



College: Aviation Sciences
Department: Aircraft Maintenance

B.Sc. Study Plan
Major: Avionics Sciences
Academic Year: 2025-2026

Study Plan (137) Credit hours

Type of Program: **Blended**

Major Type:

Humanities

Scientific/Technical

Science Medical

Teaching Type	Percentage of study plan hours/number	Actual Ratio
Complete Online E-Learning	20% - 10% Maximum	20%
Blended learning (for scientific majors)	50% - 30% Maximum	50%
Face-to-face learning (for scientific majors)	30% Minimum	30%

Note: The learning types of the courses are disseminated at all academic levels in the program



Department Vision

Excellence in the areas of teaching and learning in aircraft maintenance sciences and scientific research locally and regionally.

Department Mission

Preparing distinguished staff in the field of aircraft maintenance sciences equipped with the knowledge, skills and ethics of the profession, to meet the needs of the local and regional community, in accordance with local and international quality criteria.

Program Mission

Preparing academically and professionally qualified specialists in the field of avionic sciences through practical application in specialized laboratories and workshops to meet the needs of the local and regional labor market in accordance with the standards for integrating e-learning.

Educational Program Objectives

1. Providing students with applied and cognitive skills qualifying them in the field of avionics.
2. Preparing specialists capable of working in the field of avionic technologies and sciences locally and regionally.
3. Providing students with the concepts of electrical and electronic systems and control systems related to aviation.
4. Enabling students to detect errors in electrical and electronic systems, control systems, and various maintenance methods.

Educational Program Outcomes

1. Understand theories of operation and control of aircraft engines and various navigation devices, as well as written maintenance information.
2. Carry out maintenance for all electronic systems, according to the relevant technical bulletins.
3. Analyze aviation systems in various practical fields.
4. Acquire effective work skills working in teamworks.
5. Design simulations to solve problems in avionics.



Plan Contents

The study plan for a bachelor's degree consists of a major in Avionics Sciences of (137) credit hours disseminated as follows:

Sequence	Classification	Credit Hours	Percent %
1st	University Requirements	27	19.70%
2nd	College Requirements	18	13.14%
3rd	Program Requirements	92	67.15%
Total		137	100%

Coding System Approved by the University

8	0 2	0	1 1	0 1
College Code	Major Code	Knowledge domain	Course Level	Sequence
	1 Aircraft Maintenance 2 Avionics Sciences			

Knowledge Domain

Domain Code	Knowledge Domain	Credited Hours of Study Plan
0	General Aviation, Advanced English Language, Specialized English language, Aviation Maintenance Management.	12
1	Airframes, aircraft types and performance, Materials and hardware, basics of aerodynamics, flight theory	25
2	Electric circuits Fundamentals, electromagnet, electric Power, automatic control, basics of electronics, digital techniques, electronic devices and systems, systems and signals, digital signal processing, physics, Mathematics, Avionics,	24
3	Airframe Aerodynamics structures and Systems, automated flight systems, Communications and Navigation systems, Propulsion and Indications, Hydraulic and oxygen systems,	18
4	Instrumentation and metering systems, HVAC, fuel and steering systems, information and data systems and cockpit maintenance, maintenance work practices and field training,	31



First: University Requirements: (27) Credit Hours

A. Compulsory Requirements: (18) Credit Hours

Teaching type			Course Number	Course Title	Credit Hours	Prerequisite
Online E-Learning	Blended	Face-to-Face				
✓			5051104	Communication Skills -Arabic Language (1)	3	5051111
✓			5051105	Communication Skills -English Language (1)	3	5051112
✓			5051205	Life skills and social responsibility	3	-
✓			5051206	National Education	3	-
✓			5051305	Leadership and Creativity	3	-
✓			5051308	Military Sciences	3	-
✓			5054209	Volunteering and Community Development	0	-
Total					18	

B. Elective Requirements: (9) Credit Hours from the following list:

Teaching type			Course Number	Course Title	Credit Hours	Prerequisite
Online E-Learning	Blended	Face-to-Face				
✓			5052106	Communication Skills -Arabic Language (2)	3	5501104
✓			5052107	Communication Skills -English Language (2)	3	5501105
✓			5052103	Principles of Psychology	3	-
✓			5052104	Human Rights	3	-
✓			5053101	Islamic Culture	3	-
✓			5053105	Quds and Hashemite Custodianship	3	
✓			5054103	Computer Skills	3	5051113
✓			5054104	Environment and Community	3	-
✓			5054106	Health and Community	3	-
✓			5054108	Introduction to sustainable development	3	-
✓			5054121	Introduction to Artificial Intelligence	3	-
✓			50541308	Foreign Language	3	-
✓			50541309	Digital Culture	3	5051113
Total					9	

