

Curriculum Vitae presented for Thomas Eugene Cross

Thomas E. Cross
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EDUCATION:

AAS Aviation Maintenance Technology Texas State Technical College Harlingen

Fall '99- Summer '01

PROFESSIONAL QUALIFICATIONS:

2001- 2004. Teaching Lab Assistant II Aviation Maintenance Texas State Technical College Harlingen. Duties included instructing Dual Enrollment students in General and Airframe based program courses. Also responsible for ordering and maintaining consumable supplies, maintaining lab and test equipment, and assisting Instructors in classroom activities.

2005-2006. Adjunct Instructor Aviation Maintenance Texas State Technical College Harlingen. Duties include teaching program courses, the development and revision of program course and assignments, advising and enrollment of students and program recruitment.

2007- 2010. Instructor Aviation Maintenance Texas State Technical College Harlingen. Duties include teaching program courses, the development and revision of program course and assignments, advising and enrollment of students and program recruitment.

2010 – 2016 Department Chair / Instructor Aviation Maintenance Texas State Technical College Harlingen. Duties include teaching program courses, the development and revision of program course and assignments, advising and enrollment of students and program recruitment.

2016 – Present Lead Instructor / Instructor Aviation Maintenance Texas State Technical College Harlingen. Duties include teaching program courses, the development and revision of program course and assignments, advising and enrollment of students and program recruitment.

LICENSE AND AWARDS:

2001 Certificate of Training Textron Lycoming Service School

2002 Certificate of Training "Diamond Award" Federal Aviation Administration

2003 Airframe and Powerplant License Federal Aviation Administration

2004 Certificate of Excellence "Diamond Award" Federal Aviation Administration

CLASSES APPROVED TO TEACH:

Shop Practices

- AERM 1203** An introduction to shop safety, the correct use of hand tools, equipment and precision measurement, identification of aircraft hardware, and the fabrication of fluid lines and tubing. Emphasis on procedures for testing, heat treating, and inspection of aircraft structures.

Weight & Balance

- AERM 1205** An introduction to Federal Aviation Administration (FAA) required subjects relating to the weighing of aircraft, the performance of weight and balance calculations, and appropriate maintenance record entries.

Federal Aviation Regulations

- AERM 1208** A course in the use and understanding of the Federal Aviation Administration (FAA) and aircraft manufacturers' publications, forms, and records; and the exercise of mechanic privileges within prescribed limitations.

Ground Operations

- AERM 1210** An introductory course in fuels, servicing methods and safety procedures, aircraft movement, securing and operations of aircraft, external power equipment, aircraft cleaning, and corrosion control.

Basic Electricity

- AERM 1314** A study of aircraft electrical systems and their requirements including the use of ammeter, voltmeter, and ohmmeter; series and parallel circuits; inductance and capacitance; magnetism; converting alternating current (AC) to direct current (DC); controlling devices; maintenance and servicing of aircraft batteries; and reading and interpreting aircraft electrical diagrams to include solid state devices and logic functions. Fundamentals of electrical safety also addressed.

Aviation Science

- AERM 1315** Fundamentals of mathematics, physics, and drawing as they apply to aircraft principles and operations as required by the Federal Aviation Administration (FAA) for airframe and powerplant mechanics.

Aircraft Propellers

- AERM 1240** Fundamentals of propeller design, function, and construction. Skill development in inspection, servicing, and repair of fixed-pitch, constant-speed, and feathering propellers and governing systems. Instruction in removal, balancing, and installation of propellers and fundamentals of safety are also addressed

Fuel Metering & Induction Sys

- AERM 1357** Skill development in fuel metering and induction systems used on reciprocating and turbine engines including fuel metering systems, carbureters, induction systems, heat exchangers, and cooling systems. Fundamentals of safety procedures will also be addressed

Powerplant & Auxiliary Power Units

- AERM 2341** Advanced concepts of auxiliary power unit (APU) and powerplant systems and components. Safety procedures will also be addressed.

