb materials, as well as some interior refinishing. At the end of class, students will be knowledgeable of structure types and be able to troubleshoot non-metallic structures for defects and then repair them.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 208

Aircraft Systems I

This course provides theory, operation, and repair information of hydraulic and pneumatic power systems. Students learn theory, operation, and maintenance of air conditioning, heating, oxygen, and cabin pressurization systems. At the end of the class, students will be knowledgeable of aircraft hydraulic system components and hydraulic system filtration and know how to repair and service aircraft hydraulic system seals and back#ups.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 209

Aircraft Systems II

An introduction to the theory, operation, service, and repair of landing gear, retraction systems, wheels, tires, brakes, struts, anti-skid systems, and shocks. The study of aircraft installed systems designed to prevent icing of airframes and engines. Maintenance and servicing of these systems is covered as well as atmospheric conditions that lead to precipitation icing in flight.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 213

Aircraft Systems III

This course provides instruction on basic aircraft and engine theory, operation, installations, and troubleshooting. Students learn aircraft and engine fuel systems and components, including tanks, lines, pumps, valves, selectors, and quantity#indicating systems. At the end of this course, students will be able to apply these skills to troubleshoot, repair, and service aircraft engine fire protection system and their components.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 214

Reciprocating Engines

This course provides instruction on overhaul, operation, and installation of aircraft reciprocating (piston) engines. Students learn engine theory and radial design and how to complete checks on hydraulic lock and operation of radial engines and maintenance procedures. At the end of class, students will be able to overhaul reciprocating engines and understand how to complete those checks and maintain proper record keeping of the overhaul.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 215

Turbine Engines

This course provides an understanding of various types of turbine engine constructions and overhaul. Students learn disassembly, inspection, checking, reassembly, testing, and repair. At the end of the course, students will be able to apply these skills and troubleshoot remove, repair, and install turbine engines back onto the aircraft.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 216

Powerplant Systems I

This course introduces the student to Ignition and starting systems, engine cooling systems, and engine exhaust and reversal systems. Students learn reciprocating engine baffles, carburetor heat, heat exchangers, superchargers, turbo charges, intake, turbine engine exhaust, thrust reverser systems, and engine cooling systems. At the end of the course, students will be able to apply their skills by troubleshooting and repairing powerplant systems.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 217

Powerplant Systems II

This course introduces the student to theory of operation, construction, overhaul, maintenance, and adjustment of fuel metering devices such as float type carburetors, pressure carburetors, and fuel injection systems used with reciprocating engines and turbine engine fuel control used in turbine engines. Students learn lubrication characteristics, engine lubrication, external units, filters, dilution, and oil temperature controls. At the end of the course, students will be able to apply this knowledge by inspecting and checking engine fuel system components and troubleshooting reciprocating and turbine engine operations.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 218

Aircraft Propellers and Inspections

This course introduces the student to the construction, inspection, checking, servicing, and repairing of fixed pitch, constant speed, feathering controls, and governing systems. Students learn conformity inspections of aircraft and powerplants, including required research and maintenance record entries. At the end of this course, students will be able to take the theory and operation of propellers and be able to measure blade angle and repair, and lubricate and install on aircraft.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

4 Laboratory hours. 1 Lecture hours. 3 Credit Hours.

Offered At: OH

Aviation (AVIATN) 219

Aviation Maintenance Technician Capstone

This individualized course will utilize interactive adaptive software to custom guide the student through a comprehensive review of the General, Airframe, and Powerplant subjects relevant to FAA mechanic certification testing with Airframe and/or Powerplant ratings. An instructor will guide the student in accessing their individual needs and aid in determining their level of preparedness for each phase of certification testing. At the end of this course, students will have taken the FAA written exams required of certification and prepared for the FAA Oral and Practical exam.

Must be 18 years or older with a valid driver's license, US Citizen and clean drug screen.

7 Laboratory hours. 3 Credit Hours.

Offered At: OH