**Second: College Requirements: (18) Credit Hours****A. College Compulsory Requirements: (18) Credit Hours**

Teaching type			Course Number	Course Title	Credit Hours	Prerequisite	Corequisite
Online E-Learning	Blended	Face-to-Face					
	✓		80102203	Aviation Maintenance Management	3	-	-
	✓		80111207	Aviation Law and Air Safety	3	80211102	-
	✓		80201206	Advanced English Language	3		-
	✓		80112109	Specialized English language	3	80201206	-
	✓		80202109	Computer and AI for Aviation Students	3	-	-
	✓		80211102	Introduction to Theory of Flight	3	-	-
Total					18		

Third: Program Requirements (92) Credit Hours

Teaching type			Course Number	Course Title	Credit Hours*	Theoretical	Practical	Prerequisite	Corequisite
Online E-Learning	Blended	Face-to-Face							
	✓		80211103	Aircraft Types	2	2	-	-	-
	✓		80211205	Human factors	3	3	-	-	-
	✓		80211207	Aviation Legislation and Cyber Security	3	3	-	-	-
		✓	80212104	Fundamentals of Aerodynamics and its Applications	3	3	-	80221208	-
	✓		80212201	Materials and Hardware	2	2	-	80221208	-
		✓	80212202	Materials and Hardware Practical	1	-	3	-	80212201
		✓	80212205	Fundamentals of Aerodynamics and its Practical Applications	1	-	3	-	80212104
	✓		80221107	Mathematic and Algebra	2	2	-	-	-
	✓		80221208	Physics of Aviation	3	3	-	-	-
	✓		80222102	Electrical Fundamentals and its Applications (1)	3	3	-	80221208	-
	✓		80222201	Electrical Fundamentals and its Applications (2)	3	3	-	80222102	
		✓	80222203	Electrical Fundamentals and its Practical Applications	1	-	3	-	80222201
	✓		80222205	Avionics (1)	3	3	-	80222102	-
	✓		80222207	Digital Techniques & Electronic Instrument Systems (1)	3	3	-	80222102	-



Teaching type			Course Number	Course Title	Credit Hours*	Theoretical	Practical	Prerequisite	Corequisite
Online E-Learning	Blended	Face-to-Face							
		✓	80223105	Avionics Practical	1		3	-	80222205
	✓		80223106	Avionics (2)	3	3	-	80222205	-
		✓	80223109	Digital Technologies Electronic, Devices and Systems - Practical	1	-	3	-	80222207
	✓		80223110	Digital Techniques & Electronic Instrument Systems (2)	3	3	-	80222207	-
		✓	80223205	Electrical Power Systems	3	3	-	80222207	-
		✓	80223206	Electrical Power Systems- Practical	1	-	3	-	80223205
	✓		80232101	Airframe Dynamics	3	3	-	80212104	-
		✓	80232102	Airframe Dynamics -Practical	1	-	3	-	80232101
		✓	80233108	Autopilot Systems - Practical	1	-	3	-	80233111
		✓	80233110	Communication and Navigation Systems- Practical	1	-	3	-	80233113
	✓		80233111	Autopilot Systems	3	3	-	-	80232101
	✓		80233113	Communication and Navigation Systems	3	3	-	-	80233111
		✓	80233209	Hydraulic and Oxygen Systems	3	3	-	80243207	-
		✓	80233210	Hydraulic and Oxygen Systems- Practical	1	-	3	-	80233209
	✓		80234113	Aircraft Engines	3	3	-	80211103	-
		✓	80234114	Aircraft Engines -Practical	1	-	3	-	80234113
		✓	80243111	Measuring and Gaging Systems	3	3	-	80222207	-
		✓	80243112	Measuring and Gaging Systems- Practical	1	-	3	-	80243111
		✓	80243207	HVAC, Fuel and Steering Systems	3	3	-	-	80223205
		✓	80243208	HVAC, Fuel and Steering Systems - Practical	1	-	3	-	80243207
	✓		80244101	Maintenance Practices (1)	3	3	-	-	80222203
		✓	80244102	Maintenance Practices (1)- Practical	1	-	3	-	80244101
		✓	80244103	Maintenance Practices (2)	3	3	-	-	80244101
		✓	80244111	Information and Data Systems and Maintenance in the Cockpit	3	3	-	80243111	-
		✓	80244112	Information and Data Systems and Maintenance in the Cockpit- Practical	1	-	3	-	80244111
		✓	80244204	Maintenance Practices (2)- Practical	1	-	3	-	80244103



Teaching type			Course Number	Course Title	Credit Hours*	Theoretical	Practical	Prerequisite	Corequisite
Online E-Learning	Blended	Face-to-Face							
		✓	80244207	Field Practical Training	7	-	-	Completing 90 Credit hours	-
Total					92				

