AERONAUTICAL ENGINEERING TECHNOLOGY (BAEET): BACHELOR

Bachelor of Aeronautical Engineering Technology

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 Aeronautical Engineering Technology.

Program Description

The Bachelor of Aeronautical Engineering Technology program provides an excellent, broad education with a focused area of specialization options to cater for the UAE's globally-oriented aircraft industry. Aeronautical Engineering Technology graduates are trained to support the design, development, and maintenance of aviation systems to the highest level of industry standards. HCT Aeronautical Engineers are trained to use state-of-the-art software and hardware to enhance their analytical and practical skills in aero-engineering to equip them with essential tools and skills to strengthen their career opportunities and facilitate their entry into the industrial world.
The Bachelor of Aeronautical Engineering Technology curriculum produces 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. It also instills leadership qualities based on moral and ethical principles, coupled with sound and rational judgment. In addition, it is designed to prepare interested students for graduate studies in Aeronautical Engineering Technology and other areas of professional practice. Students will have the option to graduate with a Diploma in Aeronautical Engineering Technology upon the successful completion of 81 credits inclusive of the 8 week Work Placement.

Program Goals

1. Provide Aeronautical Engineering Technology professionals with the technical knowledge and skills required by the industry to develop, design, and maintain aviation systems to highest level of industry 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 industry and aero-engineering profession.
3. Provide graduates with strong commitment to lifelong learning, continuing education, and professional growth.
4. Provide graduates with leadership qualities and commitment to contribute actively to achieving the Abu Dhabi Vision 2030.

Program Learning Outcomes

Upon graduation, a HCT graduate in Bachelor of Aeronautical Engineering Technology should demonstrate:

1. an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the Aeronautical Engineering Technology.
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to theAeronautical 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;
4. an ability to conduct standard tests, measurements, and experiments 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

Students seeking the Bachelor of Aeronautical Engineering Technology degree must successfully complete the following minimum requirements:

1. A minimum of 146 credits, as follows:
   a. A minimum requirement of 92 credits of the program major as follows:
      i. a minimum of 80 core courses including Work Placement for 16 weeks
      ii. a minimum of 12 credits in the electives of the major
   b. A minimum of 21 credits of Math and Science requirements
   c. A minimum requirement of 33 credits in General Studies according to the General Studies breakdown and as advised in the study plan of the program.
2. A minimum CGPA of 2.00.

Code	Title	Credit Hours
Aeronautical Engineering Core Courses		
Required Credits: 80		
AET 2103	Fundamentals of Flight	3
AET 2403	Applied Thermofluids	3
AET 2902	Sophomore Design Project	2
AET 3101	Aeronautical Engineering Lab	1
AET 3303	Aircraft Structures	3
AET 3413	Applied Aerodynamics I	3
AET 3423	Applied Aerodynamics II	3
AET 3503	Fixed And Rotary Wing Assemblies	3
AET 3513	Aircraft Design	3
AET 3603	Flight Vehicle Dynamics and Stability	3
AET 4433	Aircraft Propulsion	3
AET 4613	Avionics Systems	3
AET 4902	Capstone Design Project I	2
AET 4912	Capstone Design Project II	2

EGN 1133	Design Thinking in Technology	3
EGN 2712	Applied Programing for Engineers	2
EGN 2806	Work Placement I	6
EGN 3012	Project Management	2
EGN 3212	Economics for Engineering	2
EGN 3806	Work Placement II	6
ELE 2153	Electrical Eng Fundamentals	3
MCE 2203	Applied Statics	3
MCE 2213	Mechanics of Materials	3
MCE 2223	Applied Dynamics	3
MCE 2303	Material Selection and Testing	3
MCE 2311	Solid Modelling	1
MCE 4603	Control Systems	3
MTE 3603	Electronics Systems and Circuits	3
Mathematics and Science Required Courses		
Required Credits: 21		
CHM 1103	Engineering Chemistry	3
MTH 1103	Pre Calculus	3
MTH 1203	Calculus I	3
MTH 2103	Calculus II	3
MTH 2503	Introduction to Differential Equations	3
MTH 3013	Calculus III	3
PHY 1203	Physics II	3
Aeronautical Engineering Elective Courses		
Required Credits: 12		
AET 4123	Aircraft Reliability and Maintenance Engineering	3
AET 4143	Human Factors in Aviation	3
AET 4203	Mechanics of Composite Structures and Materials	3
AET 4213	Rotary Wing Aircraft	3
AET 4313	Manufacturing Processes	3
AET 4323	Non Destructive Testing	3
AET 4333	Introduction to Aero Elasticity	3
AET 4443	Computational Fluid Dynamics	3
AET 4453	Space Propulsion	3
AET 4503	Finite Element Analysis	3
AET 4623	Automatic Control of Flight Vehicles	3
AET 4863	Special Topics in Aeronautical Engineering	3
AET 4893	Directed Study	3
General Studies		
Required Credits : 33		
English, Arabic or other Languages		
Required Credits: 12		
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		

