AIRCRAFT TECHNOLOGY PROGRAMME MECHANICS BRANCH COURSE CATALOG

Academic Unit	Department of Aeronautics
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Aircraft Technology, graduates become qualified to work as aircraft mechanics.
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from a program, students are required to complete successfully the compulsory and elective courses which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Profile of the Program	The scope of this program is to train the qualified maintenance technicians who have the basic skills and knowledge identified by the national standards in performing the maintenance and repair of aircraft, helicopter, unmanned air vehicle, ammunition, and ground support equipment; who are self-improving and can use the theoretical information for the practical purposes by monitoring the developing aviation industry , initiative-takers, know problem-solving methods, can use the common aviation terminology in the joint operations performed with allied countries, can think in positive and scientific way in line with the objects and requirements of the Turkish Air Force, continuously learning, and are capable of reaching the information, that have the developed leadership properties, in peace and warfare conditions.
Professional Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of electrical technology with the competence to realize and develop the technical applications required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program Learning Outcomes	1. To be able to explain the core principles in Materials, Mechanics and Thermodynamics and to make inferences about relations among concepts 2. To solve problems using basic concepts of Fluid Mechanics, hydrostatic, Continuity and Bernoulli equations 3. To solve problems using the major principles of Physics of the Atmosphere, Aerodynamics, Theory of Flight, Flight Stability and Dynamics. 4. To be able to read and draw technical drawing 5. To create hydraulic and pneumatic circuits, to recognize circuit units and to explain the areas of usage of pneumatic circuit units in aircraft 6. To be able to explain the theories of electric, electronic terminology

	and to solve problems using the major principles, to make basic measurements on circuits installed 7. To be able to explain the principles of aircraft avionics systems 8. To be able to describe the properties of materials used in aircraft and the types of corrosion that occur. 9. To be able to explain basically the operating principles of machines and equipment used in aircraft 10. To be able to perform the basic aircraft maintenance practices with the help of technical Drawings and technical orders, to make safety precautions in workshop a principle, to perform maintenance and do inspection on measuring devices and tool kits utilizing the knowledge of these devices and kits. 11. To be able to make inferences about intersystem relations in aircraft fuselage 12. To be able to explain the operating principles of aircraft engines 13. To be able to explain the operating principles of Propeller on aircraft 14. To have basic knowledge about national and international aviation authorities, regulation of maintenance approval staff and maintenance organization authorization 15. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 16. To have basic knowledge of constitutional rights, freedoms and duties and to understand the disciplinary rules military personnel are liable to 17. To have basic knowledge of English 18. To have basic knowledge of mathematics and physics and to speak Turkish effectively 19. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk's principles and revolutions and National War of Independence 20. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Atatürk's Principles and the History of Turkish Revolution-1	Required	2	2	0	2	2
Turkish Language-1	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Human Factors in Aviation	Required	2	2	0	2	2
Computer Applications in Microsoft Office	Required	3	2	1	3	4
TOTAL:		**30**	**26**	**4**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Physics-II	Required	2	1	1	2	2
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Turkish Language-2	Required	2	2	0	2	2
English Language-II	Required	8	6	2	7	7
Technical Aviation English-I	Required	4	2	2	3	3
Technical Drawing	Required	2	1	1	2	2
Measurement Techniques	Required	2	1	1	2	2
Basic Aerodynamics	Required	3	2	1	3	4
Thermodynamics	Required	2	1	1	2	3
Fluid Mechanics	Required	2	1	1	2	3
	TOTAL:	**29**	**19**	**10**	**27**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
Technical Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Basic Electrics-Electronics	Required	3	2	1	3	3
Hydraulic and Pneumatic Circuits	Required	3	1	2	2	3
Aircraft Materials	Required	3	1	2	2	4
Piston Engines	Required	2	1	1	2	2
Aircraft Hardware	Required	2	1	1	2	2
Aircraft Structures and Systems-I	Required	4	3	1	4	4
	TOTAL:	**31**	**19**	**12**	**27**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
Technical Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Aviation Legislation	Required	1	1	0	1	1
Mechanic Maintenance Practices	Required	6	1	5	4	6
Gas Turbine Engines	Required	3	2	1	3	4
Aircraft Structures and Systems-II	Required	3	2	1	3	3
Aircraft Electronic Systems	Required	2	1	1	2	2
Propellers	Required	2	1	1	2	2
	TOTAL:	**31**	**18**	**13**	**27**	**30**

COURSE DESCRIPTIONS

Technical Drawing: The objectives of this course are to comprehend the basic principles of technical drawings, perspective drawing, standard machine elements, removable/non removable fasteners, shaft, gear, springs, bearings, machine parts and tolerances, surface symbols, assembly drawing.

Measurement Techniques: The objectives of this course are to comprehend Aircraft Parts maintenance, repair and calibration measuring devices' specifications and to achieve the ability of applying the basic theorems and the methods of Pressure, Heat, Flow and Length measurements.

Basic Aerodynamics: The objectives of this course are to acquire the ability of analyzing atmospheric physics, Aerodynamics, Theory of Flight, Flight Stability and Dynamics.

Thermodynamics: The objectives of this course are to comprehend Basics of thermodynamics: Temperature, pressure, volume, mass, energy types. Types of heat transfer, intensive and extensive properties of matter, ideal gas laws, first law and second law applications to the closed and open systems.

Fluid Mechanics: The objectives of this course are to comprehend Basic concepts of fluids: Density, specific volume, relative density, specific gravity, specific energy, surface tension and to achieve the ability of problem solving about Fluid Statics: Pressure, types of manometers. Fluid Dynamics: Continuity equation, compressible flows, incompressible flows, volumetric flow rate, mass flow rate and Bernoulli equation.

Basic Electrics-Electronics: The objectives of this course are to comprehend Electron Theory, Static Electricity and Conduction, Electrical Terminology, Generation of Electricity, DC Sources of Electricity, DC Circuits, Resistance/Resistor, Power, Capacitance/Capacitor, Inductance/Inductor, Magnetism, Magnetic induction, AC Theory, AC Circuits, Transformers, motor and generators.

Hydraulic and Pneumatic Circuits: The objectives of this course are to comprehend Basics of hydraulics and pneumatics and to achieve the ability of analyzing Operating principles of circuit elements: tank, pump, valve, cylinder etc.

Aircraft Materials: The objectives of this course are to comprehend Aircraft material types, mechanics and strength of materials, heat treatments of materials, definition and types of corrosion.

Piston Engines: The objectives of this course are to comprehend fundamentals of piston engines, Engine Performance, Engine Construction, Engine Fuel Systems, Starting and Ignition Systems, Induction, Exhaust and Cooling Systems, Supercharging/Turbocharging, Lubricants and Fuels, Lubrication Systems, Engine Indication Systems, Powerplant Installation, Engine Monitoring and Ground Operation, Engine Storage and Preservation.

Aircraft Hardware: The objectives of this course are to comprehend Aircraft fasteners, types of piping, pipe coupling, spring and bearing; interpret transmission and recognize control cable, cable construction and cable fittings.

Aircraft Structures and Systems-I: The objectives of this course are to comprehend Theory of flight, High Speed Flight, Airframe Structures-General Concepts, Airframe Structures, Equipment and Furnishings, Oxygen Air Conditioning and Cabin Pressurization, Water/Waste, Systems.

Aviation Legislation: The objectives of this course are to comprehend Role of the International Civil Aviation Organization, Role of EASA, Role of Federal Aviation Administration, Role of Directorate General Of Civil Aviation (DGCA), Certifying Staff-Maintenance DGCA 66-01 (EASA Part-66), Approved Maintenance Organizations DGCA 145-01 (EASA Part-145).

Mechanic Maintenance Practices: The objectives of this course are to achieve the ability of analyzing Safety precautions-aircraft and workshop, workshop practies, tools, avionic general test equipment, engineering drawings, diagrams and standards, electrical cables and connectors, riveting, pipes and hoses, springs, bearings, transmissions, control cables, aircraft weight and balance, aircraft handling and storage, disassembly, inspection, repair and assembly techniques and maintenance procedures.

Gas Turbine Engines: The objectives of this course are to comprehend Fundamentals of Gas Turbine Engines (Brayton cycle, Constructional arrangement and operation of turbojet, turbofan, turboshaft, turboprop), Engine Performance, inlet, compressor, combustion chamber, turbine section, exhaust, lubrication systems, fuel systems, air systems, starting and ignition systems, engine indication systems.

Aircraft Structures and Systems-II: The objectives of this course are to comprehend Ice and Rain Protection, Fire Protection, Fuel, Hydraulic Power, Landing Gear, Pneumatic/Vacuum, On Board Maintenance Systems

Aircraft Electronic Systems: The objectives of this course are to comprehend Instruments, electronic flight instrument systems, automatic flight control systems, aircraft electrical system, lights, communication and

navigation systems.

Propellers: The objectives of this course are to comprehend Fundamentals of Propeller Construction, Propeller Pitch Control, Propeller Synchronising, Propeller Ice Protection, Propeller Maintenance, Propeller Storage and Preservation.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with introductory information about their further classes.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

Human Factors in Aviation: This course aims to make students gain competence related to effects of human factors on organizational actions in aviation. The course consists of Concepts of Human and Behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

Mathematics-I: This course aims to teach necessary abilities (for students of Air Force NCO Vocational High School) such fast and accurate thinking, building logic, problem solving and to furnish students with basic competencies required for high level courses. During course, Sets and Numbers, Equations and Inequations, Functions, Trigonometry, Complex Numbers, Basic Geometric Terms are explained.

Physics-I: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

Physics-II: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Electricity, Magnetism, Pressure and Ascending Force, Mechanical Ascending Force and Electromagnetic Wave Motion are explained.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the

teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

Technical Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

Technical Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

Technical Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

AIRCRAFT TECHNOLOGY PROGRAMME LABORATORIES

Hydraulics & Pneumatics Laboratory: Hydraulic and electro-hydraulic circuits are operated by using these training sets. These circuit elements are hydraulic tank, pump, valves, cylinders etc.

Pneumatic and electro-pneumatic circuits are operated by using these training sets. These circuit elements are tank, pump, valves, cylinders etc.

Aircraft Engine Laboratory: In this laboratory, there are three engines which are J-79 (fitted on F-4 Aircraft), J-85 (fitted on F-5 aircraft), J-69 (fitted on T-37 aircraft). After lecturing the theoretical concepts, constructional arrangement and operation of gas turbine engines, inlet, compressor, combustion chamber, turbine section, exhaust, accessories are demonstrated on these engines. Also, there is a Gas Turbine Engine Training Set. While running of this training set, change of combustion chamber temperature, thrust, exhaust gas temperature, rpm, fuel consumption, air flow parameters are observed.

Maintenance Applications Workshop: In the maintenance applications workshop, there will be 4 docks. In each dock, there's a service table, a tool cabinet, a tool car and a transportation table. At docks all the necessary tools and equipment for installation and disassembly are included. In addition to the mentioned there are many discarded aircraft parts (system parts, various fasteners, rollers, wing parts, etc.) are procured. In the workshop, it is aimed for the students to get familiar with the tools and equipment that they will use in their professions and provide them to gain the necessary handcraftsmanship.

Material Laboratory: In the material laboratory, there's a fatigue test machine, a universal material test machine, hardness test machine, notch-impact test machine. Fatigue durability, tension, compression, bending, Brinell/Rockwell hardness, shear forces of materials are tested. Experiments of mechanical properties of the materials which are discussed in "Aircraft Materials" course are performed.

Fluid Mechanics Laboratory: In Fluid Mechanics Laboratory, there are training sets which are Bernoulli Principle Training Set, Streamlines Visualization Training Set and Air Flow Bench. In this laboratory, basics of fluid flows, fluid flow around bodies, pressure distribution of fluids and Bernoulli Principles are demonstrated. Basic fluid flows formed around aircraft are visually taught to students who will be Mechanic Aircraft Maintenance Technicians.

Heat (Thermodynamics) Laboratory: In Thermodynamics Laboratory, there are 4 training sets. These are Basic vapor compression refrigeration system, Methods of temperature measurement, Methods of pressure measurement and Change of state of gases. Basic vapor compression refrigeration system demonstrates the second law of thermodynamics in heat pumps and refrigeration machines. Methods of temperature measurement contain mercury thermometer, gas thermometer, bimetallic thermometer, thermistor, NTC thermometer and thermocouple. Methods of pressure measurement training set visualize the U tube, Inclined tube and Bourdon tube manometers. Change of state of gases training set demonstrates the Boyle-Mariotte and Gay-Lussac laws of ideal gases. This laboratory serves for the Thermodynamics and Fluid Mechanics courses.