Remedial course: (0) Credit Hours

Learning style			Course No.	Course Title	Cr. Hr.	Prerequisite
F	B	E				
		✓	5051111	Remedial Course in Arabic	3	-
		✓	5051112	Remedial Course in English	3	-
		✓	5051113	Remedial Course in Computer Science	3	-
				Total	0	



Guidance plan

First Year

First Semester

Course No.	Course Title	Type of Learning	Credit Hours*	Prerequisite	Corequisite
80221107	Mathematic and Algebra	B	2	-	-
80211103	Aircraft Types	B	2	-	-
80211102	Introduction to Theory of Flight	B	3	-	-
-	University Requirement	0	3	-	-
-	University Requirement	0	3	-	-
-	University Requirement	0	3	-	-
Total			16		

Second Semester

Course No.	Course Title	Type of Learning	Credit Hours*	Prerequisite	Corequisite
80201206	Advanced English Language	B	3		-
80111207	Aviation Law and Air Safety	B	3	80211102	-
80211205	Human Factors	B	3	-	-
80221208	Physics of Aviation	B	3	-	-
80211207	Aviation Legislation and Cyber Security	B	3	-	-
50511308	Military Science	0	3	-	-
Total			18		



Second Year

First Semester

Course No.	Course Title	Type of Learning	Credit Hours*	Prerequisite	Corequisite
80102203	Aviation Maintenance Management	B	3	-	-
80202109	Computer and AI for Aviation Students	B	3		-
80212104	Fundamentals Aerodynamics and its applications	F	3	80121208	-
80102205	Fundamentals of Aerodynamics and its Practical Applications	F	1	-	80212104
80222102	Electrical Fundamentals and its applications (1)	B	3	80221208	-
80112109	Specialized English language	B	3	80201206	
80212201	Materials and hardware	F	2	80221208	-
Total			18		

Second Semester

Course No.	Course Title	Type of Learning	Credit Hours*	Prerequisite	Corequisite
80232101	Airframe Dynamics	B	3	80212104	-
80232102	Airframe Dynamics -Practical	F	1	-	80232101
80222201	Electrical Fundamentals and its applications (2)	B	3	80221208	-
80222203	Electrical Fundamentals and its Practical Applications	F	1	-	80222201
80222205	Avionics (1)	B	3	80222102	-
80222207	Digital Techniques & Electronic Instrument Systems (1)	B	3	80222102	-
80212202	Materials and hardware Practical	F	1	-	80212201
	University Requirement	0	3	-	-
Total			18		



Third Year

First Semester

Course No.	Course Title	Type of Learning	Credit Hours*	Prerequisite	Corequisite
80223106	Avionics (2)	B	3	80222205	-
80223105	Avionics - Practical	F	1	-	80222205
80223110	Digital Techniques & Electronic Instrument Systems (2)	B	3	8022207	-
80223109	Digital Techniques & Electronic Instrument Systems - Practical	F	1	-	8022207
80233111	Autopilot Systems	B	3	-	80232101
80233108	Autopilot systems - Practical	F	1	-	80233111
80233113	Communication and Navigation Systems	F	3	-	80233111
80233110	Communication and Navigation Systems- practical	F	1	-	80233113
Total			16		

Second Semester

Course No.	Course Title	Type of Learning	Credit Hours*	Prerequisite	Corequisite
80243111	Measuring and gaging systems	F	3	80222207	-
80243112	Measuring and gaging systems-Practical	F	1	-	80243111
80223205	Electrical Power Systems	F	3	80222207	-
80223206	Electrical Power Systems- Practical	F	1		80223205
80243207	HVAC, fuel and steering systems	F	3	-	80223205
80243208	HVAC, fuel and steering systems - practical	F	1	-	80243207
80233209	hydraulic and oxygen systems	F	3	80233207	-
80233210	Hydraulic and oxygen systems- practical	F	1	-	80233209
Total			16		



Fourth Year

First Semester

Course No.	Course Title	Type of Learning	Credit Hours*	Prerequisite	Corequisite
80244111	Information and data systems and maintenance in the cockpit	F	3	80243111	-
80244112	Information and data systems and maintenance in the cockpit- practical	F	1	-	80244111
80234113	Aircraft Engines	B	3	80211103	-
80234114	Aircraft Engines -Practical	F	1	-	80234113
80244101	Maintenance Practices (1)	B	3	-	80222203
80244102	Maintenance Practices (1)- Practical	F	1	-	80244101
80244103	Maintenance Practices (2)	B	3	-	80244101
	University requirement	0	3		
Total			18		

Second Semester

Course No.	Course Title	Type of Learning	Credit Hours*	Prerequisite	Corequisite
80244204	Maintenance Practices (2)- Practical	F	1	-	80244103
80244207	On Job Training (OJT) (330 Field Work Hours)	F	7	Completing 90 Credit hours	-
	University requirement	0	3	-	-
	University requirement	0	3	-	-
	University requirement	0	3	-	-
Total			17		

