

## AVIA H3604: Aircraft Systems

Language of Instruction:       English         Credits:       10         NFQ Level:       7         Module Dellwered In       2 programme(s)         Teaching & Learning       This module will be taught by Lectures, Tutorials, Class/Group Discussions and Practical Tasks on aircraft/engines using maintenance data, manuals and documents. Concepts will be demonstrated using model/actual aircraft/engines.         Module Air::       The student will understand various aircraft systems and correctly apply appropriate maintenance aircraft/engines.         Module Air::       The student will understand various aircraft systems and correctly apply appropriate maintenance procedures to develop essential analytical, troubleshooting and practical skills whilst working on aircraft/engine systems.         Learning Outcomes       The student will understand various aircraft systems and correctly apply appropriate maintenance aircraft/engine systems.         L01       Identify and explain the correct operation of a wide range of aircraft systems         L02       Demonstrate correct standard practices/procedures on (and safe operation of) aircraft systems         L03       Analyse and troubleshoot common problems/faults on/with aircraft systems         L04       Explain the Interrelationships between different aircraft systems and the effect/impact on each other         L05       Develop their own personal group/teamworking technical/ethical & practical skills in the aviation workshop/hangar/lab         No recommendations       These aremodu	Module Title	:		Aircraft Systems
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# AVIA H3604: Aircraft Systems

### **Module Content & Assessment**

#### Indicative Content

#### Hydraulic Power (ATA 29)

System lay-out; Fluid Types; Components; Normal/Emergency Power Generation - Electrical/Mechanical/Pneumatic; Pressure/Flow Control; Power Distribution; Indication/Warning; Interface with Other Systems

#### Landing Gear (ATA 32)

Design/Types/Construction, Shock Absorption; Normal/Emergency Extension/Retraction Systems; Indication/Warning; Wheels, Brakes, Antiskid & Autobraking. Tyres; Nose/Body Steering; A/G Sense

#### Pneumatic/Vacuum (ATA 36)

System lay-out; Sources - Engine/APU, Compressors, Air Bottle, Ground Supply; Pressure/Flow Control; Distribution; Indication/Warning; Interface with Other Systems

#### Air Supply, Conditioning & Pressurisation (ATA 21)

Air Supply - Source, Engine Bleed, APU & Ground. Air Conditioning - Air Cycle & Vapour Cycle Machines; Distribution/Flow/Temperature & Humidity Control; Heating. Pressurisation - Control/Indication; Cabin Pressure Controllers; Safety/Protection/Warning Devices

#### Oxygen (ATA 35)

System lay-out - Cockpit/Cabin; Storage, Charging & Distribution; Supply Regulation; Indication/Warning

#### Fuel Systems (ATA 28)

System lay-out; Storage/Supply/Dump/Jettison/Vent/Draining/Cross-feed & Transfer Sub-systems; Indication/Warning; Re/Defuelling; C of G Control systems

Ice & Rain Protection (ATA 30) Ice formation/Classification/Detection; Anti/De-Icing - Electrical, Hot Air, Pneumatic & Chemical; Probe/Drain Heating. Rain Repellant/Wiper Systems

#### Fire Protection (ATA 26)

Fire/Smoke, Detection/Warning/Extinguishing systems; Testing, Portable Fire Extinguishers

#### Water & Waste (ATA 38)

System lay-out, Supply/Distribution/Servicing & Draining; Toilet System lay-out, Flushing & Servicing; Corrosion

#### Equipment & Furnishings (ATA 25)

Emergency Equipment Requirements; Seats/Harnesses & Belts; Cabin/Equipment lay-out; Cabin Furnishing/Installation; Cabin Entertainment Equipment; Galley Installation; Cargo Handling/Retention Equipment; Airstairs

#### Integrated Modular Avionics (ATA 42)

Core System/Network Component Function; Integrated Modular Avionics (IMA) including - Bleed Management, Air Pressure/Temperature & Air/Cockpit/Avionics Ventilation Control, Air Traffic/Avionics Comms, Electrical Load Management, Circuit Breaker Monitoring, Electrical System (BITE), Fuel Management, Braking/Steering Control Temperature Monitoring, Landing Gear Extension/Retraction, Tyre/Oleo Pressure Indication, etc.

#### Cabin (ATA 44) & Information (ATA 46) Systems

Passenger Entertainment & Cabin Intercommunication Data Systems; Cabin Network Service; Data exchange between LRUs, typically operated via Flight Attendant Panels including - Data/Radio Comms & In-Flight Entertainment/Cabin Core/External Comms/Cabin Mass Memory/Cabin Monitoring/Miscellaneous Cabin Systems; Storage, Updating & Retrieval of Digital Information. Electronic Library Mass Storage Control including - Air Traffic/Information Management/Network Server/Aircraft General/Flight Deck/Maintenance/Passenger Cabin/Miscellaneous Information Systems

Assessment Breakdown	%
Continuous Assessment	30.00%
Project	40.00%
Practical	30.00%

Continuous As	ssessment			
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Written Report	Each student will accurately record and collate evidence of their practical tasks/activities into a Training Logbook, during term time for which a maximum of 30% will be awarded	1,2,3	30.00	n/a

Project				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Each student will record and collate a range of their own personal experiences into a Journal/Reflective Learning Portfolio, during term time for which a maximum of 40% will be awarded	2,4,5	40.00	n/a

Practical				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Each student will successfully complete a range of Practical Labs/Engineering Tasks on aircraft/engines during term time for which a maximum of 30% will be awarded	1,2,3,4,5	30.00	n/a
No End of Module I	Formal Examination			

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



# AVIA H3604: Aircraft Systems

# Module Workload

Workload: Full Time		
Workload Type	Frequency	Average Weekly Learner Workload
Lecture	12 Weeks per Stage	5.00
Practicals	12 Weeks per Stage	4.00
Independent Learning	15 Weeks per Stage	9.47
	Total Hours	250.00

Module Delivered In			
Programme Code	Programme	Semester	Delivery
CW_EEAER_B	Bachelor of Engineering (Honours) in Aerospace Engineering	6	Elective
CW_EEACS_D	Bachelor of Engineering in Aircraft Systems	6	Mandatory