

## Engineering Technology Division



The Engineering Technology division offers a wide range of programs. These programs prepare students to take up challenging and critical positions requiring technical expertise in a modern and evolving world.

Students experience a hands-on approach to learning that combines theory with practice and focuses on the demands of the modern workplace. Graduates are competent in their chosen technical specialization, communications, and information technology, critical thinking and problem solving, self-management and teamwork.

Employment prospects are excellent in many large sectors such as construction, energy, oil and gas, aviation, telecommunications, computing, manufacturing, consulting, the government and the military.

## Bachelor of Applied Science in Aviation Maintenance Technology (Airframe and Aeroengines)

The Aviation Engineering programs prepare students for positions as Engineers and Managers in the Aviation Industry. Graduates are certified as Licensed Aircraft Maintenance Engineers by national and international authorities, graduates will have to complete their On-Job-Training (OJT) with local aircraft maintenance organizations.

**Note:** Liberal Studies Mathematics requirement and 3 credit units of Physical and Biological Sciences are covered by AMTAA Core Courses.

		Course Credits			Course Credits
<b>Aviation Maintenance Technology Core Courses</b>			<b>Airframe and Aeroengines Requirement</b>		
<b>Required Credits: 115</b>			<b>See program chair for available courses.</b>		
			<b>Required Credits: 4</b>		
EAA 1403	Electronic Fundamentals (Mod 4 B1)	3	Select 2 4000 level courses		4
EAA 1503	Digital Techniques/ Electronic Instrument Systems (Mod 5 B1)	3			
EAA 1612	Materials and Hardware (Mod 6 B1)	12			
EAA 2109	Gas Turbine Engine (Mod 15 B1)	9			Course Credits
EAA 2712	Maintenance Practices (Mod 7 B1)	12			
EAA 3104	Propeller (Mod 17 B1)	4			
EAA 3215	Turbine Aeroplane Aerodynamics, Structures and Systems (Mod 11 B1) Part A	15			
EAA 3221	Turbine Aeroplane Aerodynamics, Structures and Systems (Mod 11 B1) Part B	21			
EAM 1103	Aviation Mathematics	3			
EAM 1203	Aviation Physics	3			
EAM 1306	Electrical Fundamentals	6			
EAM 2003	Basic Aerodynamics (Mod 8 B1 & B2)	3			
EAM 2013	Human Factors (Mod 9 B1 & B2)	3			
EAM 2023	Aviation Legislation (Mod 10B1 & B2)	3			
EMM 4003	Advanced Human Factors	3			
EMM 4013	Total Quality Management in Aviation	3			
EMM 4203	Aviation Operations Management	3			
EMM 4213	Aviation Project Management	3			
EMM 4223	Human Resources & Relations Management	3			
			<b>Liberal Studies</b>		
			<b>Required Credits: 39</b>		
			A. Communication		12
			B. Mathematics		3
			C. Art and Humanities		6
			D. Social and Behavioral Studies		9
			E. Physical and Biological Sciences		6
			F. Global Studies		3

<i>Total Required Credits</i>	152	<i>Minimum Duration of Study</i>	4
<i>Maximum Duration of Study</i>	6	<i>Program Code</i>	EAAAB
<i>Cost Recovery Program</i>	Yes	<i>Major Code</i>	EAA

## Bachelor of Applied Science in Aviation Maintenance Technology (Avionics)

The Aviation Engineering programs prepare students for positions as Engineers and Managers in the Aviation Industry. Graduates are certified as Licensed Aircraft Maintenance Engineers by national and international authorities, graduates will have to complete their On-Job-Training (OJT) with local aircraft maintenance organizations.

**Note:** Liberal Studies Mathematics requirement and 3 credit units of Physical and Biological Sciences are covered by AMTA Core Courses.