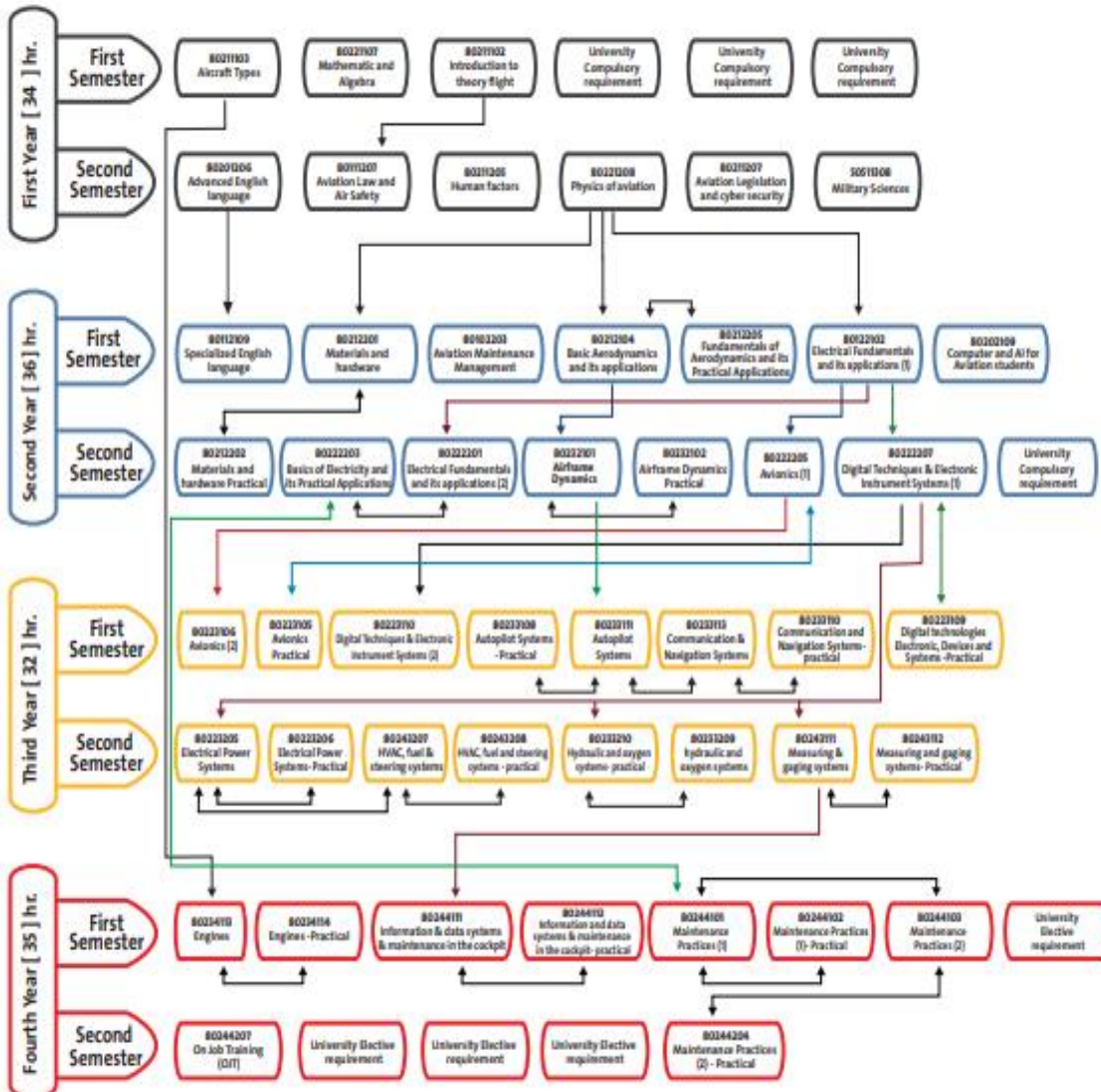
Courses Tree



Courses Tree

College: Aviation Sciences
Major: Avionics

Department: Aircraft Maintenance
Issue Date: 2024/2025



F566-1, Rev. a
Ref.: Quality Assurance Council Session (08/2021-2022), Decision No.: 01, Date: 21/05/2022



F026-1, Rev. d
Ref.: Deans' Council Session (14/2025-2026), Decision No.: 02, Date 09/12/2025





Course Description

80102203 Aviation Maintenance Management (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: None), Type of Learning: Blended

Recognizing topics related to aviation maintenance management such as the development of aircraft maintenance programs, aviation certification requirements, maintenance documentation, technical bulletins, and technical services.

