

NITEC IN AEROSPACE TECHNOLOGY

CERTIFICATION

Credits required for certification:

Core Modules	: 56
Life Skills Modules	: 9
Elective Modules	: 8
<u>Total</u>	<u>: 73</u>

COURSE STRUCTURE

Module Title	Credits
CORE MODULES	
Aircraft General Maintenance	9
Aircraft Electrical System Maintenance	5
Airframe Maintenance	11
Human Factors and Air Legislation	6
Aircraft System Maintenance	10
Aircraft Propulsion Maintenance	7
Industry Attachment	8
ELECTIVES (COURSE SPECIFIC)	
TIG Welding	2
Non-Destructive Testing	2
Basic Principle of Helicopter	2
Composite Structure Repairs	2
Applied Aviation Science and Mathematics	4
ELECTIVES (INTER-DISCIPLINARY)	
Unmanned Aircraft System	2
ELECTIVES (GENERAL) AND LIFE SKILLS MODULES	
For details, click here	

Note: The offer of electives is subject to the training schedule of respective ITE Colleges. Students are advised to check with their Class Advisors on the availability of the elective modules they intend to pursue.

MODULE OBJECTIVES

Core Modules

Aircraft General Maintenance

On completion of the module, students should be able to perform aircraft general maintenance such as fastening, wire-locking, sealant application, general corrosion control and plumbing, interpret aircraft blueprint drawings, aircraft manuals and catalogues.

Aircraft Electrical System Maintenance

On completion of the module, students should be able to carry out electrical crimping, splicing and terminating electrical wires, use and calibrate measuring and testing instruments, handle Electrostatic Discharge Sensitive (EDS) devices, perform soldering of electrical and electronic components and inspect fibre-optic cables.

Airframe Maintenance

On completion of the module, students should be able to repair minor surface defects of aircraft sheet metal, corroded sheet metal, aircraft structural materials, composite structure, parts components and fibre-glass materials. They are also trained to perform cold and hot bonding, basic repair of cabin interiors, and riveting and blasting on sheet metal.

Human Factors and Air Legislation

On completion of the module, students should be able to carry out Workplace Safety and Health practices during aircraft maintenance works and prevent and minimise human-factor related errors in aircraft maintenance. They are also trained to update maintenance records and documentation, and to apply the regulatory framework of local air transport operations and governing system from Civil Aviation Authority of Singapore.

Aircraft System Maintenance

On completion of the module, students should be able to perform general maintenance and lubrication on aircraft components, prepare aircraft for towing and jacking, inspect structural defects and damage, and maintain aircraft pneumatics, hydraulics, flight controls, fuel, landing gear, environment control systems, emergency equipment and fire protection system.

Aircraft Propulsion Maintenance

On completion of the module, students should be able to assist in rigging and trimming of engine in test-cell environment, carry out of periodic inspections and maintenance on aircraft engines and propellers, and prepare aircraft for engine test run.

Industry Attachment

Students will undergo 6-month Industry Attachment programme in the aerospace industry to reinforce the skills and knowledge acquired at the training institute and develop competencies in other specialised areas.

Electives (Course Specific)

TIG Welding

On completion of the module, students should be able to join sheet metal and rebuild metal using TIG welding process.

Non-Destructive Testing

On completion of the module, students should be able to apply the working principles of non-destructive testing (NDT) methods used for detecting defects in the aircraft components / structures.

Basic Principle of Helicopter

On completion of the module, students should be able to interpret the basic principles of aerodynamics in helicopters and the various types of rotors used to achieve lift. They should also be able to identify the various parts of the helicopter and mechanism and controls used in changing of blade pitch.

Composite Structure Repairs

On completion of the module, students should be able to perform cold and hot bonding on honeycomb structures using fibreglass wet and epoxy resin material (cold bonding) and wet lay-up pre-preg, metal kin materials and foam core material. Students will also be trained on inspection of damaged structures and post bonding inspection and testing.

Applied Aviation Science and Mathematics

On completion of the module, students should be able to apply fundamentals of mathematics, law of physics and basic aerodynamics principles to solve engineering related problems which are applicable to aircraft flight and ground operations.

Electives (Inter-disciplinary)

Unmanned Aircraft System

On completion of the module, students should be able to maintain an unmanned aircraft system including associated ground control station and sensors.

Electives (General) and Life Skills Modules

For details, click [here](#).