2018-2019 TTC Catalog - Aircraft Maintenance Technology (ACM)

ACM 101 - General Regulations

Lec: 2.0 **Lab:** 0 **Credit:** 2.0

This course covers FAA regulations that pertain to the mechanics and maintenance of aircraft engines and airframes, technical standard orders, manufacturers' maintenance and parts manuals, service letters, bulletins and instructions.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 102 - Aviation Sciences

Lec: 3.0 **Lab:** 0 **Credit:** 3.0

This course is a study of the fundamentals of simple machines, heat dynamics, theory of flight and geometrical concepts as established for aviation applications, including basic math and algebraic operations

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 105 - Basic Aircraft Electricity

Lec: 3.5 **Lab:** 1.5 **Credit:** 4.0

This course covers basic electricity including AC and DC circuits, the use of electrical measuring instruments, the interpretation of electrical circuit diagrams, energy sources, and batteries and their maintenance.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 110 - Aircraft Drawings

Lec: 0 **Lab:** 3.0 **Credit:** 1.0

This course covers skills required to use drawings, identify symbols and schematic layouts, sketch repairs and alterations made to aircraft, and interpret graphs and charts.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 114 - Fluid Lines and Fittings

Lec: 1.0 **Lab:** 0 **Credit:** 1.0

This course covers the techniques used to identify, select, inspect, service, repair and fabricate both rigid and flexible plumbing systems.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 115 - Ground Handling and Servicing

Lec: 2.5 **Lab:** 1.5 **Credit:** 3.0

This course covers engine starting, ground operation, aircraft movement, ground handling safety requirements and aircraft servicing procedures. Also covered are interpreting and applying aircraft weight and balance procedures.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 120 - Materials and Corrosion Control

Lec: 3.0 **Lab:** 3.0 **Credit:** 4.0

This course covers nondestructive testing; identification and selection of aircraft hardware and materials; use of hand, power and precision measuring tools; identification and use of cleaning materials; and identification and treatment of aircraft corrosion.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 125 - Wood Structures, Coverings and Finishes

Lec: 1.0 **Lab:** 3.0 **Credit:** 2.0

This course covers the fundamentals of inspection, maintenance and repair of aircraft wood structures; selection, application and maintenance of aircraft fabric and fiberglass coverings; and selection, application and maintenance of aircraft finishes, trim and lettering.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 135 - Sheet Metal and Non-metallic Structures

Lec: 1.5 **Lab:** 7.5 **Credit:** 4.0

This course covers the principles of sheet metal layout, bending, rivet installation, structural inspection and repair methods. Composite construction, honeycomb, plastic laminates, fiberglass and thermoplastics for aircraft applications also are included in the course.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 145 - Aircraft Welding

Lec: 1.0 **Lab:** 3.0 **Credit:** 2.0

This course covers the welding techniques and safety procedures used to manufacture and repair truss-type aircraft structures. It includes types of welds, setup of welding equipment, soldering techniques, brazing, gas welding and electric welding of aluminum, stainless steel, magnesium and titanium.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 150 - Assembly and Rigging

Lec: 2.0 **Lab:** 3.0 **Credit:** 3.0

This course covers the methods and procedures used to maintain an aircraft in aerodynamically and structurally sound condition. Flight theory, aircraft assembly, jacking, structural alignment, rigging of fixed-wing and rotor-wing aircraft, balancing, and rigging of flight control surfaces are covered.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 155 - Aircraft Environmental Systems

Lec: 2.5 **Lab:** 1.5 **Credit:** 3.0

This course covers the skills required to inspect, check, service and repair aircraft heating, cooling, vapor cycle and air cycle air conditioning; pressurization, oxygen, ice and rain control; carbon monoxide detection; and fire protection systems.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 160 - Utility and Warning Systems

Lec: 3.0 **Lab:** 0 **Credit:** 3.0

This course covers the principles of inspecting, troubleshooting, servicing and repairing instrument systems, communication and navigation systems, and landing gear antiskid indicating and warning systems.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 165 - Hydraulic and Pneumatic Systems

Lec: 1.5 **Lab:** 4.5 **Credit:** 3.0

This course covers the operating principles for aircraft hydraulic and pneumatic power systems. The theory of fluid power; identification and selection of aircraft hydraulic fluids; and servicing, troubleshooting, inspecting and repairing of hydraulic and pneumatic power systems and components are included.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 167 - Landing Gear Systems