Physics Laboratory: It enables students to reinforce terms related to topics that students learned and will learn during course, gain discipline to study in a group, improve their scientific thinking and problem solving abilities. In the laboratory, students in groups alternately can carry out experiments of free fall, measuring in physics, Newton's motion laws, conservation of momentum, balance of forces, moment, electrical current, energy conservation, inclined plane, electronics and magnetism.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		SKILLS		QUALIFICATIONS			
	Theoretical	Practical	Cognitive/Conceptual	Practical	Qualification of Working Independently and Taking Responsibility	Learning Qualification	Communication and Social Qualification	Domain-specific Qualification
PO-1	X							
PO-2	X		X					
PO-3	X		X					
PO-4		X		X				
PO-5		X		X		X		
PO-6				X	X			
PO-7	X							
PO-8	X							
PO-9	X							
PO-10				X	X			
PO-11			X					
PO-12	X							
PO-13	X							
PO-14	X							
PO-15		X	X					
PO-16	X							
PO-17				X			X	
PO-18			X					
PO-19		X			X			X
PO-20							X	

AIRCRAFT TECHNOLOGY AVIONICS BRANCH COURSE CATALOGUE

Academic Unit	Department of Aeronautics
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Aircraft Technology, graduates become qualified to work as aircraft maintenance technicians.
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from a program, students are required to complete successfully the compulsory and elective courses which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Profile of the Program	The scope of this program is to train qualified maintenance technicians who have the basic skills and knowledge identified by the international standards in performing the maintenance and repair of aircraft, helicopter, unmanned air vehicle, ammunition, and ground support equipment; who are self-improving and can use the theoretical information for the practical purposes by keeping up with the developing aviation industry , who are initiative-takers and know problem-solving methods, who can use the common aviation terminology in the joint operations performed with allied countries, who can think in positive and scientific way in accordance with the objects and requirements of the Turkish Air Force, who are continuously learning, and capable of reaching the information, who have the developed leadership properties, in peace and warfare conditions.
Professional Profile of Graduates	Aircraft Technology Programme aims to educate aircraft maintenance technicians who have both highly qualified knowledge and skills. These personnel are in charge of doing the repair and maintenance of aircraft under the responsibility of the Air Force Command. EASA PART-66 modules are taken as reference.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.

Program Learning Outcomes	1. To be able to solve problems utilizing the core principles of atmospheric physics, aerodynamics, flight theory and dynamics 2. To be able to explain the fundamentals of direct and alternating current, to realize the responses of passive circuit units on circuits they install and to perform basic measurements 3. To be able to realize the structural features of digital electronics circuit units and to install basic circuits with them 4. To be able to realize the core modulation/demodulation techniques used in analogue and digital communication 5. To be able to realize the structural features of semi conductive equipment, to install basic circuits using these circuit units and make measurements 6. To be able to recognize the properties of equipment used in aircrafts and the corrosion types that occur, to explain the operational principles of hardware units and to make measurements 7. To be able to realize the structural principles of electrical systems in aircraft such as power generation, distribution, maintenance, control and lighting 8. To be able to perform the maintenance and control of aircraft specialized measuring tool-kits 9. To be able to realize the intersystem connections in aircraft fuselage structure, to explain the operational principles of aircraft engines and to make basic measurements 10. To be able to realize the configurational principles of avionics systems such as aircraft displays, communication, navigation and flight control systems and to do basic inspections on them 11. To have basic knowledge about national and international aviation authorities, regulation of maintenance approval staff and maintenance organization authorization 12. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 13. To have basic knowledge of constitutional rights, freedoms and duties and to understand the disciplinary rules military personnel are liable to 14. To have basic knowledge of English 15. To have basic knowledge of mathematics and physics and to speak Turkish effectively 16. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk's principles and revolutions and National War of Independence 17. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-I	Required	12	10	2	11	11
Turkish Language-I	Required	2	2	0	2	2
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Human Factors in Aviation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Computer Applications in Microsoft Office	Required	3	2	1	3	4
	TOTAL:	**35**	**30**	**5**	**28**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Physics-II	Required	2	1	1	2	2
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Turkish Language-II	Required	2	2	0	2	2
English Language-II	Required	8	6	2	7	7
Technical Aviation English-I	Required	4	2	2	3	3
Basic Aerodynamics	Required	3	2	1	3	4
Aircraft Materials	Required	3	1	2	2	4
Basic Electrics-I	Required	5	3	2	4	6
TOTAL:		**29**	**19**	**10**	**25**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
Technical Aviation English-II	Required	4	2	2	3	3
History of Aviation Warfare	Required	2	2	0	2	2
Fundamentals of Electronics	Required	3	2	1	3	3
Aircraft Hardware	Required	2	1	1	2	2
Digital Techniques	Required	3	2	1	3	3
Basic Electrics-II	Required	3	2	1	3	4
Aircraft Structures and Systems	Required	2	2	0	2	2
Fundamentals of Communication	Required	4	3	1	4	4
TOTAL:		**35**	**30**	**5**	**28**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
Technical Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Aviation Legislation	Required	1	1	0	1	1
Avionics Maintenance Practices	Required	5	2	3	4	5
Communication and Navigation Systems	Required	3	2	1	3	3
Flight Instrument Systems	Required	3	2	1	3	3
Aircraft Electronic Systems	Required	3	2	1	3	3
Automatic Flight Control Systems	Required	2	1	1	2	3
TOTAL:		**35**	**30**	**5**	**28**	**30**

COURSE DESCRIPTIONS

Basic Aerodynamics: The objectives of this course are to acquire the ability of analyzing atmospheric physics, Aerodynamics, Theory of Flight, Flight Stability and Dynamics.

Aircraft Materials: The objectives of this course are to comprehend Aircraft material types and mechanical properties of materials, interpret situations affecting their strength, recognize heat treatment and the types of corrosion they are exposed to.

Basic Electrics-I: The objectives of this course are to acquire the ability of analyzing Electron Theory, Static Electricity and Conduction, Electrical Terminology, Generation of Electricity, DC Sources of Electricity, DC Circuits, Resistance/Resistor, Power, Capacitance/Capacitor, Inductance/Inductor.

Fundamentals of Electronics: The objectives of this course are to comprehend units made of semi-conductive elements such as Diodes, transistors and operational amplifiers and apply circuit analysis methods and circuit theorems.

Aircraft Hardware: The objectives of this course are to comprehend Aircraft fasteners, types of piping, pipe coupling, spring and bearing; interpret transmission and recognize control cable, cable construction and cable fittings.

Digital Techniques: The objectives of this course are to acquire the ability of analyzing Numbering Systems, Boolean Maths, Karnaugh Diagram, Arithmetic circuits, encoders and decoders, multiplexers and demultiplexers, analog digital converter, flip/flops, counters, microprocessors, computers, memories, Software Management Control, Electrostatic Sensitive Devices.

Basic Electrics-II: The objectives of this course are to comprehend Magnetism, Magnetic induction, AC Theory, AC Circuits, Transformers, Filters.

Aircraft Structures and Systems: The objectives of this course are to comprehend Aerodynamics of Aircraft and Flight Controls, High Speed Flight, Rotary Wing Aerodynamics, Structures, Electrical Power, Equipment and Furnishing, Flight Controls, Lights, Cabin Systems.

Fundamentals of Communication: The objectives of this course are to comprehend Fundamentals of communications, signal analysis, power at communication, amplitude modulations, frequency modulation, digital communication, electromagnetic waves, electromagnetic wave propagation, antennas, fiber optic.

Aviation Legislation: The objectives of this course are to comprehend Role of the International Civil Aviation Organization, Role of EASA, Role of Federal Aviation Administration, Role of Directorate General Of Civil Aviation (DGCA), Certifying Staff-Maintenance DGCA 66-01 (EASA Part-66), Approved Maintenance Organizations DGCA 145-01 (EASA Part-145).

Avionics Maintenance Practices: The objectives of this course are to achieve the ability of analyzing Safety precautions-aircraft and workshop, workshop practices, tools, avionic general test equipment, engineering drawings, diagrams and standards, electrical cables and connectors, riveting, pipes and hoses, springs, bearings, transmissions, control cables, aircraft weight and balance, aircraft handling and storage, disassembly, inspection, repair and assembly techniques and maintenance procedures.

Communication and Navigation Systems: The objectives of this course are to comprehend Communication system, radio navigation, approach system, navigation based on satellite, inertial navigation system, radar system, new generation system, inboard communication, data recorders, data buses, and electronic warfare.

Flight Instrument Systems: The objectives of this course are to comprehend Atmosphere, Classification, Pitot static systems and indicators, gyroscopic principles, gyros and indicators, engine instruments. Instrument warning systems, Electronic Flight Instrument Systems, head-up display, glass cockpit.

Aircraft Electronic System: The objectives of this course are to comprehend Instruments, electronic flight instrument systems, automatic flight control systems, and aircraft electrical system, lights, communication and navigation systems.

Automatic Flight Control Systems: The objectives of this course are to comprehend Servomechanism, fundamentals of automatic flight control, modes of operation, yaw dampers, auto throttle systems, automatic landing systems, stability augmentation system in helicopters.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

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Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

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Physics-I: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

Physics-II: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Electricity, Magnetism, Pressure and Ascending Force, Mechanical Ascending Force and Electromagnetic Wave Motion are explained.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills,

overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

Technical Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

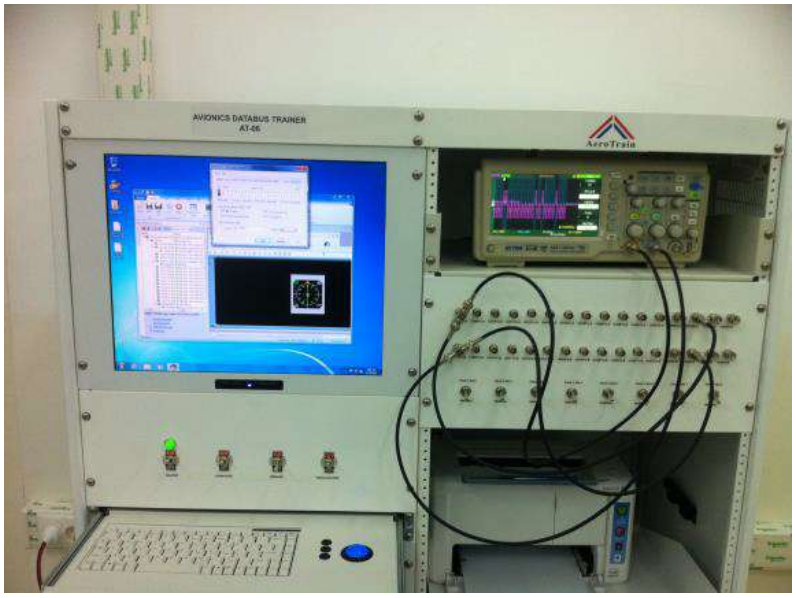
Technical Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

Technical Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

AIRCRAFT TECHNOLOGY (AVIONICS BRANCH) LABS

Automatic Flight Control Training Set

Flight Instrumentation Training Set



Data Bus Training Set

Avionic System Laboratory:

Automatic Flight Control Training Set: Teaching the principles of automatic flight controls by demonstration using a complete system that encompasses all the aspect of autopilot and automatic flight controls. It is representative of autopilot systems used on large aircraft. The visual display of realistic effects enhances the perception and understanding of flight controls.

Flight Instrumentation Training Set: It is a cockpit instrumentation system with electronic flight instruments and electronic engine display. Three degrees of freedom instrument panel permits full demonstration of attitude and directional gyro functions.

Data Bus Training Set: It simulates ARINC 429 and MIL-STD – 1553 signals. The software installed on the trainer is an intuitive, graphical bus analyzer that simplifies the simulation of ARINC 429 and MIL-SRD-1553.

Maintenance Practices Workshop: In the maintenance applications workshop, there are 4 docks. In each dock there's a service table, a tool cabinet, a tool car and a transportation table. At docks all the necessary tools and equipment for installation and disassembly are included. In addition to the mentioned tools there's a CNC Router and there are many discarded aircraft parts (system parts, various fasteners, rollers, wing parts, etc.) are procured. In the workshop, it is aimed for the students to get familiar with the tools and equipment that they will use in their professions and provide them to gain the necessary handcraftsmanship.

Materials Laboratory: In the material laboratory, there are five test machines. A fatigue test machine, a universal material test machine, a hardness test machine and a notch-impact test machine. Fatigue durability, tension, compression, bending, Brinell/Rockwell hardness, shear forces of materials are tested. Experiments of mechanical properties of the materials which are discussed in "Aircraft Materials" course are performed.