80111207 Aviation Law and Air Safety (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80211102), Type of Learning: Blended

Studying international organizations and conventions, aircraft validity, aircraft registration marks, cabin crew licenses, air laws, air accident investigations, search and rescue operations.

80201206 Advanced English Language (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite :None), Type of Learning: Blended

This course is designed to enhance students' proficiency in the English language, focusing on the four essential skills: listening, speaking, reading, and writing. Emphasis is also placed on vocabulary development and accurate pronunciation. By the end of the course, students are expected to demonstrate greater fluency, accuracy, and confidence in using English in both academic and everyday contexts

80112109 Specialized English Language (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80201206), Type of Learning: Blended

This course includes many topics related to aviation aimed at improving the technical language of the student, such as manufacturing techniques, control systems, safety, and electrical systems. Preparing students for technical writing and preparing reports for regulatory bodies related to aircraft.

80202109 Computer and AI for Aviation Students (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: None), Type of Learning: Blended

This course covers fundamental concepts of programming in a selected language, including programming basics such as variables, data types, control statements, arrays, functions, and pointers. It also includes an introduction to MATLAB.

80211102 Introduction to Flight of Theory (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: None), Type of Learning: Face to Face

Identifying and studying the four forces affecting the aircraft, Bernoulli's principle, lift and Newton's third law, the axes of the aircraft, in addition to identifying and working principle of control surfaces in the aircraft and its impact on the performance of the aircraft.

80211103 Aircraft Types (2 Cr. Hrs., Theoretical: 2, Practical: 0, Prerequisite: None), Type of Learning: Blended

Recognizing topics related to the types of aircraft and their performance, such as single-engine and twin-engine, and determine their performance during all phases of the flight.





80211205 Human factors (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: None), Type of Learning: Blended
Understanding human activity and the interaction of individuals with the workplace to explore the implications of the human factor and the error of work, consider the role of work implementation methods and procedures and consider safety policy and communication methods

80211207 Aviation Legislation and Cyber Security (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: None), Type of Learning: Blended

Understanding all elements of EASA aviation regulations applicable to the awareness needs of Part 66, including the structure of the rules and the role of the International Civil Aviation Organization (ICAO) and national authorities. Providing a comprehensive understanding of the aviation regulations relevant to Part 66, focusing on certifications and technical licenses, aircraft airworthiness, maintenance of light aircraft, hazardous maintenance tasks, inspection and auditing procedures, guidance on aircraft airworthiness, maintenance publications, maintenance information from manufacturers, as well as developments and repairs. Additionally, addressing cybersecurity in aviation, methods for preventing cyberattacks, backup operations and information security, and the applications of artificial intelligence in combating cyber threats.

80212104 Fundamentals of Aerodynamics and its Applications (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80221208), Type of Learning: Face to Face

Recognizing the different layers of the atmosphere and related variables, as well as aerodynamics and engineering definitions, the aircraft's resistance to the air, the increase in altitude, the forms of the flight control wing, the forces affecting the aircraft during flight, the flight in rotational modes, the aircraft's equilibrium conditions.

80212201 Materials and hardware (2 Cr. Hrs., Theoretical: 2, Practical: 0, Prerequisite: 80221208), Type of Learning: Face to Face

Recognizing aircraft metal materials, which include materials that contain mainly iron, that do not contain iron mainly in addition to plastic and flexible materials, composite materials, wood and wooden structures, fabric sheaths as well as fastening tools, used in aircraft.

80212202 Materials and hardware -Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80212201), Type of Learning: Face to Face

Implementing the following practical applications: assembling metal sheets using different rivets, distinguishing between different types of rust, removing rust manually, and using many different types of accurate measuring tools such as Vernier.

80212205 Fundamentals of aerodynamics and its Applications-practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Prerequisite: 80212104), Type of Learning: Face to Face

The student uses the air flow device and applies experiments related to the effect of air resistance on the aerodynamic shape, applies Bernoulli's rule to the aerodynamic shape, uses a fluid pressure gauge, recognizes the



locations of the main control surfaces on the aircraft, and operates them from the cockpit, and operates the three main rudders in addition to the landing auxiliary rudders and rotation.

80221107 Mathematic and Algebra (2 Cr. Hrs., Theoretical: 2, Practical: 0, Prerequisite: None), Type of Learning: Blended

This course covers elementary algebra: simplifying expressions, factoring, and solving/graphing linear, quadratic, and simultaneous equations; exponents, logarithms, scientific notation, and number systems. Brief review of arithmetic (fractions, decimals, percentages), basic data analysis (mean, median, mode, range), angles/conversions, area/volume, and Cartesian/polar coordinates and graphing.

80221208 Physics of aviation (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: None), Type of Learning: Face to Face

This course covers the basic units of matter and mechanics, both static and kinetic, dynamic, fluid dynamics, and thermodynamics, in addition to optics, sound and wave motion, and physical phenomena related to aviation sciences.