Aircraft Reciprocating Engines

- AERM 1344 A study of reciprocating engines and their development, operating principles, and theory. Instruction in engine instruments, lubricating and exhaust systems. Fundamentals of safety will also be addressed.
Aircraft Power Plant Electrical
- AERM 1456 General principles of theory, operation, and maintenance of powerplant electrical systems including ignition, starting, and fire protection systems. Fundamentals of safety procedures will also be addressed. Prerequisite: AERM 1314.
Fuel Metering & Induction System
- AERM 1357 Skill development in fuel metering and induction systems used on reciprocating and turbine engines including fuel metering systems, carbureters, induction systems, heat exchangers, and cooling systems. Fundamentals of safety procedures will also be addressed.

Aircraft Turbine Engine Theory

- General principles of theory, history, and servicing of turbine engines to include lubrication, instrumentation, auxiliary power units, and exhaust systems. Fundamentals of safety procedures are also addressed.
- AERM 1351

Instruments, Nav. & Comm

- AERM 1243 A study of aircraft instruments and electronic flight instrument systems including testing and installing instruments; inspecting, checking, and troubleshooting navigation and communication systems; and inspecting and repairing antennas and electronic equipment installations.
Aircraft Turbine Engine Overhaul
- AERM 2351 General principles of theory, history, and servicing of turbine engines to include lubrication, instrumentation, auxiliary power units, and exhaust systems. Fundamentals of safety procedures are also addressed.
Airframe Auxiliary Systems
- AERM 1247 A comprehensive study of airframe auxiliary systems including the operation and repair of position and warning systems, cabin atmospheric control systems, ice and rain control systems for aircraft and engines, and fire detection and protection systems. Fundamentals of safety procedures also addressed.

Aircraft Welding

- AERM 1253 Skill development in repair procedures for steel, magnesium, brass, and aluminum materials used in aircraft assembly and selection and application of appropriate methods of welding, brazing, and soldering steel, magnesium, brass, and aluminum. Fundamentals of safety procedures also addressed.
Assembly & Rigging
- AERM 2233 A comprehensive study of the assembly and rigging of fixed and rotary-wing aircraft including structural alignment, balancing and rigging of control systems and assembly of aircraft components. Fundamentals of safety procedures are also addressed.
Aircraft Sheet Metal
- AERM 1352 Skill development in inspection and repair of sheet metal structures including forming, lay out and bending of sheet metal structures and identification, selection and installation of rivets and

fasteners. Fundamentals of safety procedures also addressed.

Wood, Fabric and Finishes

- AERM 1241 A study of aircraft instruments and electronic flight instrument systems including testing and installing instruments; inspecting, checking, and troubleshooting navigation and communication systems; and inspecting and repairing antennas and electronic equipment installations.
Aircraft Electrical System
- AERM 1345 A study of airframe electrical systems including installation, removal, disassembly, and repair of electrical components and related wiring. Fundamentals of electrical safety also addressed.
Prerequisite: AERM 1314.
Landing Gear System
- AERM 1350 General principles of inspection, servicing, overhaul, and repair of fixed and retractable landing gear systems. Includes coverage of systems, components, operation, and fundamentals of safety procedures.
Airframe Inspection
- AERM 2231 In depth coverage of methods and procedures to perform airframe conformity and air worthiness inspections (including one hundred hour inspections) in accordance with Federal Aviation Regulations and manufacturer's service information. Safety procedures will also be addressed.

Reciprocating Engine Overhaul

- AERM 2447 A study of reciprocating engine overhaul including measurement and inspection procedures. Instruction refers removal and installation, inspections, checks, servicing, and repair of engines.
Power-plant Inspection.
- AERM 2352 In depth coverage of methods and procedures for completing airworthiness and conformity inspections on aircraft power-plant
Aircraft Composites
- AERM 1254 A study of the inspection and repair of composite, fiberglass, honeycomb, and laminated structural materials including doors, windows, bonded structures, and interior furnishing.
Hydraulic, Pneumatic and Fuel System.
- AERM 1349 Skill development in inspecting, servicing, and maintaining aircraft fluid systems, including hydraulics, pneumatics, and fuel. Application of basic concepts through detailed maintenance procedures.