Physics Laboratory: It enables students to; reinforce terms related to topics that students learned and will learn during course, gain discipline to study in a group, improve their scientific thinking and problem solving abilities. In the laboratory, students in group alternately can carry out experiments of; free fall, measuring in physics, Newton's motion laws, conservation of momentum, balance of forces, moment, electrical current, energy conservation, inclined plane, electronics and magnetism.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		SKILLS		QUALIFICATIONS			
	Theoretic	Practical	Conceptional	Practical	Qualification of Independent Working and Taking Responsibility	Learning Qualification	Communication and Social Qualification	Domain-specific Qualification
PO-1	X							
PO-2	X	X						
PO-3	X	X						
PO-4	X	X						
PO-5			X	X				
PO-6	X	X						
PO-7		X						
PO-8			X	X				
PO-9	X	X						
PO-10	X	X						
PO-11	X							
PO-12		X	X					
PO-13	X							
PO-14				X			X	
PO-15			X					
PO-16		X			X			X
PO-17							X	

AIR TRAFFIC CONTROL PROGRAMME COURSE CATALOG

Academic Unit	Department of Aeronautics
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Electrical Technology, graduates become qualified to work as electricians.
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from the program, students are to complete successfully the required and elective courses which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Profile of the Program	The objective of the program is to provide students to comply national and international necessities with the frame of civilian and military regulations in Air Traffic Control and Air Traffic Management. The program has been created according to national and international specifications and guidelines to fulfill both military and also civilian requirements. Students are expected to have basic knowledge pointed in International Civil Aviation Organization (ICAO) Annex 1 Personnel Licensing.
Professional Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of air traffic control with the competence to realize and develop the technical applications required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program Learning Outcomes	1. To know about the regulations of aviation and space law 2. To recognize the place and importance of air field structure, flight plan within national regulations and to exercise them 3. To know about the air traffic services provided to aircraft by air traffic units and air traffic rules exercised while the services are provided 4. To know and exercise the basic principles of Tower Control, Non-Radar Approach Control, Radar Approach Control and Precision Approach Control

	5. To describe the major meteorological concepts and phenomenon and to use the meteorological information during ATS operations by analyzing the effects of phenomenon on ATS operations and aircraft performance 6. To be able to explain the basic operating principles of navigation and to utilize the information during ATS services 7. To know about aircraft, the essentials of flight theory, structural and aero dynamical properties of aircraft, aircraft systems, tools and categories and to recognize the effects of aircraft performance on air traffic management and flight mission plan 8. To know about the instruments and systems used in Air Traffic Services and the overall properties, operation principles and limits of radar systems 9. To know about types of airports, runways and taxi ways, marking of runway and taxi ways, lighting and marking of obstacles, aircraft arresting gear and ground facilities used in contact flight 10. To know about the functions, components and purposes of aviation information management 11. To know about the principles of flight operations and general services and the properties of aerodrome operations 12. To know about the general codes of practice in air transport within the scope of general aviation rules and to recognize the effects of aircraft shipment practices on balance 13. To know how to practice the transport of hazardous materials safely, effectively and by international standards 14. To have an appropriate level of English to ICAO criteria and microphone technique 15. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 16. To have basic knowledge of constitutional rights, freedoms and duties and to understand the disciplinary rules military personnel are liable to 17. To have basic knowledge of English 18. To have basic knowledge of mathematics and physics and to speak Turkish effectively 19. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk's principles and revolutions and National War of Independence 20. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors.
CURRICULUM	

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-I	Required	12	10	2	11	11
Turkish Language-I	Required	2	2	0	2	2
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Human Factors in Aviation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Computer Applications in Microsoft Office	Required	3	2	1	3	4
TOTAL:		**30**	**26**	**4**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-II	Required	8	6	2	7	7
Technical Aviation English-I	Required	4	2	2	3	3
Turkish Language-II	Required	2	2	0	2	2
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Meteorology	Required	3	3	0	3	4
Aircraft Fundamentals	Required	3	3	0	3	4
Air Traffic Services	Required	4	4	0	4	4
Airspace Design	Required	3	3	0	3	4
	TOTAL:	**29**	**25**	**4**	**27**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
Technical Aviation English-II	Required	4	2	2	3	3
History of Aviation Warfare	Required	2	2	0	2	2
Navigation	Required	3	3	0	3	3
Airport and Facilities	Required	2	2	0	2	2
Communication and Navigation Systems	Required	3	3	0	3	4
Aviation and Space Law	Required	3	3	0	3	3
Optional Course	Required	6	-	-	-	6
Optional Course	Required		-	-	-	
	TOTAL:	**31**	**21**	**4**	**23**	**30**
Second Year-Fall Semester Elective Courses						
Aerodrome Control	Elective	6	2	4	4	6
Flight Operations	Elective	3	3	0	3	3
Basic Aerodynamics	Elective	3	3	0	3	3

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
Technical Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Air Traffic Speech	Required	3	3	0	3	2
Aviation Information Management	Required	2	2	0	2	2
Optional Course	Required	12	-	-	-	14
Optional Course	Required		-	-	-	
TOTAL:		**31**	**15**	**4**	**17**	**30**
Second Year-Spring Semester Elective Courses						
Non-Radar (Procedural) Approach Control	Elective	6	2	4	4	7
Radar Approach Control	Elective	6	2	4	4	7
Airline Transport	Elective	3	2	1	3	4
Keyboard Use	Elective	3	2	1	3	3
Load and Balance	Elective	3	3	0	3	3
Hazardous Material Transport	Elective	3	3	0	3	4

COURSE DESCRIPTIONS

Meteorology: This course provides students with basic information about how meteorology affects ATS operations and aircraft performance and how to apply meteorological information in the basic operational procedures of ATS. During the course students will have basic knowledge related to Aviation and Meteorology, including organization of meteorological service, atmosphere's composition and structure, atmospheric circulation, meteorological phenomena and meteorological information for aviation.

Aircraft Fundamentals: This course focuses on introducing the student to basic concepts about aircraft. Students will assess and integrate aircraft performance in the provision of ATS. This course includes the theoretical information about aircraft instruments, aircraft categories, factors affecting aircraft performance and aircraft data.

Air Traffic Services: This course is primarily designed for ATS personnel candidates who have been recently tasked by their management with carrying out any type of environmental duties. Students will have information related to basic ATS concept including Aerodrome Control Service, Flight Information Service (FIS), Alerting Service (ALRS) and ATS System Capacity and Air Traffic Flow Management.

Airspace Design: This course is designed for the students who will have responsibilities in any area of airspace design and management, whether they are involved with aircraft operations, air navigation service provision, the national supervisory authority or military command. Course is designed under the subjects of analyzing the current airspace organization of Turkish Airspace and recognizes the ECAC Airspace classification criteria. New trends in airspace management will be evaluated the according to Flexible Use of Airspace (FUA).

Navigation: Navigation is an essential element in aviation. The available range of navigation aids when used either separately or in conjunction with each other serves to give guidance to aircraft both on-route and at airfields. Student will be described the position of the Earth and rotation, direction and distance on the earth**,** geographic coordinate system, charts used in aviation. They will have also chance to analyze VFR and IFR navigation.

Airports and Facilities: This course introduces the norms and standards used at airports as well as practices that can enhance the safety and efficiency of airport operations. Students will have knowledge about airport operating procedures, markings and signs, maneuvering flight and flight loads that affect aircrafts and runway incursion prevention methods.

Communication and Navigation Systems: Students integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS. This course is designed to explain the operation of Navigation Aids when used in the Air Traffic Control environment and explores the following high level topics: Purpose and Use of Navigation, Non-Directional Beacons (NDB), Distance Measuring Equipment (DME), VHF Ommi Range Beacon (VOR), Instrument Landing System (ILS), Global Navigation Satellite System (GNSS), Automatic Dependent Surveillance (ADS), Inertial Navigation System (INS).

Aviation and Space Law: The course is designed to equip and update legal and non-legal professionals with the fundamental concepts of air law and how air law developments impact air traffic management, with emphasis on the regulation of air carriers, airports, and aerospace organizations and aircraft operations. It also provides students with a better understanding of how legal issues can affect the various aerospace activities and all stakeholders involved in the civil and military aviation.

Aerodrome Control: Air Traffic Control Services consist on three different sub fields: Aerodrome Control Services, Approach Control Services and Area Control Services. This course provides students to improve their "Aerodrome Control Service" skills. This course is designed in two parts including theoretical and practical phases. During the theoretical phase students will learn basic occupational concept including aerodrome traffic, aerodrome control tower and aerodrome controller and also aerodrome traffic pattern, aerodrome taxi pattern. They will also learn air traffic phraseology for aerodrome traffic control both in Turkish and English. On the other hand during the practical phase, they will manage to aerodrome traffic safely and efficiently by using correct aerodrome control phraseologies in aerodrome control tower simulation facilities.

Flight Operations: In this course, it is aimed to teach the basic concepts of Flight Managing, General Flight Rules, Flight Operation Missions, Flight Planning Phases, Flight Fuel Planning, and Air Task Order Structure.

Basic Aerodynamics: The objectives of this course are to acquire the ability of analyzing Physics of the Atmosphere, Aerodynamics, Theory of Flight, Flight Stability and Dynamics.

Air Traffic Speech: In this course, Students shall define ICAO Level 4 English Adequacy Level, Scope of this Level and it is aimed to implement the methods that will enable to reach this level.

Aviation Information Management: The general objectives are to enable students to appreciate how the aeronautical information services function and explain how information is collected and distributed, understand the function of the Air Traffic Services Reporting Office (ARO); understand the function of the Aerodrome AIS Unit; recognize the information required by pilots prior to a flight, describe the impact of safety management systems to AIS/AIM, appreciate ongoing developments in ATM and AIS and be aware of their possible impact on AIS.

Non-Radar (Procedural) Approach Control: Air Traffic Control Services consist of three different sub fields: Aerodrome Control Services, Approach Control Services and Area Control Services. This course provides students with the necessary skills, knowledge and competences to successfully pass the practical and theoretical examination in Approach Control Procedural. This course is designed in two parts including theoretical and practical phases. During the theoretical phase students will recognize non-radar separation, coordination and hand off procedures. They will also learn Non-Radar Control Phraseology both in Turkish and English. On the other hand during the practical phase, students will manage air traffic in TMA by using correct non-radar approach control phraseologies in approach control simulation facilities.

Radar Approach Control: Air Traffic Control Services consist of three different sub fields: Aerodrome Control Services, Approach Control Services and Area Control Services. This course provides students with the necessary skills, knowledge and competences to successfully pass the practical and theoretical examination in Approach Control Surveillance. This course is designed in two parts including theoretical and practical phases. During the theoretical phase students will use identification methods according to types of radar such as PSR, SSR and ADS. They will also recognize radar separation, vector traffic to approach course, provide radar coordination and hand off procedures. They will also learn Radar Control Phraseology both in Turkish and English. On the other hand during the practical phase, students will manage air traffic in TMA by using correct radar approach control phraseologies in radar approach control simulation facilities.

Airline Transport: The subjects covered are Transportation System and Sub-Systems, The Structure of Air Transport, Basic Concepts in Air Transport Services, Economic Regulations in Air Transport, Air Transport Sector and the Law of Competition, The Concept of SLOT, Passenger Rights in Air Transport.

Basic Keyboard Techniques: This subject is delivered each student to gain the habit and competence of ten fingers serial typing with F keyboard.

Load and Balance: This subject is delivered to teach the codes of practice in aircraft shipment and its effects on balance within the context of general aviation rules.

Hazardous Material Transport: The subject is delivered to teach, in Air Forces Command, how to carry out the air transport of dangerous goods safely, effectively and in accordance with international regulations specified in the document DGR (Dangerous Goods Regulations) of IATA (International Air Transport Association).

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English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

Technical Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

Technical Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

Technical Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language. Through content-specific classes, students are able to read/listen and analyze the materials related to their specialization.

AIR TRAFFIC PROGRAMME COMMON USED PHYSICS LABORATORY

Physics Laboratory: It enables students to reinforce terms related to topics that students learned and will learn during course, gain discipline to study in a group, improve their scientific thinking and problem solving abilities. In the laboratory, students in group alternately can carry out experiments of; free fall, measuring in physics, Newton's motion laws, conservation of momentum, balance of forces, moment, electrical current, energy conservation, inclined plane, electronics and magnetism.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		**SKILLS**		**QUALIFICATIONS**			
	Theoretical	**Practical**	**Conceptual**	**Practical**	**Qualification of Independent Working and Taking Responsibility**	**Learning Qualification**	**Communication and Social Qualification**	**Domain-specific Qualification**
PO-1	X							
PO-2	X	X						
PO-3	X	X						
PO-4	X	X	X	X				
PO-5	X	X						
PO-6					X			X
PO-7	X	X						
PO-8	X	X	X					
PO-9	X	X						
PO-10	X							
PO-11	X							
PO-12	X		X					
PO-13	X							
PO-14	X							
PO-15		X	X					
PO-16	X							
PO-17				X			X	
PO-18			X					
PO-19		X			X			X
PO-20							X	