Aviation Maintenance Technology Core Courses			Course Credits
<b>Required Credits: 115</b>			
EAM 1103	Aviation Mathematics	3	
EAM 1203	Aviation Physics	3	
EAM 1306	Electrical Fundamentals	6	
EAM 2003	Basic Aerodynamics (Mod 8 B1 & B2)	3	
EAM 2013	Human Factors (Mod 9 B1 & B2)	3	
EAM 2023	Aviation Legislation (Mod 10B1 & B2)	3	
EAV 1409	Electronic Fundamentals (Mod 4 B2)	9	
EAV 1509	Digital Techniques/ Electronic Instrument Systems (Mod 5 B2)	9	
EAV 1608	Materials and Hardware (Mod 6 B2)	8	
EAV 1708	Maintenance Practices (Mod 7 B2)	8	
EAV 2145	Propulsion (EASA Mod 14 B2)	5	
EAV 3120	Aircraft Aerodynamics, Structures and Systems (Mod 13 B2) Part A	20	
EAV 3220	Aircraft Aerodynamics, Structures and Systems (Mod 13 B2) Part B	20	
EMM 4003	Advanced Human Factors	3	
EMM 4013	Total Quality Management in Aviation	3	
EMM 4203	Aviation Operations Management	3	
EMM 4213	Aviation Project Management	3	
EMM 4223	Human Resources & Relations Management	3	

  

Avionics Requirement		Course Credits
See program chair for available courses		
<b>Required Credits: 4</b>		
Select 2 4000 level courses		4

  

Liberal Studies		Course Credits
<b>Required Credits: 39</b>		
A. Communication		12
B. Mathematics		3
C. Art and Humanities		6
D. Social and Behavioral Studies		9
E. Physical and Biological Sciences		6
F. Global Studies		3

Total Required Credits	152	Minimum Duration of Study	4
Maximum Duration of Study	6	Program Code	EAVAB
Cost Recovery Program	Yes	Major Code	EAV



# Bachelor of Applied Science in Chemical Engineering Technology

The Bachelor of Applied Science (BAS) is a one-year bachelor degree completion for those students who have completed a relevant qualifying HCT Higher Diploma or equivalent. The BAS in Chemical Engineering Technology is to prepare students for positions as engineers in the petroleum, power generation, and related sectors.

		Course Credits			Course Credits
<b>Engineering Technology Core Courses</b>			<b>Chemical Engineering Technology Core Courses</b>		
<b>Required Credits: 12</b>			<b>Required Credits: 8</b>		
ETEC N435	Ethics and Professional Practice	4	CHEM N420	Process Dynamics and Control	4
ETEC N450	Project Management for Engineering	4	CHEM N425	Transport Phenomena	4
MATH N416	Analytical Geometry and Advanced Calculus	4			
		Course Credits			Course Credits
<b>Engineering Technology Core Options. See program chair for available course options</b>			<b>Process Engineering Stream Core Courses</b>		
<b>Required Credits: 4</b>			<b>Required Credits: 24</b>		
ETEC N305	Organizational Behaviour and Management	4	CHEM N405	Process and Equipment Design	4
ETEC N410	International and UAE Economics	4	CHEM N407	Optimization and Application in Refinery & Petrochemical Planning	4
			CHEM N409	Independent Work Based-Project	4
			CHEM N415	Separation Processes	4
			CHEM N431	Chemical Process HAZOP and Risk Analysis	4
			CHEM N433	Petroleum Gas Processing	4

<i>Total Required Credits</i>	48	<i>Minimum Duration of Study</i>	1
<i>Maximum Duration of Study</i>	3	<i>Program Code</i>	CHEMBP
<i>Cost Recovery Program</i>	No	<i>Major Code</i>	CHEM



# Bachelor of Applied Science in Civil Engineering Technology

The Bachelor of Applied Science (BAS) is a one-year bachelor degree completion for those students who have completed a relevant qualifying HCT Higher Diploma or equivalent. The BAS in Chemical

Engineering Technology is to prepare students for positions as engineers in engineering consultancy and contracting offices, the military, oil industry and local / federal government departments.

