AVIATION MAINTENANCE TECHNOLOGY (ATC)

Advanced Technical Certificate

Career-Technical Program
Interest Areas:
Manufacturing and Trades

This program prepares students for entry-level employment in aerospace technology airframe maintenance mechanical fields. The curriculum fulfills the FAA requirements for lecture and lab hours needed prior to taking the FAA licensing exam. Students will receive the knowledge and skills necessary to work in various phases of aviation general and airframe industries. Students will receive hands on instruction from certified FAA Airframe and Power licensed instructors in lab setting approved by teh FAA as a CFR part 147 school.

Gainful Employment Information (https://www.nic.edu/programs/ge/100-CC2/Gedt.html)

Program Website (https://www.nic.edu/programs/viewprogram.aspx?program_id=100)

Program Requirements

Course	Title	Credits
Semester 1		
AERM-103	Weight and Balance	2
AERM-104	Shop Practices	3
AERM-106	Federal Aviation Regulations	2
AERO-101	Aviation Science	3
Select one of the following:		3-5
MCTE-101	Technical Mathematics	
MCTE-103	Technical Mathematics for Aerospace Technology	
MCTE-105	Technical Mathematics for Machining and Computer Aided Design Technologies	
MCTE-106	Technical Mathematics for Industrial Mechanic/ Millwright; HVAC; Welding	
GEM 3 - A.A.S. Mathematical Ways of Knowing		
	Credits	13-15
Semester 2		
AERM-102	Basic Electricity	3
AERM-105	Ground Operations	3
AERM-201	Wood, Fabric, and Finishes	2
AERM-203	Aircraft Composites	2
AERM-204	Aircraft Welding	2
ECTE-100 or ENGL-101	Fundamentals for Writing or English Composition	3
	Credits	15
Semester 3		
AERM-202	Aircraft Sheet Metal	5
AERM-205	Assembly and Rigging	2
AERM-211	Landing Gear Systems	3
AERM-215	Airframe Electrical Systems	3
	Credits	13
Semester 4		
AERM-206	Airframe Inspection	2
AERM-212	Hydraulics, Pneumatics and Fuel Systems	3
AERM-213	Airframe Auxiliary Systems	3
AERM-214	Instruments, Navigation and Communication Systems	2
ATEC-117	Occupational Relations and Job Search	2
	Credits	12
	Total Credits	53-55

Course Key

GEM | WCHE | AAS Institutionally Designated | Gateway | Milestone

Program Outcomes

Upon completion of the program, students will be able to:

- Understand and perform mathematic operations.
- Understand basic Aerodynamic and Aircraft Structures.
- Demonstrate application of physics as it pertains to aircraft.
- Demonstrate application of drafting and drawings as it pertains to aircraft maintenance and repair.
- Demonstrate the ability to analyze and troubleshoot an electrical circuit.
- Understand the importance of weight and balance for aircraft operation.
- Demonstrate the ability to compute the effect of equipment changes and loading schedules.
- Identify and use general mechanics tools.
- Describe and identify aircraft hardware and materials.
- Understand and describe basic heat treating processes.
- Understand and use various non-destructive testing (NDT) methods to inspect aircraft components.
- Perform inspections of welded assemblies and identify weld defects.
- Identify and describe aircraft fuels.
- Demonstrate the proper method of aircraft movement.
- Understand and use common inspection techniques to detect corrosion on aircraft structures.
- Understand and demonstrate the ability to read and interpret the manufacturers' maintenance data.
- Understand and demonstrate the ability to read and interpret airworthiness directives.
- Understand and demonstrate the ability to read and interpret FAA advisory material.
- Understand and explain mechanics' privileges and limitations per 14 CFR part 65.
- Understand and correctly complete maintenance forms and records to document work accomplished.
- Demonstrate inspection techniques to determine serviceability of structures and repairs.
- Demonstrate the ability to design and implement a repair scheme for a sheet metal structure.
- Use and understand methods of inspecting, checking, servicing, and repairing windows, doors, and interior furnishings.
- Demonstrate the ability to select, remove, and install special fasteners for metallic, bonded, and composite structures.

- Demonstrate the methods used to inspect and test composite assemblies and structures.
- Demonstrate the ability repair a composite assembly and structure.
- Personal Responsibility - demonstrate good work ethics, study habits, completion of all tasks in a timely manner.
- Human Relations - work safely and effectively in small groups on various projects.