ELECTRONICS COMMUNICATION TECHNOLOGY PROGRAMME COURSE CATALOG

Academic Unit	Department of Electric Electronics and Communication
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Electronics and Communication Technology, graduates become qualified to work as Electronics and Communication technicians.
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (one academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from a program, students are required to complete successfully the compulsory and elective courses which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Profile of the Program	This program trains technicians who are high qualified, think analytically, eager for development and innovation, internalize the principle of lifelong learning, regard national values, have sufficient theoretical knowledge to be employed in the work areas of electronic and communications in Turkish Air Force.
Professional Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of electronic and communication technologies with the competence to realize and develop the technical applications required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program Learning Outcomes	1. To be aware of safety precautions and occupational safety, to understand the logic of working of basic measurement instruments and to be able to make measurements using them. 2. To be able to know the basic concepts of direct current, to establish direct current circuits, to analyze the reactions of passive circuit elements in direct current, to make current voltage and power calculations in electrical circuits. 3. To be able to define digital electronic circuit elements and to be able to design digital circuit using them. 4. To comprehend the structure, characteristics, working principles and types of analog electronic circuit elements using the necessary circuits 5. To design and simulate various electrical electronic circuits using computer aided drawing and circuit design programs. 6. To be able to define the basic concepts of alternating current, to establish alternating current circuits, to analyze the response of the

	passive circuit elements in alternating current, to calculate current, voltage and power in RLC circuits ability. 7. To be able to comprehend and apply modulation/ demodulation techniques used in analog communication. 8. To comprehend the fundamentals of electromagnetic wave, to comprehend and apply basic antenna concepts, to understand the basics of microwave communication and to make necessary measurements in microwave communications. 9. To understand the logic of the algorithm and the structure of a programming language, to implement the necessary algorithm and software of the program, to have information about the hardware structure of microprocessor and microcontroller. 10. To be able to comprehend and apply the modulation/ demodulation techniques used for digital communication. 11. To be able to comprehend and establish receiver circuits, oscillator circuits, filter circuits, modulator/ demodulator circuits in TV, radio, RF etc. systems. 12. To have the necessary knowledge and skills about satellite communication and cellular communication. 13. To have knowledge about computer networks and communication technologies (GSM, wireless communication, GPRS etc.) 14. To have information about communication networks, switching technologies, telephone and transmission lines and to be able to make necessary measurements in a transmission line. (In related specialties) 15. To know the properties of fiber optic cables and to know the materials used in fiber optic communication, to comprehend principles, superiority and usage of the fiber optic communication, to be able to perform information transfer in fiber optic transmitter and receiver system. (In related specialties) 16. To have knowledge about the history, types and basic working principles of radar. (In related specialties) 17. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system. 18. To have basic knowledge of constitutional rights, freedoms and duties and to learn the disciplinary rules for military personnel 19. To have basic knowledge of English. 20. To have basic knowledge of mathematics and physics and to use Turkish effectively. 21. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to learn Ataturk's principles and revolutions and National War of Independence. 22. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Atatürk's Principles and the History of Turkish Revolution-1	Required	2	2	0	2	2
Turkish Language-I	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Human Factors in Aviation	Required	2	2	0	2	2
Computer Applications in Microsoft Office	Required	3	2	1	3	4
	TOTAL:	**30**	**26**	**4**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Turkish Language-II	Required	2	2	0	2	2
English Language-II	Required	8	6	2	7	7
General Aviation English-I	Required	4	2	2	3	3
Electronic Measurement Techniques	Required	3	2	1	3	4
Direct Current Circuit Analysis	Required	4	3	1	4	5
Digital Electronics	Required	3	2	1	3	3
Alternating Current Circuit Analysis	Required	3	2	1	3	4
TOTAL:		**29**	**21**	**8**	**27**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Analog Electronics	Required	4	3	1	4	5
Computer Aided Circuit Design	Required	2	1	1	2	2
Analog Communication	Required	3	2	1	3	3
Antennas and Microwave Communication	Required	4	3	1	4	4
Microprocessors and Microcontrollers	Required	4	2	2	3	4
TOTAL:		**31**	**21**	**10**	**28**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Digital Communication	Required	3	2	1	3	4
Radio Frequency Techniques	Required	4	2	2	3	4
Satellite Communication and Cellular Communication	Required	2	1	1	2	2
Advanced Communication Technologies	Required	2	2	0	2	2
Computer Hardware and Networks	Required	2	1	1	2	2
Elective Course	Required	2	1	1	2	2
Elective Course	Required	2	1	1	2	2
Elective Course	Required	2	2	0	2	2
TOTAL:		**31**	**20/21**	**10/11**	**28**	**30**
Second Year – Spring Semester Elective Courses						
Telephone Communication and Switching Systems	*Elective*	2	1	1	2	2
Fiber Optic Communication	*Elective*	2	1	1	2	2
Fundamentals of Radar	*Elective*	2	2	0	2	2

COURSE DESCRIPTIONS

Electronic Measurement Techniques: The objectives of this course are to comprehend the basic principles of measurement and the types of measurement errors, to teach the working principles of measuring instruments, to gain the ability of measuring electrical, electronic and mechanical quantities, to make the measurement with the oscilloscope, to comprehend the measuring transformers, making measurements related to power and energy, to teach what the occupational risk factors are, to gain awareness of the need for job security and to gain the ability of providing of the work safety.

Direct Current Circuit Analysis: The objectives of this course are to acquire the ability of analyzing the electric circuit of the basic branches of the science of electricity and to achieve the ability of applying the basic theorems and the methods of circuit solution. In this course static electricity, taking precautions against the unpredictable effects of electrical current, direct current circuit analysis, loop currents method, node voltages method, and resource links are taught.

Digital Electronics: The objectives of this course are to teach number systems, to comprehend truth tables and electrical properties of logic Gates, to acquire the ability of designing digital circuits using Boolean algebra and Karnaugh maps, to acquire the ability of applying combinational logic circuits, arithmetic operation circuits, counters, registers, multivibrators and flip-flops, to be able to comprehend analog-to-digital and digital-to-analog converters.

Alternating Current Circuit Analysis: The objectives of this course are to enable the students to acquire the knowledge and skills about circuit solution of alternative current and to calculate them. Course contents are alternative current load types, the basic concepts of ac electrical circuits, the solution methods of the circuits in continuous mode, resonant circuits, filtering, power factor correction and power.

Analog Electronics: The objectives of this course are to teach semiconductor materials and their properties, to comprehend their structure, types, properties and operating principles of semiconductor circuit devices and to acquire the ability of analyzing the circuits which have semiconductor circuit devices.

Computer Aided Circuit Design: The objectives of this course are to teach drawing schematic/printed circuits of electronic circuits on the computer, analysis and how to prepare the circuits.

Analog Communication: The objectives of this course are to comprehend main components, structure, properties and noise sources of communication systems, to achieve the ability of applying power ratio and signal-level units used in communication systems, to achieve the ability of analyzing amplitude, frequency, phase modulation and demodulation techniques.

Antennas and Microwave Communication: The objectives of this course are to teach the principle of propagation of radio waves, to comprehend microwave systems and microwave components, to achieve the ability of solving transmission line problems.

Microprocessors and Microcontrollers: The objectives of this course are to teach the historical development of microprocessor and microcontrollers, to understand the duties and operation of the microcontroller hardware units, to gain basic microcontroller programming skills with high level language.

Digital Communication: The objectives of this course are to comprehend the basic communication math and the sampling theorem, to achieving the ability of applying digital communication techniques, to achieve the ability of analyzing time division multiplexing systems, to teach digital keying techniques.

Radio Frequency Techniques: The objectives of this course are to comprehend structure, types, operating principles and properties of oscillator, filter, mixer, modulator and demodulator circuits, to achieve the ability of applying oscillator, filter, mixer, modulation and demodulation circuits.

Satellite Communication and Cellular Communication: The objectives of this course are to comprehend the necessity of satellite and cellular communication systems in terms of voice, data and video applications used in national and international communication.

Advanced Communication Technologies: The objective of this course is to teach the computer networks, data communication techniques, cyber security, voice and data switching.

Computer Hardware and Networks: The aim of this course is to provide basic competencies related to hardware types, hardware structure and features of hardware, installation and maintenance of hardware, basic concepts and types of network technologies, network devices and network cabling.

Telephone Communication and Switching Systems: The objectives of this course are to teach structure, components and operating principle of telephone device, to comprehend switchboard structure and switchboard signaling, to teach switching techniques used in switchboards.

Fiber Optic Communication: The objectives of this course are to teach the usage necessity of fiber optic communication systems, comprehending types, structure and properties of fiber optic cables, achieving the ability of analyzing the parameters which affect optic signal conduction in fiber optic cables.

Fundamentals of Radar: The aim of this course is to teach the students about the radar concepts and radar equations according to the basic concepts, usage and properties of radar.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of The Principles of Atatürk and Turkish Revolution History I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In The Principles of Atatürk and Turkish Revolution History II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Atatürk's thinking Notion and are prepared to be future's individual.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with introductory information about their further classes.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

Human Factors in Aviation: This course aims to make students gain competence related to effects of human factors on organizational actions in aviation. The course consists of Concepts of Human and Behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

Mathematics-I: This course aims to teach necessary abilities (for students of Air Force NCO Vocational High School) such fast and accurate thinking, building logic, problem solving and to furnish students with basic competencies required for high level courses. During course, Sets and Numbers, Equations and Inequations, Functions, Trigonometry, Complex Numbers, Basic Geometric Terms are explained.

Physics-I: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an

interactive way.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

ELECTRONICS AND COMMUNICATION PROGRAMME LABORATORIES

Basic Electrical, Electronics, Communication and Microprocessor Labs: We have 4 labs for the experiments of several courses listed below. Each lab has 12 computer aided experiment sets which contain an experiment bag, a number of experiment modules, a digital multimeter and a PC. The experiment modules can be categorized into 4 different types due to the capabilities they have. These are the modules for the analog electronics, digital electronics, basic communication and microprocessor experiments. PCs have the software for the measurements of the quantities like resistance, voltage, current, frequency and for the simulation of basic electrical/electronic circuits.

Taken Courses in These Labs:

- Electronic Measurement Techniques
- Direct Current Circuit
- Digital Electronic
- Digital Electronics
- Alternating Current Circuit Analysis
- Analog Electronics
- Computer Aided Circuit Design
- Analog Communication
- Microprocessors and Microcontrollers
- Digital Communication
- Radio Frequency Techniques

Antenna and Microwave Communication Lab: In this lab, there are 3 different trainer sets, Antenna, Microwave and Communication link trainer sets.

Antenna Trainer: It is a student friendly trainer kit for studying characteristics of different antennas. There are 5 antenna trainer set in this lab. Each trainer set contains various types of antennas, signal generator, transmitter base, receiver base and detector. The experiments listed below can be experimented in this trainer set.

- Polar plot of various antennas
- Polarization
- Antenna Gain
- Antenna Beam Width.
- Antenna matching
- SWR measurement

Microwave Trainer: Microwave Trainer: Basic microwave principals can be experimented in this trainer kit. There are 3 kits in this lab. Some of the experiments that can be experimented in this trainer are:

- Study of the characteristics of Klystron Tube
- Determining the frequency & wavelength in a rectangular wave-guide
- Standing Wave-Ratio
- Reflection Coefficient
- Measuring unknown impedance

Communication Link Set: It is a trainer kit for studying characteristics of the communication links. There are 3 kits in this lab. Some of the experiments that can be experimented in this trainer are:

- Attenuation measurement
- Impedance measurement
- Determining Standing Wave-Ratio


Fiber optic and Satellite Communication Lab: In this lab, there are 2 different trainer sets, Fiber optic and Satellite Communication trainer sets.

Fiber Optic Trainer: This trainer set is designed for the study of fiber optic communications systems. There are 5 kits in this lab. Each trainer set contains transmitter, receiver, signal generator, modulation units. Some of the experiments that can be done with this set are:

- Data transmission between two modules
- Data transmission between the module and PC
- ASK Data transmission

Satellite Communication Trainer: It is a trainer kit for studying characteristics of satellite communication systems. There are 5 kits in this lab. Each kit consists of transmitter ground station, satellite link and receiver ground station. The satellite transponder receives signal from uplink transmitter and retransmits at different frequencies to a downlink receiver. The signals that can be transmitted are video, voice and telemetry (temperature and light intensity) in various types.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		SKILLS			QUALIFICATIONS		
	Theoretical	Practical	Conceptual	Practical	Qualification of Independent Working and Taking Responsibility	Learning Qualification	Communication and Social Qualification	Domain-specific Qualification
PO-1	X	X	X	X	X	X		
PO-2	X	X	X	X	X	X		
PO-3	X	X	X	X	X	X		
PO-4	X	X	X	X	X	X		
PO-5	X	X	X	X	X	X		
PO-6	X	X	X	X	X	X		
PO-7	X		X					
PO-8	X		X					
PO-9	X	X	X	X	X	X		
PO-10	X		X					
PO-11	X	X	X	X	X	X		
PO-12	X							
PO-13	X							
PO-14	X							
PO-15	X							
PO-16	X							
PO-17		X	X					
PO-18	X							
PO-19				X			X	
PO-20			X					
PO-21		X			X			X
PO-22							X	