80222102 Electrical Fundamentals and its applications (1) (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80221208), Type of Learning: Face to Face

Recognizing the static electricity, electrostatic charge distribution and conduction, Coulomb's theory and electrical conductivity in liquids and solids, electrical terms and contain electrical energy, electric charges, electric current, electrical resistance, electrical laws, electricity generation, direct current sources, direct current circuits resistance / resistor, power, capacitance / capacitor.

80222202 Electrical Fundamentals and its applications (2) (3 Cr. Hrs., Theoretical: 2, Practical: 0, Prerequisite: 80222102), Type of Learning: Blended

Recognizing magnetism, inductance / inductor, DC motors and generators, including working principle, installation, types of DC motors in reverse, rotating speed of the motor, AC theory, transformers, including working principle, transformer installation, properties of the metal core, transformer coils, types of transformers, filters, types of alternating current generators, types of alternating current motors and related electrical circuits.

80222203 Electrical Fundamentals and its Practical Applications (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80222202), Type of Learning: Face to Face

Implementation of practical applications such as direct and alternating current voltage measurement, direct and alternating current measurement, resistance measurement, connecting loads in parallel, connecting loads in series, assembling and disassembling direct current generators, checking capacitors and coils, electrical transformers and their types in practice and using appropriate software.

80222205 Avionics (1) (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80222102), Type of Learning: Blended

This course covers diode characteristics and properties, including functional testing and applications. It explores the PN junction in semiconductors, diode parameters, and a detailed examination of the operation and



characteristics of various types of diodes. Additionally, the course addresses transistor characteristics, properties, testing, types, and applications.

80223106 Avionics (2) (2 Cr. Hrs., Theoretical: 2, Practical: 0, Prerequisite: 80222205), Type of Learning: Blended

This course covers the description, function, and operation of logic circuits and linear circuits, including operational amplifiers. It examines the advantages and disadvantages of positive and negative feedback. Students will learn about printed circuit boards (PCBs) and develop an understanding of key terms such as open loop, closed loop, follow-up, servomechanism, analog, transducer, null, damping, feedback, and dead band. The course also explores the construction, operation, and use of various types of synchro systems and their components. Additionally, it addresses servomechanism defects, the reversal of synchro leads, and the phenomenon of hunting.

80223105 Avionics -Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80222205), Type of Learning: Face to Face

Examining and installing basic electronic components and recognizes the nature of their work, building basic electronic circuits using electronic components such as diode and transistor and their applications in various electrical systems. In addition to integrated electronic circuits ICs.

80222207 Digital Techniques & Electronic Instrument Systems (I) (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80222102), Type of Learning: Blended

This course covers electronic instrument systems, numbering systems, data conversion, data buses, logic circuits, basic computer structures, microprocessors, and integrated circuits.

80223110 Digital Techniques & Electronic Instrument Systems (2) (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite 80222207), Type of Learning: Blended

This course covers the following topics: Multiplexing, Fiber Optics, Electronic Displays, Electrostatic Sensitive Devices, Software Management Control, Electromagnetic Environment, and Typical Electronic and Digital Aircraft Systems.

80223109 Digital Techniques & Electronic Instrument Systems Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80222207), Type of Learning: Face to Face

Examining and installing basic electronic components and learning their nature, and builds basic digital electronic circuits using electronic components such as meters, seven-segment displays and integrated circuits.

80232101 Airframe Dynamics (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80212104), Type of Learning: Face to Face

This course covers aerodynamic systems and engineering principles, including aircraft resistance to air, altitude effects, wing shapes, flight control, and the forces impacting the aircraft during flight. Topics also include flight in rotational conditions and the equilibrium states of aircraft. Additionally, students will learn about control systems on various aircraft surfaces.



80232102 Airframe Dynamics- Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80232101), Type of Learning: Face to Face

The course implements the following practical applications: airflow patterns around the aerodynamic shape, description and operation of the tail and auxiliary rudder, control system for the main and auxiliary rudders, aircraft doors, operational examination of the retarder surface system and its effect on air flow, identifies the balance of the wing surface, examines the wing of the aircraft and its components.

80233111 Autopilot Systems (3 Cr. Hrs., Theoretical: 3, Practical: 0, Corequisite: 80232101), Type of Learning: Face to Face

The course covers the basics of automated flight control; command signal processing; its working methods; yaw dampers; stability-increasing systems in addition to automatic cut-off control and autopilot navigation assistance interface; Automatic throttle control and automatic landing systems.

80233108 Autopilot Systems-Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80233111), Type of Learning: Face to Face

The following practical applications implement automated flight controls; command signal processing; its working methods; yaw dampers systems increase stability automatic trim control interface navigation assistance autopilot; Automatic throttle control Automatic landing systems.