Lec: 2.5 **Lab:** 1.5 **Credit:** 3.0

This course covers the skills required to perform maintenance and service requirements for aircraft landing gear systems. The inspection, servicing, repair and operational check of landing gear, retracting systems, shock struts, brakes, wheels, tires and steering systems are included.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 170 - Aircraft Electrical Systems

Lec: 2.5 **Lab:** 4.5 **Credit:** 4.0

This course covers skills required to inspect, check, service, troubleshoot and repair aircraft electrical system controls, wiring installation, switches, indicators and protective devices.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 172 - Aircraft Fuel Systems

Lec: 0 **Lab:** 3.0 **Credit:** 1.0

This course covers maintenance of aircraft fuel systems including troubleshooting, inspection, service and repair principles for fuel system components, pressure fuel systems, quantity indicating systems, pressure and temperature systems, dump systems, and fuel management procedures.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 174 - Airframe Inspection

Lec: .5 **Lab:** 1.5 **Credit:** 1.0

This course covers the fundamentals of airframe inspection, including the purposes, requirements and type of inspection, inspection records, and suggested methods for performing systematic inspection procedures.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 201 - Lubricating Systems

Lec: 2.0 **Lab:** 0 **Credit:** 2.0

This course covers the use and classification of lubricants, oils and greases. The basic lubrication systems of opposed, radial and turbine engines are included.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 205 - Ignition and Starting Systems

Lec: 2.0 **Lab:** 3.0 **Credit:** 3.0

This course covers the theory and operation of aircraft powerplant ignition systems used on reciprocating and turbine engines, including the requirements for inspecting, servicing, repairing and/or overhauling magnetos, spark plugs, and ignition harnesses and switches.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 210 - Reciprocating Engine Overhaul

Lec: 0.5 **Lab:** 10.5 **Credit:** 4.0

This course covers the theory and development of the internal combustion engine used in aviation and the disassembly, inspection, service, repair and overhaul of opposed and radial aircraft engines.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 212 - Engine Installation

Lec: 3.0 **Lab:** 0 **Credit:** 3.0

This course covers the techniques for removal and installation of opposed and radial aircraft piston engines, including the evaluation of performance after reconditioning, testing, inspection, troubleshooting, preservation and return to service after long-term storage.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 220 - Turbine Engines

Lec: 1.5 **Lab:** 4.5 **Credit:** 3.0

This course covers the history, theory, construction and principles of operation of turbine engines, including removal, installation, maintenance, testing, inspection, adjustment and overhaul.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 226 - Engine Inspection

Lec: 0.5 **Lab:** 1.5 **Credit:** 1.0

This course covers the procedures necessary for powerplant inspection to conform to the manufacturer’s and FAA requirements.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 234 - Propellers and Components

Lec: 2.5 **Lab:** 4.5 **Credit:** 4.0

This course covers the theory, installation, inspection, service, maintenance, repair and principles of operation of fixed and controllable pitch propellers. This course also includes the study of propeller de-icing, anti-icing, synchronization, and selection and use of propeller lubricants for reciprocating and turbo propeller engines.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 240 - Engine Electrical Instrumentation and Fire Protection

Lec: 1.0 **Lab:** 6.0 **Credit:** 3.0

This course covers the skills required to inspect, check, service, troubleshoot and repair reciprocating and turbine engine starters and generators, alternators and charging systems, including wiring controls; switches; protective devices; and temperature, pressure, RPM-indicating and fire protection systems.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 245 - Powerplant Fuel Systems

Lec: 3.0 **Lab:** 3.0 **Credit:** 4.0

This course covers inspecting, troubleshooting, servicing, repairing and overhauling of powerplant fuel metering systems, including warning indicators, pressure and rate-of-flow instruments, and carburetor overhaul.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies

ACM 250 - Induction Cooling and Exhaust

Lec: 2.5 **Lab:** 1.5 **Credit:** 3.0

This course covers the skills required to inspect, check, troubleshoot, service and repair reciprocating and turbine engine induction, cooling and exhaust systems.

Prerequisite

MAT 032

or appropriate placement

Grade Type: Letter Grade

Division: Aeronautical Studies