COMPUTER PROGRAMMING COURSE CATALOG

Academic Unit	Department of Computer Programming
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Computer Programming, graduates become qualified to work as computer technicians or programmers.
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from a program, students are required to complete successfully the compulsory and elective courses which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Profile of the Program	The objective of the Programme is to train students to handle computer hardware, software and information technologies that Turkish Air Force needs. Also promoting students on programming languages, computer networks, graphics and animations, web site design, database management and server operating systems are the main outcomes of the Computer Programming Program.
Professional Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of computer programming with the competence to realize and develop the technical applications required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program Learning Outcomes	1. To be able to know computer hardware types, the hardware structures and properties, implementing and installing hardware into the computer. 2. To comprehend the structure, characteristics of basic networking concepts, network topologies, network types and OSI reference model, network hardware, cabling and basic wireless networking concepts. 3. To be able to know the advantages of visual programming, installing a visual programming language on the computer, form design, using form elements and dialogs. 4. To have basic knowledge and skills about information technologies. 5. To be able to know how to use Internet technologies, installing a web server writing codes that can run on Internet, accessing a database through connections. 6. To be able to know the basic concepts of open source operating

	systems, types, installation, administration of an open source OS such as Linux. 7. To be able to comprehend the basic concepts of object oriented programming, classes, objects, memory hierarchies, inheritance, encapsulation and polymorphism. 8. To be able to comprehend the basic principles of operating systems, the place of operating systems in information technologies, administration of server operating systems, hardware, software and user maintaining. 9. To be able to comprehend basic algorithm design and computer programming concepts, data types, variables and input operations, user defined functions, usage of conditional statements, loops, arrays, multidimensional arrays, user defined data types, procedures, functions and files. 10. To be able to know installing client/server architecture based databases, programming in database, preparing an interface, administration of a database server, utilizing SQL commands and preparing reports. 11. To be able to know the laws, data security, cyber security, software security, security standards and cyber threads. 12. To be able to know designing images, banners, graphics and animations that can be utilized in Internet. 13. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 14. To have basic knowledge of constitutional rights, freedoms and duties and to understand the disciplinary rules military personnel are liable to 15. To have basic knowledge of English 16. To have basic knowledge of mathematics and physics and to speak Turkish effectively 17. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk's principles and revolutions and National War of Independence 18. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Turkish Language-I	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Human Factors in Aviation	Required	2	2	0	2	2
Computer Office Applications	Required	3	2	1	3	4
	TOTAL:	**30**	**26**	**4**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-II	Required	8	6	2	7	7
General Aviation English-I	Required	4	2	2	3	3
Turkish Language-II	Required	2	2	0	2	2
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Computer Hardware	Required	2	1	1	2	3
Programming Basics	Required	4	3	1	4	5
Software Installation Management	Required	2	1	1	2	3
Digital Electronics	Required	3	3	0	2	2
Web Design Fundamentals	Required	2	1	1	2	3
	TOTAL:	**29**	**21**	**8**	**26**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Database	Required	4	2	2	3	4
Graphics and Animation	Required	3	2	1	3	3
Visual Programming-I:	Required	4	2	2	3	4
Web Editor	Required	2	1	1	2	3
Network Fundamentals	Required	4	3	1	4	4
TOTAL:		**31**	**20**	**11**	**27**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Server Administration System	Required	3	2	1	3	3
Object Oriented Programming	Required	3	2	1	3	3
Visual Programming-II:	Required	3	2	1	3	3
Internet Programming	Required	4	2	2	3	4
Informatics Security	Required	2	2	0	2	2
Open Source Operating System	Required	2	1	1	2	3
TOTAL:		**31**	**21**	**10**	**28**	**30**

COURSE DESCRIPTIONS

Computer Hardware: The computer hardware types, the hardware structures and properties, implementing and installing hardware into the computer.

Programming Basics: Introduction to basic algorithm design and computer programming concepts, data types, variables and input operations, user defined functions, usage of conditional statements, loops, arrays, multidimensional arrays, user defined data types, procedures, functions and files.

Software Installation Management: Software installation and security arrangements, installation of various operating systems on computers, configuration management of the software

Network Fundamentals: Basic networking concepts, network topologies, network types and OSI reference model, network hardware, cabling and basic wireless networking concepts.

Digital Electronics: Basic Digital Electronics concepts.

Web Design Fundamentals: How web sites and web servers work, the concepts to design and implement a web project. HTML codes, DHTML (dynamic html). This course mainly focuses on to train students to write and run HTML codes without the help of an editor.

Database: Installing client/server architecture based databases, programming in database, preparing an interface, administration of a database server, utilizing SQL commands and preparing reports.

Graphics and Animation: Designing images, banners, graphics and animations that can be utilized in Internet.

Visual Programming-I: Introduction to visual programming, the advantages of visual programming, installing a visual programming language on the computer, form design, using form elements and dialogs. This course is taught via .NET Framework C# programming language in the computer lab.

Web Editor: The concepts to design and implement a state of the art web site via web editors.

Server Administration System: The basic principles of operating systems, the place of operating systems in information technologies, administration of server operating systems, hardware, software and user maintaining.

Object Oriented Programming: The basic concepts of object oriented programming, classes, objects, memory hierarchies, inheritance, encapsulation and polymorphism.

Visual Programming-II: Advanced concepts in visual programming, form design, using form elements, database connection, using Windows applications and registry. This course is taught via .NET Framework C# programming language in the computer lab.

Internet Programming: How to use Internet technologies, installing a web server (apache and IIS) writing codes that can run on Internet, accessing a database through connections, add/delete/update/list database.

Informatics Security: Informatics laws, data security, cyber security, software security, security standards, cyber threads.

Open Source Operating System: The basic concepts of open source operating systems, types, installation, administration of an open source OS such as Linux.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with introductory information about their further classes.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of

democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

Human Factors in Aviation: This course aims to make students gain competence related to effects of human factors on organizational actions in aviation. The course consists of Concepts of Human and Behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

Mathematics-I: This course aims to teach necessary abilities (for students of Air Force NCO Vocational High School) such fast and accurate thinking, building logic, problem solving and to furnish students with basic competencies required for high level courses. During course, Sets and Numbers, Equations and Inequations, Functions, Trigonometry, Complex Numbers, Basic Geometric Terms are explained.

Physics-I: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to

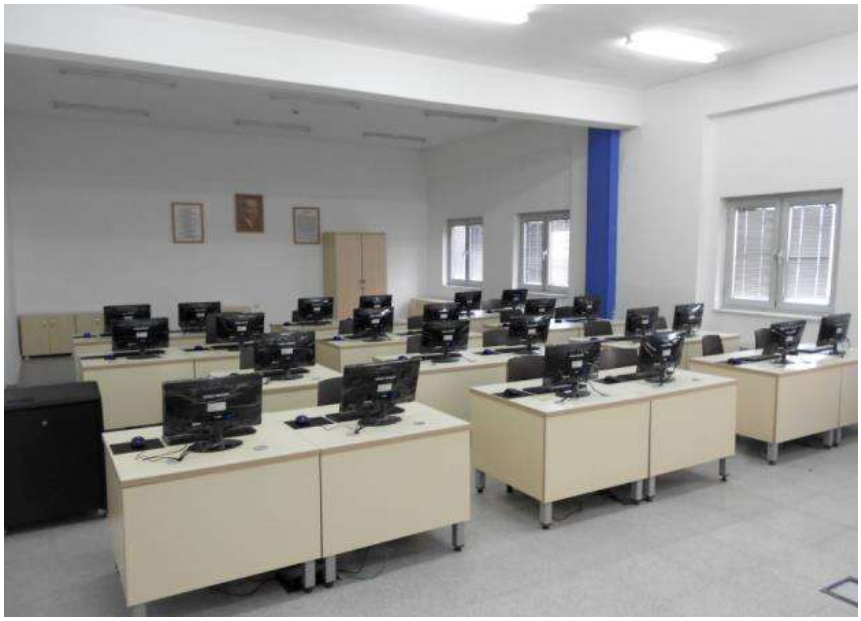
improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

COMPUTER PROGRAMMING PROGRAMME LABORATORIES

The Computer Programming has 2 Computer LABs each having 25 personal computers. All of the 16 programming courses are given in the labs. After lecturing the theoretical concepts, practices and applications are made through PCs by students. With the computer labs the following basic concepts and abilities are improved: Visual programming , web design applications, graphics and animation, Server Operating Systems, Open Source Operating Systems, Computer Network applications etc.



RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		**SKILLS**		**QUALIFICATIONS**			
	Theoretic	**Practical**	**Conceptual**	**Practical**	**Qualification of Independent Working and Taking Responsibility**	**Learning Qualification**	**Communication and Social Qualification**	**Domain-specific Qualification**
PO-1					X			
PO-2	X	X						
PO-3			X	X				
PO-4	X	X	X	X				
PO-5					X			
PO-6								X
PO-7	X							
PO-8							X	
PO-9				X				
PO-10					X			
PO-11		X	X					
PO-12	X							
PO-13				X			X	
PO-14			X					
PO-15		X			X			X
PO-16							X	
PO-17					X	X	X	X
PO-18					X	X	X	X

AUTOMOTIVE TECHNOLOGY PROGRAMME COURSE CATALOG

Academic Unit	Department of Automotive Technology
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Automotive Technology, graduates become qualified to work as Automotive technicians.
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from a program, students are required to complete the compulsory and elective courses successfully which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Definition of the Program	This program trains non-commissioned officers on the branches of transportation and military engineering at the capability of doing all kinds of maintenance and repair to the road vehicles inside the inventory of Air Force Command., with Associate Degree.
Professional Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of automotive technology with the competence to realize and develop the technical applications required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program outcomes	18. To be able to do the detection of the malfunction and supply maintenance and repair the automotive electrics and electronics safely. 19. To be able to use the measurement devices and methods of measuring on the field about the profession.

	20. To know the basic terms about the machine elements and calculations, recognizes the materials that the parts of the engines and their made of, draws the basic technical drawing detects the correct part number by reading the drawing of the related part from maintenance catalogs. 21. To be able to do detection of the malfunction and supply maintenance and repair of the fuel, ignition and injection systems of gasoline , diesel and alternative engines safely. 22. To be able to use the basic thermodynamic terms and the theory of the ignition and fuel on the fields about the profession. 23. To be able to do the detection of the malfunction and supply maintenance and repair of the power transmission of the power operated vehicles and the movement control systems. 24. To be able to recognize hydraulic and pneumatic systems , read the schemes of circuit and establish the circuit that can perform a specific task. 25. To be able to do the detection of the malfunction and supply the maintenance and repair the engine, adjust devices and adjustment machinery on the engine ,cooling lubrication systems safely. 26. To be able to do the detection of the malfunction and supply maintenance and repair about the comfort systems. 27. To be able to do the detection of the malfunction and supply the maintenance and repair of the heating and cooling systems on the motorized road vehicles. 28. To be able to take the precautions about the worker's health and job security during the work. 29. To be able to learn the types of the emission gasses that come out at the end of combustion processes at the engines of the vehicles. 30. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 31. To have basic knowledge of constitutional rights, freedoms and duties and to understand the disciplinary rules military personnel are liable to 32. To have basic knowledge of English 33. To have basic knowledge of mathematics and physics and to speak Turkish effectively 34. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk's principles and revolutions and National War of Independence 35. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Turkish Language-I	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Human Factors in Aviation	Required	2	2	0	2	2
Computer Office Applications	Required	3	2	1	3	4
TOTAL:		**30**	**26**	**4**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-II	Required	8	6	2	7	7
Turkish Language-II	Required	2	2	0	2	2
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
General Aviation English-I	Required	4	2	2	3	3
Automotive Electrics	Required	3	2	1	3	3
Measurement Techniques	Required	2	1	1	2	2
Machine Elements	Required	2	1	1	2	3
Engine Technology	Required	4	2	2	3	5
Thermodynamics	Required	2	2	0	2	3
TOTAL:		**29**	**20**	**9**	**26**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Fuel and Ignition Systems of Plug Sparking Engine	Required	3	2	1	3	3
Power Transmission Units	Required	4	2	2	3	4
Automotive Mechatronics	Required	4	2	2	3	4
Technical Drawing	Required	3	1	2	2	4
Hydraulic and Pneumatic Systems	Required	3	2	1	3	3
TOTAL:		**31**	**19**	**12**	**26**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Diesel Engines and Fuel Injection Systems	Required	4	2	2	3	4
Movement Control Systems	Required	4	2	2	3	4
Engine Test and Adjustments	Required	4	1	3	3	3
Heating and Cooling Systems	Required	2	1	1	2	3
Labor Safety and Laborer Health	Required	1	1	0	1	1
Comfort Systems	Required	1	1	0	1	2
Emission Control Systems	Required	1	1	0	1	1
TOTAL:		**31**	**19**	**12**	**26**	**30**

COURSE DESCRIPTIONS

Automotive Electrics: In this course, basic electrical principles, ignition systems, starting systems, charging systems and other electrical components of the vehicle are introduced.

Measurement Techniques: In this course, measurement and control definitions, application areas in the industry, operation and maintenance of measuring devices and apparatus, sensitivity limits, calibration and use in applications are being taught.

Machine Elements: In this course the basic concepts of machine elements, removable fasteners, motion transmission elements, shafts, axles and bearings are introduced to students.

Engine Technology: In this course, Otto engine principles, the structural characteristics of gasoline engines, gasoline engines constituent parts, gasoline engine found in the introduction and implementation of the system are taught to students.

Technical Drawing: In this course, the technical picture of the importance of technical drawing norms, the drawing rules, creating views, sectioning, dimensioning and perspective are taught to students.

Comfort Systems: In this course, the safety and comfort systems on the vehicle are introduced to students.

Fuel and Ignition Systems of Plug Sparking Engine: In this course, conventional ignition systems disadvantages of eliminating targeting various electronic ignition systems repair and maintenance, and the best combustion to ensure the fuel is sprayed allowing different fuel injection systems are introduced and practiced in lessons.

Power Transmission Units: In this course, aim is to give basic information about the study and application of theoretical knowledge to understand the reality and the intelligibility and keeping abreast of technological developments in the driveline aims to give culture about vehicle powertrain

Automotive Electronics: In this course, basic automotive electronics, system failures, their work, both theoretical and practical troubleshooting methods for students to comprehend in automotive electronics, troubleshooting, fault detection methods are aimed to gain skills.