		Course Credits			Course Credits
<b>Engineering Technology Core Courses</b>			<b>Municipal Concentration Requirement</b>		
<b>Required Credits: 12</b>			<b>Select 1 course</b>		
ETEC N435	Ethics and Professional Practice	4	CIVL N411	Water Resources Modeling	4
ETEC N450	Project Management for Engineering	4	CIVL N443	Hydrology	4
MATH N416	Analytical Geometry and Advanced Calculus	4	CIVL N445	Waste Management	4
			CIVL N451	Coastal Engineering	4
			CIVL N455	Environmental Engineering	4
<b>Construction Concentration Requirement</b>			<b>Structural Concentration Requirement</b>		
<b>Select 1 course</b>			<b>Select 1 course</b>		
<b>Required Credits: 4</b>			<b>Required Credits: 4</b>		
CIVL N427	Construction Contract Management	4	CIVL N401	Prestressed Concrete Design	4
CIVL N432	Construction Surveying	4	CIVL N403	Structural Timber Design	4
CIVL N437	Engineering Economics	4	CIVL N413	Reinforced Concrete Design and Detailing II	4
			CIVL N426	Structural Steel Design & Detailing II	4
<b>Engineering Technology Concentration Requirement</b>			<b>Civil Engineering Technology Elective Options</b>		
<b>Select 1 course</b>			<b>See program chair for available course options</b>		
<b>Required Credits: 4</b>			<b>Required Credits: 20</b>		
ETEC N305	Organizational Behaviour and Management	4			
ETEC N410	International and UAE Economics	4			
<b>Highway Concentration Requirement</b>					
<b>Select 1 Course</b>					
<b>Required Credits: 4</b>					
CIVL N407	Traffic Engineering	4			
CIVL N412	Transportation Planning	4			
CIVL N422	Road Design and Construction	4			

Total Required Credits	52	Minimum Duration of Study	1
Maximum Duration of Study	3	Program Code	CIVLBP
Cost Recovery Program	No	Major Code	CIVL



# Bachelor of Applied Science in Electrical Engineering Technology

The Bachelor of Applied Science (BAS) is a one-year bachelor degree completion for those students who have completed a relevant qualifying HCT Higher Diploma or equivalent. The BAS in Electrical Engineering Technology is to prepare students for positions as engineers in power, process control, instrumentation sectors.

		Course Credits			Course Credits
<b>Engineering Technology Core Courses</b>			<b>Electrical Engineering Technology Elective Options</b>		
<b>Required Credits: 8</b>			<b>Required Credits: 36</b>		
ETEC N435	Ethics and Professional Practice	4	See program chair for available courses		
ETEC N450	Project Management for Engineering	4	Four 400 Level Courses Required		12
<b>Engineering Technology Concentration Requirement</b>					
Select 1 course					
<b>Required Credits: 4</b>					
ETEC N305	Organizational Behaviour and Management	4			
ETEC N410	International and UAE Economics	4			

<i>Total Required Credits</i>	48	<i>Minimum Duration of Study</i>	4
<i>Maximum Duration of Study</i>	3	<i>Program Code</i>	ECLBP
<i>Cost Recovery Program</i>	No	<i>Major Code</i>	ELCL

# Bachelor of Applied Science in Electronic Engineering Technology

The program focuses on the fields of telecommunications, instrumentation and control systems and data communications and networks. This program prepares the students for positions as engineers with the technical and managerial skills necessary to enter careers in the design, application, installation and maintenance of electronic systems. Students gain strengths in digital and embedded systems, programming and system control. Graduates are well prepared for analysis, applied design, development and implementation of electronic systems.

**Note:** Liberal Studies Physical and Biological Science and Mathematics requirements are satisfied by Electronic ET Core courses.

