AVIATION MAINTENANCE ENGINEERING TECHNOLOGY (AIRFRAME AND AEROENGINES): BACHELOR

Overview

Program Mission

Prepare graduates to be successful as technicians and engineers embracing innovation and discovery and striving for life-long learning and professional development in the field of Aviation Maintenance Engineering Technology.

Program Description

The Bachelor of Aviation Maintenance Engineering Technology (Airframe and Aeroengines) (BAVET) program articulates into the GCAA licensed outcome which is approved by the General Civil Aviation Authority (GCAA) UAE (CAR147/02/2009). The program provides the graduates with excellent knowledge and skills to work effectively and professionally in the aviation community. Furthermore, it has the important element of broad education and continuous lifelong learning abilities.

Graduates can take positions in the aviation industry and can work individually or in teams to practically apply Aviation Maintenance skills and solutions with consideration of the industry regulations and ethics. Students will graduate with a Bachelor degree and after a further two years industry experience and meeting the General Civil Aviation Authority requirements they will have a license of category 'B1.1' (Airframe and Aeroengines). They also have the option to exit the program with an associate degree after completion of the second year (see associate degree requirements and conditions). Employment opportunities for aviation graduates within the UAE, Gulf region and worldwide are abundant and expanding. Employment opportunities include military operations, state commercial operations, private aviation operations and aviation supporting industries and logistics.

The program curriculum covers all aviation maintenance training modules required by the General Civil Aviation Authority (GCAA) and are compatible with European Aviation Safety Agency (EASA). The program also has the main and important engineering courses and the General Studies courses which will prepare the students to be competent engineers and productive educated professionals. Graduates will be ready for positions as aviation engineers and technicians with the technical and managerial skills necessary to enter careers in aviation maintenance, management, and operations. Students will gain the required practical knowledge and skills through labs, practical assignments and work placements.

The curriculum aims to produce high-quality engineers known for productivity, timeliness, dedication, and competence in the workplace. Graduates have the ability to work logically, accurately and efficiently; to gather and use information effectively; and to continue enhancing their careers through lifelong learning. The program stresses the effective use of technology, information resources and engineering tools. The program provides leadership qualities based on moral and ethical principles coupled with sound and rational judgment. Finally, the program is designed to prepare motivated students for graduate studies in Aviation Engineering and other related areas of professional practices.

Students are eligible for a one year Work Experiential Learning experience during their study.

Program Goals

1. Provide aviation graduates with the technical knowledge and skills required by the aviation industry to maintain a variety of aircraft systems to the highest standards.
2. Prepare graduates for a successful career as effective decision makers with strong communication and teamwork skills and an understanding of the global, ethical and social implications of the aviation industry and engineering profession.
3. Prepare graduates with a strong commitment to lifelong learning, continuing education and professional growth.
4. Provide graduates with leadership qualities and commitment to contribute actively to achieving the regulatory authorities' mission.

Program Learning Outcomes

Upon graduation, a HCT graduate in Bachelor of Aviation Maintenance Engineering Technology (Airframe and Aeroengines) program should demonstrate:

1. An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to identify, explain, formulate and solve broadly-defined engineering problems appropriate to the aviation maintenance and in accordance with regulations and manufacturer's instructions;
2. An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems related to Aviation Engineering Technology;
3. An ability to apply written, oral, and graphical communication in broadly defined technical and non-technical environments; and an ability to identify and use appropriate technical literature, computer software, information and communication technologies at a level required for basic aviation maintenance;
4. An ability to conduct standard tests, measurements, experiments and practical activities and to analyze and interpret the results to improve processes;
5. An ability to function effectively as a member as well as a leader on technical teams.
6. An ability to develop and evaluate a business plan to transform an engineering design (systems, products ,services and solutions) into a business opportunity utilizing entrepreneurial skills and knowledge

Requirements

Completion Requirements

Bachelor of Aviation Maintenance Engineering Technology: Airframe and Aeroengines

Students must successfully complete a minimum of 141 credits, including:

Code	Title	Credit Hours
Core Courses		105
Mathematics and Science Courses		3
General Studies course		33
Total Credit Hours		**141**
Note: Students must Successfully complete 60% of the GCAA license		
Work placement I and II are 8 weeks each. HCT will use its best endeavors to provide work placement opportunities.However, HCT is not able to guarantee work-placement positions.Students requiring a Certificate of Recognition (COR) at the completion of the program will be required to complete approximately 300 hours of the above-mentioned Work Placement in an “actual maintenance working environment”		