80233113 Communication and Navigational Systems (3 Cr. Hrs., Theoretical: 3, Practical: 0, Corequisite: 80233111), Type of Learning: Face to Face

Recognizing the working principles of VHF and HF communication systems, audio systems, emergency locator transmitters, cockpit voice recorder, Very High Frequency VHF Omnidirectional Range (VOR), Automatic Direction Finding (ADF), Instrument Landing Systems (ILS), Microwave Landing System (MLS), Flight Management Systems (FMS), Distance Measurement Equipment (DME) and Global Positioning System (GPS).

80233110 Communication and Navigational Systems-Practical (1 Cr. Hr., Theoretical: 0, Practical:3, Corequisite 80233113), Type of Learning: Face to Face

The student is trained in all navigation systems (HF, VHF, VOR ADF, ILS, MLS, DME and GPS) in terms of components, working methods and maintenance.

80243111 Measuring and gaging systems (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite 80222207), Type of Learning: Face to Face

Recognizes pneumatic systems, direct reading pressure and temperature gauges, fuel quantity indication systems, gyroscopic system indications, synthetic horizontal slip indicators, directional gyroscopes, flight data recording systems, electronic flight instrument warnings, and central warning panels.

80243112 Measuring and gaging systems- Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80243111), Type of Learning: Face to Face

Practically performs and recognizes the object components of all relevant systems with respect to fuel, gyroscope, temperature and other measurement systems.



80223205 Electrical Power Systems (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80222207), Type of Learning: Face to Face

Recognizing the types of electrical energy, batteries, DC and AC generating devices, various voltage regulators, constant speed drive unit, generator and integrated motor, brushless generator, fixed frequency and variable speed generator, emergency power generator, transformer regulators, inverters, as well as generators external ground energy and its distribution, real load distribution mechanism, reaction and fault protection, in addition to control devices and cockpit indicator.

80223206 Electrical Power Systems-Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80223205), Type of Learning: Face to Face

This course includes practical applications such as disassembling and installing the battery, as well as dismantling and installing the electric coil protection feeder and battery temperature sensor. Students will also learn to charge and discharge the battery, check its condition and components, and recognize the warning and signal systems. Additionally, the curriculum covers runway and landing lights, ice test lighting, anti-collision lights, position and tilt lighting, cockpit dome lighting, cockpit service lighting, and indirect lighting.

80243207 HVAC, fuel and steering systems (3 Cr. Hrs., Theoretical: 3, Practical: 0, Corequisite: 80223205), Type of Learning: Face to Face

This course covers air supply systems, air conditioning and refrigeration, and cabin pressure control, along with safety and alarm systems. It also includes the study of interior equipment and supplies, emergency equipment, and emergency evacuation procedures. Additional topics encompass cockpit design, seat belts and shoulder harnesses, in-cabin entertainment systems, and maintenance applications. Furthermore, the course addresses fire detection and suppression systems, flight control surfaces, and fuel systems.

80243208 HVAC, fuel and steering systems -Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80243207), Type of Learning: Face to Face

This course involves practical applications, including the dismantling and assembly of components for air conditioning and refrigeration systems, as well as aircraft fuel and control systems. Participants will check fire extinguisher valves, assess internal equipment, inspect seat belt pulleys, and operate fire sensor systems. Additionally, the course includes the examination of various valves to ensure proper functioning.

80233209 Hydraulics and Oxygen Systems (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80243207), Type of Learning: Face to Face

This course covers fluid pressure theory and the design of on-board fluid pressure systems, including hydraulic oil and hydraulic pumps. Topics include emergency pressure generation, disconnection of fluid pressure systems, and alarm and warning systems. Additionally, the course addresses snow prevention and rain removal systems, safe and non-potable water use systems, the aircraft landing gear system, brakes, the anti-skid system, and the oxygen system and its applications for crew and passengers. Safety and maintenance standards will also be emphasized, along with the air intake system and high and low gas pressure systems, with particular attention to related electrical and electronic circuits.

80233210 Hydraulics and Oxygen Systems -Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80233209), Type of Learning: Face to Face

This course includes practical applications such as dismantling and installing fluid pressure control switches, hydraulic pumps, pressure sensors, rain wipers, wheels, brakes, oxygen cylinders, and oxygen flow regulator valves.



Students will also learn to fill hydraulic tanks and operate the fluid pressure system virtually on the aircraft. Additional activities include checking the aircraft landing system, the anti-skid system, the ground flight guidance system, the pressure storage system, and the aircraft acceleration system, as well as inspecting related electrical and electronic circuits.

80244111 Information and data systems and maintenance in the cockpit (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 80243111), Type of Learning: Face to Face

Recognizing the communication data system, the cab network system, and the basic cab systems; on a leisure trip; External connections Comprehensive memory system for cabin; Cabin Monitoring Systems Various Cab Systems.