Description	Data
Total Required Credits	146
Maximum Duration of Study	6 years
Cost Recovery Program	No
Minimum Duration of Study	4 years
Program Code	BAEET
Major Code	AET

Ideal Study Plan

Recommended Sequence of Study

Bachelor of Aeronautical Engineering Technology

Year 1		
Semester 1		**Credit Hours**
EGN 1133	Design Thinking in Technology	3
LSC 1103	Professional Communication and Reporting	3
LSS 1003	Life and Future Skills	3
MTH 1103	Pre Calculus	3
PHY 1103	Physics I	3
	Credit Hours	15
Semester 2		
LSC 2103	Academic Reading and Writing II	3
LSS 1123	Basic Research Methods	3
MTH 1113	Statistics for Engineering	3
MTH 1203	Calculus I	3
PHY 1203	Physics II	3
	Credit Hours	15
Summer		
AES 1013	Arabic Communications I	3
CHM 1103	Engineering Chemistry	3
	Credit Hours	6
Year 2		
Semester 1		
AES 1003	Emirati Studies	3
ELE 2153	Electrical Eng Fundamentals	3
MCE 2203	Applied Statics	3
MCE 2303	Material Selection and Testing	3
MCE 2311	Solid Modelling	1
MTH 2103	Calculus II	3
	Credit Hours	16
Semester 2		
AET 2103	Fundamentals of Flight	3
AET 2403	Applied Thermofluids	3
AET 2902	Sophomore Design Project	2
ICT 2013	Computational Thinking and Coding	3
MCE 2213	Mechanics of Materials	3
MTE 3603	Electronics Systems and Circuits	3
	Credit Hours	17
Summer		
EGN 2806	Work Placement I *	6
MCE 2223	Applied Dynamics	3
MTH 2503	Introduction to Differential Equations	3
	Credit Hours	12
Year 3		
Semester 1		
AET 3303	Aircraft Structures	3

AET 3413	Applied Aerodynamics I	3
AET 3503	Fixed And Rotary Wing Assemblies	3
EGN 2712	Applied Programing for Engineers	2
EGN 3012	Project Management	2
MTH 3013	Calculus III	3
	Credit Hours	16
Semester 2		
AET 3101	Aeronautical Engineering Lab	1
AET 3423	Applied Aerodynamics II	3
AET 3513	Aircraft Design	3
AET 3603	Flight Vehicle Dynamics and Stability	3
EGN 3212	Economics for Engineering	2
BUS 2403	Innovation and Entrepreneurship	3
	Credit Hours	15
Summer		
EGN 3806	Work Placement II	6
	Credit Hours	6
Year 4		
Semester 1		
AET 4433	Aircraft Propulsion	3
AET 4902	Capstone Design Project I	2
MCE 4603	Control Systems	3
2 Major Elective Courses		6
	Credit Hours	14
Semester 2		
AES 3003	Professional Arabic	3
AET 4613	Avionics Systems	3
AET 4912	Capstone Design Project II	2
2 Major Elective Courses		6
	Credit Hours	14
	Total Credit Hours	146

*Work Placement I shall start after year 2 Summer Semester is completed.

Faculty and Academic Staff

Faculty

Al Ain Women's

Amanuel Melake, PhD CFD in Turboengine Aerodynamics, RWTH Aachen University of Technology, Germany

Feras Darwish, PhD Mechanical Engineering, North Carolina A&T State University,USA

Hassan Jishi, PhD Aerospace Engineering, Khalifa University of Science, Technology and Research,UAE

Mohamad Muflehi, Masters Electronics, Sheffield Hallam University,UK

Utsav KC, PhD Aerospace Engineering, University of Texas at Austin,USA