Thermodynamics: In this course, the aim is to introduce basic concepts of thermodynamics, work, laws of thermodynamics, cycles, motor cycles, power, efficiency of expression, on the theory of combustion and fuels are intended to gain qualifications.

Hydraulic and Pneumatic Systems: In this course, students learn about the basic concepts and principles of operation of circuit elements, architectures, using circuit elements that will make the desired task to gain the ability to establish circuits.

Labor Safety and Laborer Health: In this course, students are taught workers' health and safety, the importance of the workshop environment while working in the measures to be taken, work accidents and ways to protect this direction with the legislation to comprehend, first aid techniques and recycled waste properly can store aims.

Diesel Engines and Fuel Injection Systems: In this course, the introduction of diesel engine fuel system components, maintenance and repairing and strengthening with practice lessons, new technology has been introduced to the injection system.

Movement Control Systems: In this course, students learn about vehicle movements used in the control, pre-order, steering, brakes, adverse conditions that activates electronic systems, suspension systems, introduction and practice lessons reinforced by maintenance repair of its ability.

Engine Test and Adjustments: In this course, engines and systems, physical controls, diagnostic test device and engine systems and ECU memory faults in the deletion are introduced and practiced to reinforce the aims.

Heating and Cooling Systems: In this course, vehicles belonging to the introduction of air conditioning and heating systems forming part of the maintenance, repair and reinforce the capabilities and applications aimed to gain.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

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Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Air Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

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Human Factors in Aviation: This course aims to make students gain competence related to effects of human factors on organizational actions in aviation. The course consists of Concepts of Human and Behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills,

overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+ - A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

AUTOMOTIVE TECHNOLOGY PROGRAMME LABS

Engine Laboratory: This laboratory provides students with the automotive technology and forms the basis of the engine in the understanding of the basic principles of the theoretical and practical teach, spark ignition engines, ignition, fuel injection systems, diesel engine fuel injection systems, cooling and lubrication systems used in these systems the electronic control unit issues, through a tool assembly and disassembly is intended to improve the manual skills by building applications.

Power Transmission Laboratory: This laboratory provides students with the automobile motion control systems under the pre-order, suspension, steering, brake systems, powertrain covered, clutch, transmission, axles, active passive safety features, issues vehicle making assembly and disassembly is intended to develop the skills on hand.

Electric-Electronic Laboratory: This laboratory provides students with electrical fundamentals, applications in the car, how electrical energy is supplied, via the sensors used in vehicle assembly and disassembly procedures heating, cooling and comfort systems covered, heating, air conditioning, intended to improve the dexterity of the students are doing.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		SKILLS		QUALIFICATIONS			
	Theoretic	Practical	Conceptual	Practical	Qualification of Independent Working and Taking Responsibility	Learning Qualification	Communication and Social Qualification	Domain-specific Qualification
PO-1	X	X		X				
PO-2	X	X		X	X			
PO-3	X	X		X	X			
PO-4	X	X		X				
PO-5	X			X	X			
PO-6	X							
PO-7	X	X		X	X			
PO-8	X	X		X				
PO-9		X	X					
PO-10			X					
PO-11	X		X		X			
PO-12	X			X				
PO-13		X	X					
PO-14	X							
PO-15				X			X	
PO-16			X					
PO-17		X			X			X
PO-18							X	

CONSTRUCTION TECHNOLOGY PROGRAMME COURSE CATALOG

Academic Unit	Department of Construction Technology
Programme Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Construction Technology, graduates become qualified to work as construction technicians
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from the program, students are required to complete the compulsory and elective courses successfully which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Definition of Program	Construction Technology Programme; to train modern and qualified construction technicians being educated on international quality standards on the subject, being at the highest practice ability, mastering the quality control and standards about the profession, adopting the ethical values of the job and protecting them, realizing the importance of life-long learning and dealing with technological development.
Professional Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of Construction technology with the competence to realize and develop the technical applications required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs; Civil Engineering and Architecture to enhance their academic skills and career.

Program Learning Outcomes	1. To be able to detect failures that occur during construction applications and determine to resolve appropriate design methods. 2. To be able to have drawing skills with using CAD (Computer Aided Design) and technical draws. 3. To be able to organize technical reports, bill of quantity, prepare tender file, calculate cost of a building and make the requirements of a building delivery. 4. To be able to determine water supply with transfer methods and calculate underground or aboveground resources flow. 5. With detecting appropriate road destination on the map one is able to calculate filling and splitting operations an determine road upper layer materials. 6. To be able to set up building sites and make work plans with filling the daily report book and to have the ability to control the construction products. 7. To be able to identify the main concepts of the topography and calculate the longitudinal / cross section and plankote of the field. 8. To be able to calculate the quantitiy of column, beam, floor and basic section that performs the construction of the structure. 9. To be able to calculate isostatics and hyperstatics structure frame systems. 10. To be able to determine center of gravity of the construction of the structure and calculate the stress, pressure and cutting tension. 11. To be able to determine the general properties of ground; can make the necessary experiment applications and can calculate ground carry force with determining the consolidation methods. 12. To be able to know the main properties of the components that are using at making the concrete and asphalt pavement road and to determine the appropriate of the component which will use, able to make necessary experiments. 13. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 14. To have basic knowledge of constitutional rights, freedoms and duties and to understand the disciplinary rules military personnel are liable to 15. To have basic knowledge of English 16. To have basic knowledge of mathematics and physics and to speak Turkish effectively 17. To have knowledge about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk's principles and revolutions and National War of Independence 18. To get to know oneself as an individual, to be aware of human

	factors affecting administration and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Turkish Language-I	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Computer Applications in Microsoft Office	Required	3	2	1	3	4
Organizational Behavior-I	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
TOTAL:		**30**	**26**	**4**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Turkish Language-II	Required	2	2	0	2	2
English Language-II	Required	8	6	2	7	7
General Aviation English-I	Required	4	2	2	3	3
Mathematics-II	Required	2	2	0	2	3
Building Materials	Required	3	2	1	3	4
Soil Mechanics-I	Required	2	1	1	2	3
Building Installations	Required	3	3	0	3	3
Technical Drawing	Required	3	2	1	3	3
TOTAL:		**29**	**22**	**7**	**27**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Computer Aided Design	Required	3	2	1	3	3
Structure Static	Required	4	4	0	4	3
Soil Mechanics-II	Required	4	2	2	3	4
Structure Feature and Cost	Required	4	2	2	3	5
Land Measurements	Required	2	1	1	2	2
TOTAL:		**31**	**21**	**10**	**27**	**29**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Water Supply And Transmission	Required	2	2	0	2	2
Asphalt Concrete Technology	Required	4	2	2	3	4
Road Construction	Required	2	1	1	2	3
Professional Application	Required	3	2	1	3	3
Site Organization	Required	2	2	0	2	3
Reinforced Concrete	Required	4	4	0	4	4
	TOTAL:	**31**	**23**	**8**	**28**	**31**

COURSE DESCRIPTIONS

Strength of Materials: This course aims to teach students about the determination of the affect of the compressive strength properties of the carrier systems in the design of the cross section and analysis of the section affects the ability to section for analysis that occurred related to basic qualifications, is intended to gain.

Land Measurements: This course aims to teach students how to use measurement tools which are necessary to place the structure on the land it will be built on and to provide students with basic information about the calculations.

Asphalt Concrete Technology: This course aims to teach students about the ordered concrete and asphalt in order to conform to the basic level of the production stages and to conduct experiments about concrete, asphalt, aggregates and cement, and to give basic information about the features and deterioration of covered areas.

Reinforced Concrete: This course aims to teach students about the amount of carrier systems and equipment sizing, reinforcement cross section area placement to gain basic qualifications to design-related.

Computer-Aided Drawing: This course provides students with basic professional drawings using AutoCAD program, are intended to gain qualifications.

Road Construction: This course aims to teach the students the Construction of the road and runway Construction phases by giving information about the top and bottom of the road building materials, road geometric standards (project speed, width, slope, incline, curve, and so on) and it is intended to gain qualifications related to the calculation of the base.

Professional Applications: In this course, it is intended to be given to the students with the profession related to masonry, plaster and coating techniques, equipment preparation stages with job and basic information about the patterns and jetties.

Water Supply and Transmission: In this course, it is intended to make students gain the basic information with the surrounding water, underground and above ground waters, free flow and calculation of flow demand.

Construction Site Organization: This course aims to prepare students with the construction site environment by controlling the production being done in accordance with the business program, including manufacturing and payment and basic information about the work being done with temporary and final acceptance.

Technical Drawing: This course aims students to gain basic qualifications related to the drawing by using the technical drawing tools and equipment, perspective and projection drawing .

Building Materials: This course aims the students to know the main materials used in the Construction work and to comprehend the general characteristics of these materials and to gain basic qualifications related to the classification of heat, sound, water, and fire insulation materials.

Structure Feature and Cost: This course provides students with skills to discover, feature and estimate the cost accounts and do the calculations for moving the vessel from the Project and feature addition operations; According to the applicable law, this course helps students to make tender preparation, and according to the applicable law to tender a contract with a contract or for the vessel in tended to gain basic qualifications.

Structural Static: This course provides students with making internal force analysis of isostatic and hyperstatic systems there by designing information required for designation and interpretation by drawing the cross section of these systems affect diagrams, cage systems, frame and gaining qualifications related to the internal force calculations for the Gerber beams.

Building Systems: This course provides students with the basic qualifications on the systems such as, plumbing, heating and waste water and wiring used in the structures.

Soil Mechanics: This course provides students with the calculation of the spatial compression of the floors, seating, flooring and transportation power and endurance of floors and improving methods, besides by using soil mechanics lab tools, discovering the overall structure of the floors, and the index details by conducting experiments appropriate for the standards.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with information about the basic level of the upper classes to provide basic competencies to follow.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Air Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

Human Factors in Aviation: This course aims to make students gain competence related to effects of human factors on organizational actions in aviation. The course consists of Concepts of Human and Behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

Mathematics-I: This course aims to teach necessary abilities (for students of Air Force NCO Vocational High School) such fast and accurate thinking, building logic, problem solving and to furnish students with basic competencies required for high level courses. During course, Sets and Numbers, Equations and Inequations, Functions, Trigonometry, Complex Numbers, Basic Geometric Terms are explained.

Physics-I: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills,

overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this course is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this course is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this course is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This course is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-II: This course is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+ - A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This course is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

CONSTRUCTION TECHNOLOGY PROGRAMME LABS

Concrete Asphalt-Building Materials Laboratory: It aims to teach students about the following subjects: Detection of concrete and cement pressure, free weight determination of the building materials, detection of softening points of asphalt and concrete, determination of the consistency of concrete, detection of the reinforcement in the existing structures, and, determination of granulometry of aggregate material granulometry.

Soil Mechanics Laboratory: It aims to teach students about the following subjects: Determination of consistency limit of materials, determination of the dry and saturated weight of aggregate material, determination of softening point of floor, determination of shear strength of the ground, calculation of liquid limit and plastic limit of the ground, calculation of the in time consolidation amount of the ground sample.

Field Measurements Laboratory: It aims to teach students about these subjects: Computations of the distance / area / angle and volume electronically, the determination of differences in terrain elevation, determination of the coordinate points of the terrain.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		**SKILLS**		**QUALIFICATIONS**			
	Theoretical	**Practical**	**Conceptual**	**Practical**	**Qualification of Independent Working and Taking Responsibility**	**Learning Qualification**	**Communication and Social Qualification**	**Domain-specific Qualification**
PO-I					X			
PO-II	X	X						
PO-3			X	X				
PO-4	X	X	X	X				
PO-5					X			
PO-6								X
PO-7	X							
PO-8							X	
PO-9				X				
PO-I0					X			
PO-I1		X	X					
PO-I2	X							
PO-I3				X			X	
PO-I4			X					
PO-I5		X			X			X
PO-I6							X	

ELECTRICAL TECHNOLOGY PROGRAMME COURSE CATALOG

Academic Unit	Department of Electric Electronic and Communication
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Electrical Technology, graduates become qualified to work as electricians.
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from a program, students are required to complete successfully the compulsory and elective courses which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Profile of the Program	This program trains technicians who are high qualified, think analytically, eager for development and innovation, internalize the principle of lifelong learning, regard national values, have sufficient theoretical knowledge to be employed in the work areas of electricity in Turkish Air Force.
Professional Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of electrical technology with the competence to realize and develop the technical applications required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program Learning Outcomes	21. To be able to define basic properties of direct current (DC) and alternating current (AC), to analyze DC and AC reactions of electric circuit elements, to calculate current, voltage and power calculations in electrical circuits. 22. To have knowledge about the structure and working principle of electrical measurement instruments, to make electrical measurements by applying the principles of safety. 23. To have knowledge about the structure and properties of semiconductor materials, to realize electronic circuit designs using analog and digital electronic circuit elements. 24. To have knowledge about electromechanical control systems, to control the electrical machines required to control the power and control circuits, to realize control circuit connections.