		Course Credits			Course Credits
<b>Electrical Engineering Core Courses</b>			<b>Mathematics and Science Required Courses</b>		
<b>Required Credits: 63</b>			<b>Required Credits: 24</b>		
EEC 1003	Electric Circuits I	3	LSM 113	Statistical Mathematics	3
EEC 2003	Electric Circuits II	3	MTH 1103	Pre-Calculus	3
EEC 2013	Digital Electronics	3	MTH 1203	Calculus I	3
EEC 2033	Microcontroller Systems	3	MTH 2103	Calculus II	3
EEC 2053	Analog Electronic Devices	3	MTH 2503	Linear Algebra & Differential Equations	3
EEC 3003	Instrumentation & Control	3	MTH 3013	Calculus III	3
EEC 3013	Electronics II	3	PHY 1103	Physics I	3
EEC 3043	Communication Systems	3	PHY 1203	Physics II	3
EEC 3073	Signals & Systems	3			
EEC 3103	Digital Communications	3			
EEC 3503	Embedded System Design	3			Course Credits
EEC 4002	Design Project I	2	<b>Electrical Engineering Technology Requirement</b>		
EEC 4013	Data Communications & Networks	3	<b>See program chair for available courses</b>		
EEC 4022	Design Project II	2	<b>Required Credits: 12</b>		
EEC 4043	Control Systems	3	Select 4 4000 level courses		12
EEL 2043	Principles of Machines & Power	3			
EGN 1103	Engineering Measurements & CAD Introduction	3			Course Credits
EGN 2003	Computer Programming	3	<b>Liberal Studies</b>		
EGN 3102	Project Management	2	<b>Required Credits: 39</b>		
EGN 3202	Engineering Economics	2	A. Communication		12
EGN 3332	Health Safety & Environment	2	B. Mathematics		3
EMT 3003	Programmable Logic Controllers	3	C. Art and Humanities		6
ERK 3002	Work Placement	2	D. Social and Behavioral Studies		9
			E. Physical and Biological Sciences		6
			F. Global Studies		3

Total Required Credits	129	Minimum Duration of Study	4
Maximum Duration of Study	6	Program Code	OEEAB
Cost Recovery Program	No	Major Code	ETECAB

# Bachelor of Applied Science in Electronic Engineering Technology

The Bachelor of Applied Science (BAS) is a one-year bachelor degree completion for those students who have completed a relevant qualifying HCT Higher Diploma or equivalent. The BAS in Electronics Engineering Technology is to prepare students for positions as engineers in communications process control and instrumentation sectors.

		Course Credits			Course Credits
<b>Engineering Technology Core Courses</b>			<b>Electronics Engineering Technology Elective Options</b>		
<b>Required Credits: 8</b>			<b>See program chair for available courses</b>		
<b>Required Credits: 36</b>			<b>Required Credits: 36</b>		
ETEC N435	Ethics and Professional Practice	4	Four 400 Level Courses Required		12
ETEC N450	Project Management for Engineering	4			
		Course Credits			
<b>Engineering Technology Concentration Requirement</b>					
<b>Select 1 course</b>					
<b>Required Credits: 4</b>					
ETEC N305	Organizational Behaviour and Management	4			
ETEC N410	International and UAE Economics	4			
<i>Total Required Credits</i>		48	<i>Minimum Duration of Study</i>		4
<i>Maximum Duration of Study</i>		3	<i>Program Code</i>		ELECBP
<i>Cost Recovery Program</i>		No	<i>Major Code</i>		ELEC

# Bachelor of Applied Science in Mechanical Engineering Technology

The program deals with the manipulation of energy through useful mechanical devices and the application of thermodynamics and heat transfer systems. The program prepares students for positions as engineers with the knowledge, problem solving ability, and managerial skills to enter careers in the design, installation, manufacturing, testing and maintenance of mechanical systems. Students will gain expertise in

mechanical design, turbomachinery and process control. Graduates will typically have strengths in the analysis, applied design, development and implementation of mechanical systems and processes.

**Note:** Liberal Studies Physical and Biological Science and Mathematics requirements are satisfied by Mechanical ET Core courses.

