

Module Title:	Aircraft Maintenance Project	Level:	6	Credit Value:	20
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Module code:	ENG686	Is this a new module?	Yes	Code of module being replaced:	
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Cost Centre:	GAME	JACS3 code:	H410
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Trimester(s) in which to be offered:	2	With effect from:	September 17
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School:	Applied Science, Computing & Engineering	Module Leader:	N. Burdon
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Scheduled learning and teaching hours	60 hrs
Guided independent study	140 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered	Core	Option
BEng (Hons) Aircraft Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Pre-requisites
None

Office use only

Initial approval February 17

APSC approval of modification

Have any derogations received Academic Board approval?

Version 1

Yes No

Module Aims

- To develop the student's systematic understanding of the aircraft maintenance process.
- To equip the student with skills necessary to design and carry out a simulated maintenance schedule on an aircraft, airframe, or power plant.
- To ensure the student can work using safety procedures, and safe working practices embedded in EASA Part 66 Licensing, and Part 145 Maintenance Organisations.

Intended Learning Outcomes

Key skills for employability

KS1	Written, oral and media communication skills
KS2	Leadership, team working and networking skills
KS3	Opportunity, creativity and problem solving skills
KS4	Information technology skills and digital literacy
KS5	Information management skills
KS6	Research skills
KS7	Intercultural and sustainability skills
KS8	Career management skills
KS9	Learning to learn (managing personal and professional development, self-management)
KS10	Numeracy

At the end of this module, students will be able to

Key Skills

At the end of this module, students will be able to		Key Skills	
1	Demonstrate a systematic understanding of Aviation Maintenance, via collaboration, design and development of a schedule that satisfies all regulations with respect to legality.	KS2	KS3
		KS5	KS6
2	Integrate and apply the aviation maintenance schedule, working to Part 66 practise, and produce logs and evidence of said maintenance that can be interrogated by an appropriate authority.	KS1	KS2
		KS3	
3	Identify and interrogate safe working practices in a maintenance organisation, and analyse situations with respect to risk and hazard.	KS2	KS6

Derogations

A derogation from regulations has been approved for this programme which means that whilst the pass mark is 40% overall, each element of assessment (where there is more than one assessment) requires a minimum mark of 30%.

Assessment:

The students will be provided with a realistic scenario relating to the maintenance of an aircraft, airframe or power plant. The students will be asked to manually carry out their own maintenance schedule, and provide a portfolio record of the self-designed schedule, and appropriate evidence and paperwork showing correct maintenance. The students will also be asked to give an individual oral presentation detailing their own solutions and contributions to the task, and a critical analysis of their work.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1,2,3	Group Project	80		3000
2	1,2	Presentation	20	15 mins	

Learning and Teaching Strategies:

This module will be delivered as a series of lectures and break-out sessions during which students will be encouraged to formulate their processes and schedules. The practical aspect of maintenance can be carried out in-house, or externally; in a more independent project method, utilising discussion with academic and industrial guides. The student will also be required to undertake significant reading of regulatory material.

Syllabus outline:

Part 66 Licensing: Reminder of Module 7 - Maintenance Practice, Key Factors of Maintenance,

Aircraft Handling: Live Aircraft Safety, Aircraft Handling, Storage and Safety Procedures, Aircraft Taxiing and Towing / Safety Procedures, Aircraft Jacking, Trestling and Chocking / Safety Procedures, Refuelling and Defuelling Procedures, Ground Running and safety zones, De-Icing/ Anti Icing Procedures, Electrical / Hydraulic and Pneumatic Ground Supplies, Aircraft Handling and effects of Environmental Conditions.

Abnormal Events: Turbulent Flight Inspections, Heavy Landings Inspection, Lightning Strike Inspection and HIRF Penetration, Aircraft Servicing Procedures.

Supervised Work: Simulated Turn Around, Long Term/Deep Maintenance, Simulated Abnormal Event

Bibliography:

Essential reading

Kinnison, H.A. and Siddiqui T., 2013. *Aviation Maintenance Management*. 2nd Ed. New York: McGraw - Hill
De Florio, F., 2016. *Airworthiness - An Introduction to Aircraft Certification & Operations*. 3rd Ed. Oxford: Butterworth-Heinemann

Other indicative reading

EASA, 2016. *EASA Regulations*. [online] Available at:
<<http://www.easa.europa.eu/regulations>> [Accessed 29 November 2016]
CAA, 2016. *CAA Airworthiness Guide*. [online] Available at:
<<https://www.caa.co.uk/Commercial-Industry/Aircraft/Airworthiness/>> [Accessed 29 November 2016]
CAA, 2002. *Human Factors in Aircraft Maintenance*. [pdf] TSO: Available at:
<<https://publicapps.caa.co.uk/docs/33/CAP715.PDF>> [Accessed 29 November 2016]