	25. To use programmable logic controllers to design the automation systems, software, various sensor and motor groups to perform assembly. 26. To have knowledge about the structure of electrical machines, working principles and control devices. 27. To be able to recognize indoor and outdoor lighting elements, to make lighting calculations and to draw projects. 28. To be able to recognize high voltage circuit elements, high voltage maintenance, finding fault and repairing and to have knowledge about safe operation rules. 29. To be able to plan and design electrical projects by using the laws and regulations in his field, to design electrical projects, to prepare contracts and specifications. 30. To be able to perform the necessary measurements and calculations in order to provide energy efficiency in electrical system. 31. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system. 32. To have basic knowledge of constitutional rights, freedoms and duties and to understand the disciplinary rules military personnel are liable to 33. To have basic knowledge of English 34. To have basic knowledge of mathematics and physics and to speak Turkish effectively 35. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk's principles and revolutions and National War of Independence 36. To get to know oneself as an individual, to be aware of human factors affecting conduction and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Atatürk's Principles and the History of Turkish Revolution-1	Required	2	2	0	2	2
Turkish Language-I	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Human Factors in Aviation	Required	2	2	0	2	2
Computer Applications in Microsoft Office	Required	3	2	1	3	4
TOTAL:		**30**	**26**	**4**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Turkish Language-II	Required	2	2	0	2	2
English Language-II	Required	8	6	2	7	7
General Aviation English-I	Required	4	2	2	3	3
Electronic Measurement Techniques	Required	3	2	1	3	4
Direct Current Circuit Analysis	Required	4	3	1	4	5
Digital Electronics	Required	3	2	1	3	3
Alternating Current Circuit Analysis	Required	3	2	1	3	4
TOTAL:		**29**	**21**	**8**	**27**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Fundamentals of Electronic	Required	3	2	1	3	3
Electromechanical Control Systems	Required	3	2	1	3	3
Computer Aided Circuit Design	Required	2	1	1	2	2
Planning, Exploratory and Contract	Required	2	2	0	2	3
Techniques of Electrical Installations	Required	3	2	1	3	3
Direct Current Machines and Transformers	Required	4	3	1	4	4
TOTAL:		**31**	**22**	**9**	**29**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Transmission and Distribution of Electricity	Required	2	2	0	2	2
Power Electronics	Required	2	1	1	2	2
Asynchronous and Synchronous Machines	Required	4	3	1	4	4
Programmable Logic Controllers(PLC)	Required	3	1	2	2	3
Techniques of Special Installations	Required	3	2	1	3	4
Techniques of High Voltages	Required	3	3	0	3	3
TOTAL:		**31**	**22**	**9**	**28**	**30**

COURSE DESCRIPTIONS

Electronic Measurement Techniques: The objectives of this course are to comprehend the basic principles of measurement and the types of measurement errors, to teach the working principles of measuring instruments, to achieve the ability of measuring electrical, electronic and mechanical quantities, to make the measurement with the oscilloscope, to comprehend the measuring transformers, making measurements related to power and energy, to teach what the occupational risk factors are, to achieve awareness of the need for job security and to achieve the ability of providing of the work safety.

Direct Current Circuit Analysis: The objectives of this course are to acquire the ability of analyzing the electric circuit of the basic branches of the science of electricity and to achieve the ability of applying the basic theorems and the methods of circuit solution. Course Contents are static electricity, taking precautions against the unpredictable effects of electrical current, direct current circuit analysis, loop currents method, node voltages method, and resource links.

Digital Electronics: The objectives of this course are to teach number systems, to comprehend truth tables and electrical properties of logic Gates, to acquire the ability of designing digital circuits using Boolean algebra and Karnaugh maps, to acquire the ability of applying combinational logic circuits, arithmetic operation circuits, counters, registers, multivibrators and flip-flops, to be able to comprehend analog-to-digital and digital-to-analog converters.

Alternating Current Circuit Analysis: The objectives of this course are to enable the students to acquire the knowledge and skills about circuit solution of alternative current and to calculate them. Course contents are alternative current load types, the basic concepts of ac electrical circuits, the solution methods of the circuits in continuous mode, resonant circuits, filtering, power factor correction and power.

Fundamentals of Electronic: The objectives of this course are to learn semiconductor materials and their properties, to comprehend their structure, types, properties and operating principles of semiconductor circuit devices and to acquire the ability of analyzing the circuits which have semiconductor circuit devices.

Electromechanical Control Systems: The aim of this course is to teach students to use the control circuit elements and control elements on the installation, one-phase and three-phase induction motors running, to change the direction of rotation, the braking will be able to. This course includes control elements, protection relays, discrete and continuous operation three-phase asynchronous motors, three-phase asynchronous motors in two places (remote) operation, three-phase asynchronous motors changing direction speed, three-phase asynchronous motors resistance starters, winding rotor induction motors starters.

Computer Aided Circuit Design: The aim of this course is to teach students how to design and simulate various electrical electronic circuits using computer aided drawing and circuit design programs. This course includes various electrical electronic simulations and PCBs.

Planning, Exploratory and Contract: The aim of this course is to teach students project studies, planning, making reconnaissance; it is aimed to gain competencies in preparing the contract and specifications. This course includes building regulations, discovery, and special installations of line specifications, topographic information, underground cable plant line, regulations and security systems.

Techniques of Electrical Installations: The aim of this course is to enable the students to acquire and apply the knowledge and skills related to low current, circuits of lighting and heavy current installation. This course includes conductors and insulators, cable laying equipment, low-current materials, and types of electrical circuits, application circuits of low current installation, lighting and power socket circuit elements, making high current installations, assembling header cable and making underground line cables.

Direct Current Machines and Transformers: The aim of this course is to teach the students DC Machines, transformers, principles, making calculations, assessing the results of different working patterns. This course includes the definition of DC machines and transformers, sample solutions, interpretation of the connection and the way it works.

Transmission and Distribution of Electricity: The aim of this course is to teach the students; all elements equipment, types, working principles and choice principles of electrical energy produced in power plants,

providing efficient and safe delivery to consume.

Power Electronics: The objectives of this course are to learn basic concepts related to power electronics and power semiconductor and the working characteristic of power electronic circuits.

ttt the assessment of results of different working patterns. This course includes asynchronous and synchronous machines definitions, and sample solutions, and interpretation of the connection and the way it works.

Programmable Logic Controllers (PLC): The aim of this course is to teach the students; the basic principles of the PLC, PLC programming, basic logic operations, basic functions and commands.

Techniques of Special Installations: The aim of this course is to teach students all ends of the presence of specially designed engines, start-up aimed to gain qualifications for connecting and operating procedures. This course includes installations to make compensation lightning installations, grounding installations, safety systems installation.

Techniques of High Voltages: The aim of this course is to teach students to provide a deeper insight into the technical characteristics of the specific devices that are used in the high voltage field. Emphasis is put on the technological and engineering modifications that occur when voltage reaches very high values. This course includes AC and DC electric transmission systems, standards related to high voltages, high voltage equipment, substations and distribution systems in basic level, generation of high voltages, and measurement of high voltages.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with introductory information about their further classes.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

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Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

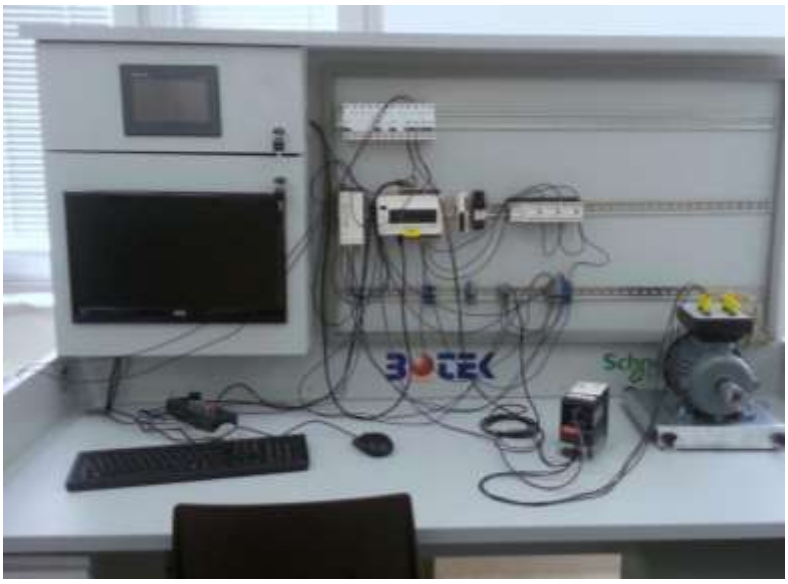
General Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

ELECTRICAL TECHNOLOGY PROGRAMME LABORATORIES

Electric Machines and Control Techniques Laboratory: The purpose of the Electric Machines and Control Techniques Laboratory is to provide students with experience related to the connections, tests and characteristics of transformers, direct current machines, asynchronous and synchronous machines as well as handling of the most basic instrumentation used in today's industry. In addition, students can have experience on discrete and continuous operation of three-phase asynchronous motors, three phase asynchronous motors in two places (remote) operation, three-phase asynchronous motors changing direction speed.

Electrical Installation of Structures and Electrical Compensation Laboratory: The purpose of the Electrical Compensation Laboratory is to provide students with experience related to electrical systems which include motors and ballasts and so that need to be compensated, tests and characteristics of reactive power, importance of power factor (CosQ) for installations, the connections, tests, operations and characteristics of compensated electrical systems. Electrical Installation of Structures Laboratory: The purpose of the Electrical Installation of Structures Laboratory is to provide students with experience related to the application circuits of low current installation, lighting and power socket circuit elements, technical characteristics of the specific devices that are used in electrical installations, special installations of line specifications.



Programmable Logic Controller (PLC) Laboratory: In this laboratory students can program programmable logic controller (PLC) with ladder diagram and function blocks, win his programming proficiency with touch panel, can make speed control, operator control and motor control applications.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		**SKILLS**		**QUALIFICATIONS**			
	Theoretical	**Practical**	**Conceptual**	**Practical**	**Qualification of Independent Working and Taking Responsibility**	**Learning Qualification**	**Communication and Social Qualification**	**Domain-specific Qualification**
PO-1					X			
PO-2	X	X						
PO-3			X	X				
PO-4	X	X	X	X				
PO-5					X			
PO-6								X
PO-7	X							
PO-8							X	
PO-9				X				
PO-10					X			
PO-11		X	X					
PO-12	X							
PO-13				X			X	
PO-14			X					
PO-15		X			X			X
PO-16							X	

MECHATRONICS PROGRAMME COURSE CATALOG

Academic Unit	Department of Technology Sciences
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate Degree program of Mechatronics, students are eligible to work as mechatronics technicians.
Mode Of Study	Full-Time
Duration of the Program	2 years (4 semesters).
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order to graduate from this program, students are required to complete the compulsory and elective courses, which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Profile of the Program	Mechatronics Programme; The aim of this course is to educate modern aviator mechatronics technician NCO, who is equipped with facts and skills to serve in all areas of Mechatronics profession and who has adopted solution-oriented development and continuous learning.
Professional Profile of Graduates	The program aims to educate NCOs with occupational safety and responsibility as exposed to continuous learning, having mechatronics profession as a lifestyle, understanding the operation, maintenance and repair of mechanical, electrical and electronic systems.
Access to Further Career	The graduates of this program can apply to Bachelor's Degree programs to enhance their academic skills and career.

Outcomes of Mechatronics Program	
Mechatronics Programme	21. To be able to define the basic concepts of direct current and alternating current, to analyze the electrical currents of the circuit elements in direct current and alternating current, to be able to calculate current, voltage and power calculations in electrical circuits. 22. To have facts about the structure and working principle of electrical measurement instruments, to be able to make electrical and mechanical measurements by applying the safety principles. 23. To have knowledge about the structure and properties of semiconductor materials, to realize electronic circuit designs using analog and digital electronic circuit elements. 24. To have knowledge about the structure, working principles, control devices and driver circuits of electric motors, to be able to realize the necessary connections and measurements for the control of electrical machines. 25. To be able to recognize the electromechanical control systems, to design the power and control circuits required to control the electronical systems, to realize the control circuit elements and programmable applications. 26. To be able to design and simulate various electrical electronic circuits by using computer-aided drawing and circuit design. 27. To understand the logic of the algorithm and structure of programming languages, to be able to realize the algorithm and software of a programming language and to have knowledge about the hardware structure of microprocessors and microcontrollers. 28. To have knowledge about sensors and transducers used in mechatronic systems, to select and implement suitable sensors/converters in different types of applications. 29. To be able to interpret the basic principles and properties of the control systems, to explain the properties of the proportional-integral-derivative (PID) controllers, to be able to make steady state errors and stability analysis in control systems. 30. To be able to explain the basic principles of material knowledge, mechanics, electronics, sensors, wave motion and sound in the scope of the basic technologies of mechatronic systems. 31. To know the mechanical parts used in mechatronic systems and machine assembly parts, to explain the working principles. 32. To be able to recognize hydraulic and pneumatic systems, to explain the tasks of circuit elements such as valves and cylinders. 33. To know steel based materials used in mechatronic systems. To be able to explain the mechanical properties of materials, tests such as tensile, compression, torsion and impact. 34. To have knowledge of terminology in aviation and technical English. 35. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs in this operating system.