		Course Credits			Course Credits
<b>Mechanical Engineering Core Courses</b>			<b>Mathematics and Science Required Courses</b>		
<b>Required Credits: 63</b>			<b>Required Credits: 24</b>		
EEC 2073	Electrical Engineering Fundamentals	3	LSM 1113	Statistical Mathematics	3
EGN 1103	Engineering Measurements & CAD Introduction	3	MTH 1103	Pre-Calculus	3
EGN 3102	Project Management	2	MTH 1203	Calculus I	3
EGN 3202	Engineering Economics	2	MTH 2103	Calculus II	3
EGN 3332	Health Safety & Environment	2	MTH 2503	Linear Algebra & Differential Equations	3
EMC 2003	Computer Aided Drafting	3	MTH 3013	Calculus III	3
EMC 2013	Materials Selection & Testing	3	PHY 1103	Physics I	3
EMC 2023	Statics and Dynamics	3	PHY 1203	Physics II	3
EMC 2033	Manufacturing Technology	3			
EMC 2043	Mechanics of Materials	3			Course Credits
EMC 2053	Fluid Mechanics	3			
EMC 3003	Industrial Plant Maintenance	3	<b>Electrical Engineering Technology Requirement</b>		
EMC 3013	Fabrication & Welding	3	<b>See program chair for available courses</b>		
EMC 3023	Thermodynamics I	3	<b>Required Credits: 12</b>		
EMC 3033	Heat Transfer	3	Select 4 4000 level courses		12
EMC 3053	Thermodynamics II	3			
EMC 3063	Mechanical Design I	3			Course Credits
EMC 3163	Process Control: Mechanical	3			
EMC 4002	Design Project I	2	<b>Liberal Studies</b>		
EMC 4003	Turbomachinery	3	<b>Required Credits: 39</b>		
EMC 4022	Design Project II	2	A. Communication		12
EMC 4043	Refrigeration and Air Conditioning System	3	B. Mathematics		3
ERK 3002	Work Placement	2	C. Art and Humanities		6
			D. Social and Behavioral Studies		9
			E. Physical and Biological Sciences		6
			F. Global Studies		3

Total Required Credits	129	Minimum Duration of Study	4
Maximum Duration of Study	6	Program Code	OMMAB
Cost Recovery Program	No	Major Code	ETMEAB

# Bachelor of Applied Science in Mechanical Engineering Technology

The Bachelor of Applied Science (BAS) is a one-year bachelor degree completion for those students who have completed a relevant qualifying HCT Higher Diploma or equivalent. The BAS in Mechanical Engineering

Technology is to prepare students for positions as engineers in the industrial maintenance, manufacturing, fabrication, plant, and processing sectors.

		Course Credits			Course Credits
<b>Engineering Technology Core Courses</b>					
<b>Required Credits: 12</b>					
ETEC N435	Ethics and Professional Practice	4	MECH N435	Heat Transfer	4
ETEC N450	Project Management for Engineering	4	MECH N440	Refrigeration and Air Conditioning Systems	4
MATH N416	Analytical Geometry and Advanced Calculus	4	MECH N445	Power and Desalination	5
			MECH N450	Mechanical Engineering Design	4
<b>Mechanical General Stream Requirements</b>					
<b>Required Credits: 17</b>					
<b>Engineering Technology Concentration Requirement</b>					
Select 1 course					
<b>Required Credits: 4</b>					
ETEC N305	Organizational Behaviour and Management	4	MECH N450	Mechanical Engineering Design	4
ETEC N410	International and UAE Economics	4	MECH N460	Piping, Pipelines and Welding	4
			MECH N465	Industrial Equipment and Machinery	4
<b>Mechanical Design Stream Requirements</b>					
<b>Required Credits: 12</b>					
<b>Mechanical Engineering Core Courses</b>					
<b>Required Credits: 16</b>					
MECH N420	Vibrations in Mechanical Systems	4			
MECH N425	Applied Thermodynamics	4			
MECH N430	Health, Safety & Environment	4			
MECH N449	Independent Work-based Project	4			