Code	Title	Credit Hours
Airframe and Aeroengines Core Courses		
Required Credits: 105		
AVT 1003	Aviation Mathematics and Physics	3
AVT 2003	Gas Turbine Engine	3
AVT 2013	Aeroplane Aerodynamics, Structures and Systems	3
AVT 2103	DC Electrical Fundamentals	3
AVT 2113	AC Electrical Fundamentals and Electrical Machines	3
AVT 2203	Workshop Practices and Safety	3
AVT 2213	Aircraft Materials	3
AVT 2223	Aircraft Hardware	3
AVT 2233	Maintenance Procedures and Abnormal Events	3
AVT 2243	Electrical Wiring Standards and Practices	3
AVT 2303	Aircraft Fundamentals and Basic Aerodynamics	3
AVT 2803	Work Placement I for Aviation	3
AVT 2902	Sophomore Design Project	2
AVT 3103	Electronic Fundamentals	3
AVT 3113	Digital Techniques Electronic Instrument Systems	3
AVT 3203	Maintenance Practices Workshop	3
AVT 3403	Human Factors	3
AVT 3413	Aviation Legislation	3
AVT 3703	Gas Turbine Engine I	3
AVT 3712	Gas Turbine Engine I Workshop	2
AVT 3723	Gas Turbine Engine II	3
AVT 3733	Propeller	3
AVT 3803	Work Placement II for Aviation	3
AVT 4503	Aircraft Flight Control and Structures	3
AVT 4513	Aircraft Conditioning and Oxygen	3
AVT 4523	Aircraft Electrical Power	3
AVT 4532	Aircraft Systems Workshop	2
AVT 4543	Aircraft Avionics Systems for Mechanical	3
AVT 4553	Aircraft Fuel and Passenger Systems	3
AVT 4563	Aircraft Protection Systems	3
AVT 4573	Aircraft Hydraulic and Landing Gear	3
AVT 4583	Aircraft Instrument and Lighting	3
AVT 4883	Introduction to Artificial Intelligence	3
AVT 4902	Graduation Project I	2
AVT 4911	Graduation Project II	1
EGN 1133	Design Thinking in Technology	3
EGN 4873	Data Analytics	3
Mathematics and Science Required Courses		
Required Credits:3		
MTH 1203	Calculus I	3
General Studies		
Required Credits : 33		
English, Arabic or other Languages		
Required Credits: 12		
LSC 1103, AES 1013, AES 1033 and LSC 2193		
Humanities or Arts		
Required Credits: 3		
AES 1003		
Information Technology and Mathematics		
Required Credits: 6		
ICT 2013 and MTH 1113		
The Natural Sciences		
Required Credits: 3		
PHY 1103		
The Social or Behavioral Sciences		
Required Credits: 9		
LSS 1003, LSS 1123 and BUS 2403		

Description	Data
Total Required Credits	141
Maximum Duration of Study	6 years
Minimum Duration of Study	4 years
Cost Recovery Program	No
Program Code	BAVET
Major Code	AVE

Ideal Study Plan

Recommended Sequence of Study

Year 1		
Semester 1		**Credit Hours**
AVT 2203	Workshop Practices and Safety	3
AVT 2213	Aircraft Materials	3
AES 1003	Emirati Studies	3
EGN 1133	Design Thinking in Technology	3
PHY 1103	Physics of Mechanics and Motion	3
MTH 1203	Calculus I	3
	Credit Hours	**18**
Semester 2		
AES 1033	Islamic Culture	3
LSS 1003	Life and Future Skills	3
AVT 1003	Aviation Mathematics and Physics	3
AVT 2103	DC Electrical Fundamentals	3
AVT 2223	Aircraft Hardware	3
AVT 2233	Maintenance Procedures and Abnormal Events	3
	Credit Hours	**18**
Year 2		
Semester 3		
AES 1013	Arabic Communications	3

LSC 1103	Professional Communication and Reporting	3
ICT 2013	Computational Thinking and Coding	3
AVT 2113	AC Electrical Fundamentals and Electrical Machines	3
AVT 2303	Aircraft Fundamentals and Basic Aerodynamics	3
AVT 3203	Maintenance Practices Workshop	3
	Credit Hours	**18**
Semester 4		
AVT 2003	Gas Turbine Engine	3
AVT 2013	Aeroplane Aerodynamics, Structures and Systems *	3
AVT 2243	Electrical Wiring Standards and Practices	3
AVT 2902	Sophomore Design Project	2
AVT 3103	Electronic Fundamentals	3
AVT 3733	Propeller	3
	Credit Hours	**17**
Summer		
AVT 2803	Work Placement I for Aviation	3
	Credit Hours	**3**
Year 3		
Semester 5		
LSS 1123	Basic Research Methods	3
AVT 3113	Digital Techniques Electronic Instrument Systems	3
AVT 3403	Human Factors	3
AVT 3703	Gas Turbine Engine I	3
AVT 3712	Gas Turbine Engine I Workshop	2
EGN 4873	Data Analytics	3
	Credit Hours	**17**
Semester 6		
BUS 2403	Innovation and Entrepreneurship	3
LSC 2193	Applied Skills Capstone	3
MTH 1113	Statistics for Engineering	3
AVT 3413	Aviation Legislation	3
AVT 3723	Gas Turbine Engine II	3
AVT 4883	Introduction to Artificial Intelligence	3
	Credit Hours	**18**
Summer		
AVT 3803	Work Placement II for Aviation	3
	Credit Hours	**3**
Year 4		
Semester 7		
AVT 4523	Aircraft Electrical Power	3
AVT 4553	Aircraft Fuel and Passenger Systems	3
AVT 4563	Aircraft Protection Systems	3
AVT 4583	Aircraft Instrument and Lighting	3
AVT 4902	Graduation Project I	2
	Credit Hours	**14**
Semester 8		
AVT 4503	Aircraft Flight Control and Structures	3
AVT 4513	Aircraft Conditioning and Oxygen	3
AVT 4532	Aircraft Systems Workshop	2
AVT 4543	Aircraft Avionics Systems for Mechanical	3
AVT 4573	Aircraft Hydraulic and Landing Gear	3
AVT 4911	Graduation Project II	1
	Credit Hours	**15**
	Total Credit Hours	**141**

**For students who wants to work on helicopters this course will be replaced with AVT 2023 Helicopter Aerodynamics, Structures and Systems*

*** Needs to be completed in a CAR 145 approved maintenance organisation, 300 HRS*

Faculty and Academic Staff

Abu Dhabi Men's

Ari Legowo, PhD Control & System Engineering, Osaka Prefecture University, Japan

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