80234112 Information and data systems and maintenance in the cockpit -Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80234111), Type of Learning: Face to Face

This course aims to familiarize students with various aircraft information systems, including the general information system, flight deck information system, maintenance information system, and cabin information system. Students will explore the functions and integration of these systems, gaining a comprehensive understanding of their roles in aircraft operation and maintenance.

80234113 Aircraft Engines (3 Cr. Hrs., Theoretical: 3, Practical: 0, Prerequisite: 8021103), Type of Learning: Face to Face

Understanding the contents of the principle of jet propulsion and the four main types of turbine engines. The principles and operation of engine identification systems for engine monitoring are presented in detail. , design of air intake, types and factors affecting them, types of axial air compressors, combustion section: types and methods of cooling the combustion chamber, turbine section: construction and types of turbines, methods of cooling and installation of turbine blades, functions and construction of exhaust, sound dampers, thrust reflectors, bearings and agencies, Lubricants, sources of supply, lubrication, properties of oils, oil additives, types of oils, international fuel specifications, aviation fuel, refueling / unloading of fuel and fuel tank, basic requirements for contaminated fuel lubrication systems and electrical and electronic circuits for turbochargers.

80234114 Engines-Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80234113), Type of Learning: Face to Face

Executing the following practical applications: checking and installing the anti-freeze system, checking the combustion chamber, engine cover and turbines, checking and cleaning the exhaust and bearings, removing and installing filters, dismantling and installing the fuel pump and its associated pipes, as well as various engine control circuits.

80244101 Maintenance Practices (I) (3 Cr. Hrs., Theoretical: 3, Practical: 0, Corequisite: 8022203), Type of Learning: Blended

Recognizing the safety procedures on the aircraft and the operator, as well as practical exercises in the workshops, equipment, hand tools, electrical devices, precise measuring tools, tools and methods of lubrication and lubrication, electrical examination equipment, electronic examination equipment, engineering drawings, diagrams and standards, display tools used for computer and tools. The different widths, Air Transport Association specifications, common standards in the field of aviation, permitting and conformity, measurements for making holes, rows and standards for compliance with regulations, arcing and torsion, electrical connection system, continuity and insulation tests, use of pressing tools, examination of fixed parts using the pressing method, installation and removal of the connecting pin, Filament wires, types of wires and identification methods, methods of wire protection,



permittivity in standards for testing wires and faults, systems for testing electrical wires and connections. In addition to all control systems associated with these systems.

80244102 Maintenance Practices (1)-Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80244101), Type of Learning: Face to Face

This course includes practical applications such as examining rudder wires, removing buckles using both electrical and manual tools, and utilizing tools to check voltage, current, and electrical resistance. Participants will measure external dimensions with precise measuring instruments and examine braking systems for wear limits, along with related electrical and electronic control systems.

80244103 Maintenance Practices (2) (3 Cr. Hrs., Theoretical: 3, Practical: 0, Corequisite: 80244101), Type of Learning: Blended

This course focuses on recognizing different types of rivets and their applications, as well as special fasteners, tubes, and hoses. Participants will learn to bend and expand the ends of aircraft tubes, and engage in both theoretical and practical examinations of these components. The course includes instruction on pipe installation and fixation, spring treatment, cleaning and testing of bearings, and storage procedures. Additional topics cover the principles of transmissions, control cables, and the mechanism for clamping the ends of connections. Students will also conduct theoretical and practical examinations of approved control cables and devices, explore various wiring systems, and gain experience with material handling, sheet metal work, and composite materials.

80244104 Maintenance Practices (2)-Practical (1 Cr. Hr., Theoretical: 0, Practical: 3, Corequisite: 80244103), Type of Learning: Face to Face

This course involves executing practical applications such as dismantling, repairing, installing, and inspecting various types of fasteners, tubes, pulleys, control wires, and control systems. Participants will gain hands-on experience with these components, enhancing their understanding of their functions and maintenance.

80244207 Field Practical Training (7 Cr. Hrs., Theoretical: 0, Practical: 330 working hours in the field, Prerequisite: Completing 90 Credit hours), Type of Learning: Face to Face

It includes all the practical activities that take place in the aircraft maintenance hangar related to the aircraft's electrical and electronic systems, navigation and communication. As well as devices and workshops, such as aircraft lifting, ground handling, aircraft systems inspection, functional operations, maintenance and repair, troubleshooting, parts replacement and testing using all required special tools and equipment, ground floor and training manuals, in addition to complying with all safety requirements while working on all aircraft components and each of the following systems:

- Electrical and electronic systems.
- Digital tools systems.
- Engine systems.
- Pneumatic and hydraulic systems.
- Fuel systems in the aircraft.
- Flight control systems.
- Autopilot systems
- Air Navigation Systems
- Environmental systems.
- Repair of the structure and design of the aircraft.