Total Required Credits	41	Minimum Duration of Study	1
Maximum Duration of Study	3	Program Code	MECHBP
Cost Recovery Program	No	Major Code	MECH



## Bachelor of Applied Science in Mechatronic Engineering Technology

The Bachelor of Applied Science (BAS) is a one-year bachelor degree completion for those students who have completed a relevant qualifying HCT Higher Diploma or equivalent. The BAS in Mechatronics

Engineering Technology is to prepare students for positions as engineers in the industrial maintenance, manufacturing and plants sectors.

		Course Credits			Course Credits
<b>Engineering Technology Core Courses</b>			<b>Mechatronics Concentration Requirements</b>		
<b>Required Credits: 8</b>			<b>Required Credits: 12</b>		
ETEC N435	Ethics and Professional Practice	4	EMGT N416	Reflective Practice and Research Methods	4
ETEC N450	Project Management for Engineering	4	EMGT N435	Total Quality Management	4
			MTRX N405	Advanced Control Systems	4
			MTRX N410	Embedded Microcontrol and Microprocessor	4
			MTRX N415	Interfacing	4
			MTRX N417	Robotics and Automation	4
			MTRX N420	Systems Design	4
<b>Engineering Technology Concentration Requirement</b>					
<b>Select 1 course</b>					
<b>Required Credits: 4</b>					
ETEC N305	Organizational Behaviour and Management	4			
ETEC N410	International and UAE Economics	4			
			<b>Mechantronics Course Electives</b>		
			See program chair for available course options		
			<b>Required Credits: 24</b>		

<i>Total Required Credits</i>	48	<i>Minimum Duration of Study</i>	1
<i>Maximum Duration of Study</i>	3	<i>Program Code</i>	MTRXBP
<i>Cost Recovery Program</i>	No	<i>Major Code</i>	MTRX

# Diploma in Electrical Technology

The Diploma in Electrical Technology is to prepare students for positions as technician in the industrial and electrical utility sectors. Graduates will be equipped with skills in power generation and distribution, electrical machines, electrical fault finding and computing.

Diploma Electrical Technology Required Courses		Course Credits	Diploma Electrical Technology Optional Courses Select 5 courses from the list below		Course Credits
<b>Required Credits: 62</b>			<b>Required Credits: 20</b>		
ELEC N2106	Electrical Fundamentals	4	ELEC N2150	Power System Layout	4
ELEC N2145	Programmable Logic Controllers	4	ELEC N2155	High Voltage Systems and Equipment	4
ELEC N2260	Electrical Power Distribution	4	ELEC N2160	Motor Controls and Drives	4
ELEC N2265	Electrical Systems and Equipment Maintenance	4	ELEC N2165	Distributed Control	4
ELEC N3131	Electrical Machines	4	ELEC N2170	Power Generation	4
ELEC N3241	Electrical Project	3	ELEC N2175	Power System Protection	4
ELME N1110	Mechanical Workshop Fundamentals	4	MTRX N2110	Sensors and Actuators	4
ENGL N1155	English I	8	MTRX N3205	Control Systems	4
ENGL N1255	English II	8	WORK N2200	Work Experience (4 weeks)	4
ENGL N2155	English III	7			
MATH N2135	Computing and Mathematics	4			
PPDV N1155	Personal and Professional Development I	1			
PPDV N1255	Personal and Professional Development II	1			
PPDV N2155	Personal and Professional Development III	1			
PPDV N2255	Personal and Professional Development IV	1			
WORK N3200	Work Experience (4 weeks)	4			

<i>Total Required Credits</i>	82	<i>Minimum Duration of Study</i>	2
<i>Maximum Duration of Study</i>	4	<i>Program Code</i>	ECALDP
<i>Cost Recovery Program</i>	Yes	<i>Major Code</i>	ECAL