	36. Knowing the fundamental rights, freedom and duties mentioned in the constitution at a basic level, learning the principles of discipline subject to the soldiers. 37. Having basic knowledge of English. 38. To have basic knowledge of mathematics and physics and to speak Turkish effectively. 39. To know about the activities intended to enhance corporate belonging and those related to recent history aviation, to master Atatürk's principles and revolutions and National War of Independence. 40. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Physics-I	Required	3	2	1	3	3
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Turkish Language-I	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Fundamental Law	Required	2	2	0	2	2
Fundamental Aeronautics	Required	1	1	0	1	1
Human Factors	Required	2	2	0	2	2
Office Applications-I	Required	3	2	1	3	4
	Total:	**30**	**26**	**4**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Turkish Language-II	Required	2	2	0	2	2
English Language-II	Required	8	6	2	7	7
General Aviation English-I	Required	4	2	2	3	3
Fundamentals of Mechatronics	Required	3	3	0	3	4
Mechatronics Measuring Technique	Required	3	2	1	3	4
Direct Current Circuit Analysis	Required	4	3	1	4	5
Digital Electronics	Required	3	2	1	3	3
	Total:	**29**	**22**	**7**	**27**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Fundamentals of Electronics	Required	3	2	1	3	3
CAD-1	Required	2	1	1	2	2
Alternating Current Circuit Analysis	Required	3	2	1	3	4
Machine Elements and Mechanisms	Required	3	2	1	3	3
Material Technology	Required	2	2	0	2	2
Microprocessors/ Microcontrollers	Required	4	2	2	3	4
	Total:	**31**	**21**	**10**	**28**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
CAD-2	Required	2	0	2	1	2
Electric Motors and Drivers	Required	4	3	1	4	4
Electromechanic Control and PLC	Required	4	2	2	3	4
Automatic Control Systems	Required	2	2	0	2	3
Sensor and Transducers	Required	2	1	1	2	2
Hydraulic and Pneumatic Systems	Required	3	2	1	3	3
	Total	**31**	**20**	**11**	**27**	**30**

COURSE DESCRIPTIONS

Fundamentals of Mechatronics: In this course, basic mechanical systems, basic principles of kinematics, sensors and basic physics are explained.

Mechatronics Measuring Technique: In this course, safety measures and occupational safety, basic concept of measurement, measurement methods, and basic measurement instruments are explained.

Direct Current Circuit Analysis: The objectives of this course are to achieve the ability of analyzing the electric circuit of the basic branches of the science of electricity and to achieve the ability of applying the basic theorems and the methods of circuit solution.

Digital Electronics: The objectives of this course are to teach number systems, to comprehend truth tables and electrical properties of logic Gates, to achieve the ability of designing digital circuits using Boolean algebra and Karnaugh maps, to achieve the ability of applying combinational logic circuits, arithmetic operation circuits, counters, registers, multivibrators and flip-flops, to comprehend analog to digital and digital to analog converters.

Basic Electronic: Electron Theory, Static Electricity and Conduction, Electrical Terminology, Generation of Electricity, DC Sources of Electricity, DC Circuits, Resistance/Resistor, Power, Capacitance/Capacitor, Inductance/Inductor, Magnetism, Magnetic induction, AC Theory, AC Circuits, Transformers, motor and generators.

CAD I/II: In this course, the basic drawings, perspective drawing, 2D and 3D drawings, machine elements drawings are explained using the package program.

Material Science: Mechatronics material types, mechanics and strength of materials, heat treatments of materials, definition and types of corrosion, bolt identification, springs, bearings, and transmissions are explained.

Alternating Current Circuit Analysis: The objectives of this course are to enable the students to acquire the knowledge and skills about circuit solution of alternative current and to calculate them. Course contents are alternative current load types, the basic concepts of ac electrical circuits, the solution methods of the circuits in continuous mode, resonant circuits, filtering, power factor correction and power.

Machine Elements and Mechanisms: In this course, connection elements, joining methods, degree of freedom of movement, motion analysis, and mechanism sizing rules are explained.

Microprocessors and Microcontrollers: The objectives of this course are to teach the historical development of microprocessor and microcontrollers, to understand the duties and operation of the microcontroller hardware units, to understand the difference between high-level languages and low-level languages to gain microcontroller-programming skills with assembly language, to gain basic microcontroller programming skills with high level language. Course contents are; differences between microprocessor systems and microcontroller systems, microcontroller systems, programmer cards, translation program to machine language, installation the compiled program to microcontroller, algorithms, flow diagrams, microcontroller memory map, microcontroller commands, microcontroller editor program, the basic blocks of the microcontroller program, basic input/output programs, compile the microcontroller program, operation compiled program step by step, button and led applications with microcontroller, 7 segment display applications with microcontroller, keypad applications with microcontroller, LCD applications with microcontroller.

Electric Motors and Drivers: The aim of this course to teach the students asynchronous and synchronous machines, and principles, calculations have been made and the assessment of results of different working patterns. This course includes asynchronous and synchronous machines definitions, and sample solutions, and interpretation of the connection and the way it works.

Electromechanic Control and PLC: The aim of this course is to teach students to use the control circuit elements and control elements on the installation; one-phase and three-phase induction motors running, to change the direction of rotation, the braking will be able to. This course includes control elements, protection relays, discrete and continuous operation three-phase asynchronous motors, three-phase asynchronous motors in

two places (remote) operation, three-phase asynchronous motors changing direction speed, three-phase asynchronous motors resistance starters, winding rotor induction motors starters.

Automatic Control Systems: In this course, open-loop and closed-loop control systems, speed control methods, proportional-integral-derivative (PID) control systems are described.

Sensors and Transducers: In this course, the students will learn temperature, humidity and pressure sensors, position, velocity and vibration sensors, approach and level sensors, flow and pulse (force) sensors.

Hydraulic and Pneumatic Systems: In this course, students learn the basic concepts and principles of operation of circuit elements architectures, using circuit elements that will make the desired task is to gain the ability to establish circuits.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with introductory information about their further classes.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

Human Factors in Aviation: This course aims to make students gain competence related to effects of human factors on organizational actions in aviation. The course consists of Concepts of Human and Behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

Mathematics-I: This course aims to teach necessary abilities (for students of Air Force NCO Vocational High School) such fast and accurate thinking, building logic, problem solving and to furnish students with basic competencies required for high level courses. During course, Sets and Numbers, Equations and Inequations, Functions, Trigonometry, Complex Numbers, Basic Geometric Terms are explained.

Physics-I: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file

management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

MECHATRONICS PROGRAMME LABS

Electric Machines and Control Techniques Laboratory: The purpose of the Electric Machines and Control Techniques Laboratory is to provide students with experience related to the connections, tests and characteristics of transformers, direct current machines, asynchronous and synchronous machines as well as handling of the most basic instrumentation used in today's industry. In addition, students can have experience on discrete and continuous operation of three-phase asynchronous motors, three-phase asynchronous motors in two places (remote) operation, three-phase asynchronous motors changing direction speed.

Programmable Logic Controller Laboratory: In this laboratory, students can program programmable logic controller (PLC) with ladder diagram and function blocks, win his programming proficiency with touch panel, can make speed control, operator control and motor control applications.

Hydraulics/ Pneumatics Laboratory: Hydraulic and electro-hydraulic circuits are operated by using these training sets. These circuit elements are hydraulic tank, pump, valves, cylinders etc. Pneumatic and electro-pneumatic circuits are operated by using these training sets. These circuit elements are tank, pump, valves, cylinders etc.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		SKILLS		QUALIFICATIONS			
	Theoretic	Practical	Conceptual	Practical	Qualification of Independent Working and Taking Responsibility	Learning Qualification	Communication and Social Qualification	Domain-specific Qualification
PO-1	X			X	X			
PO-2	X			X	X			
PO-3	X			X	X			
PO-4	X			X	X			
PO-5	X			X	X			
PO-6	X			X	X			
PO-7	X			X	X	X	X	
PO-8	X			X	X			X
PO-9		X	X		X			
PO-10		X	X		X			
PO-11	X		X		X		X	
PO-12	X			X	X	X	X	
PO-13	X			X	X			
PO-14		X	X		X			
PO-15	X				X			
PO-16	X				X	X	X	
PO-17							X	
PO-18			X			X	X	X
PO-19		X			X	X		
PO-20			X		X			

OFFICE MANAGEMENT AND ADMINISTRATIVE ASSISTANCY PROGRAMME CATALOG

Academic Unit	Department of Office Management and Administrative Assistancy Programme
Type	Associate Degree
Qualification Awarded	When students graduate Department of Office Management and Administrative Assistancy Programme, they gain right to work in personnel, intelligence and finance branches.
Mode Of Study	Full-Time
Duration of the Program	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order for a student to graduate from a program, students are required to complete successfully the compulsory and elective courses which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Profile of the Program	The aim of this program is to train office staff and managers who will manage all kinds of office activities, make plans for further activities, carry out human resources activities and conduct information retrieval and archive activities and have the ability of using modern equipment and .techniques to perform those activities.
Job Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of personnel, intelligence and finance branch required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program Learning Outcomes	37. To know the principal terms related to the office management and personnel assistance, learning improvements in this field to have ability of applying of these improvements. 38. To have ability of applying general communication rules and speaking effectively. 39. Identifying principal terms about public relations and conducting activities of public relations. 40. To have ability of knowing and conducting social responsibilities, ethics, social security rights, job security, health of worker, information and conscience of environmental protection. 41. To use effectively keyboard techniques in correspondences. 42. To know and apply the human resource management activities. 43. To know the principal terms related to Public and Private Sector Construction.

	44. To know the information related to Filling and Archiving techniques to be able to conduct Filling and Archiving activities. 45. To know the general information about Professional Corresponding and to be able to make Professional Corresponding. 46. To know the general information about Rules of Protocol and Social Conduct. 47. To be able to use management information systems and to know information management. 48. To be able to know principal terms about the management and organizations. 49. To know about the principal terms of the Procurement and Purchasing Management. 50. To know about the applications in the facilities in terms of non-price competition quality responsibilities and total quality philosophy and the continuous improvements. 51. Generally speaking, To know about the firm structure, principal features of the firm and economic activities. 52. To have information of the term of economy and the activities composing economy in basic level. 53. To know the principals of preparation of the capital budget and have information of the budget preparation steps in basic level. 54. To know about the public economic activities, public expenditures, public finance and types in generally speaking. 55. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 56. To have basic knowledge of constitutional rights, freedoms and duties and understand the disciplinary rules military personnel are liable to 57. To have basic knowledge of English 58. To have basic knowledge of mathematics and physics and to speak Turkish effectively 59. To know about the activities intended to enhance institutional sense of belonging and those related to recent history of aviation and learn Ataturk's principles and revolutions and National War of Independence 60. To get to know oneself as an individual, be aware of human factors affecting behaviors and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

1.Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Management and Organization	Required	3	3	0	3	3
Turkish Language-I	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Human Factors in Aviation	Required	2	2	0	2	2
Computer Applications in Microsoft Office	Required	3	2	1	3	4
	TOTAL:	**30**	**27**	**3**	**29**	**30**

1.Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Turkish Language-II	Required	2	2	0	2	2
Physics-I	Required	3	2	1	3	3
English Language-II	Required	8	6	2	7	7
General Aviation English-I	Required	4	2	2	3	3
Introduction to Economics	Required	2	2	0	2	3
Public and Private Sector Construction	Required	2	2	0	2	2
Quality Management Systems	Required	2	2	0	2	2
Human Resource Management	Required	2	2	0	2	3
Fundamental Law	Required	2	2	0	2	3
	TOTAL:	**29**	**24**	**5**	**27**	**30**

2.Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
General Business	Required	3	3	0	3	3
Keyboard Techniques	Required	5	1	4	3	6
Office Management	Required	2	2	0	2	3
Business and Social Security Law	Required	2	2	0	2	2
Optional Course	Required	5	-	-	-	4
Optional Course	Required		-	-	-	
	TOTAL:	**35**	**30**	**5**	**28**	**30**

2.Year-Fall Semester Optional Courses						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Effective and Good Speaking	Optional	3	2	1	2	2
Public Relations	Optional	2	2	0	2	2
Budgeting Processes	Optional	3	2	1	3	3
Public Finance	Optional	2	2	0	2	1

2.Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Professional Corresponding	Required	5	3	2	4	5
Filling and Archiving	Required	3	3	0	2	4
Information Management	Required	3	3	0	3	3
Communication	Required	2	2	0	2	2
Optional Course	Required	4	-	-	-	4
Optional Course	Required		-	-	-	
2.Year-Spring Semester Optional Courses						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Personnel Assistance	Optional	2	2	0	2	2
Rules of Protocol and Social Conduct	Optional	2	2	0	2	2
Procurement and Purchasing Management	Optional	4	4	0	4	4

COURSE DESCRIPTIONS

Communication: To enable the students to comprehend communication and its importance, and teach the features of communication, types and models of communication, the meaning and functions of organizational communication and the features of effective communication.

Keyboard Techniques: Students will have the ability of keyboard usage in computer environment, fast writing and ten-finger fast writing in different languages.

Introduction To Work and Social Law: To provide basic understanding and knowledge about public servants law, worker law along with state officer and worker processes.

Office Management: Students will be gained the ability of office management operations with this course.

Rules of Protocol and Social Conduct: The aim of the course to be successful in business and society and to develop good relations and protocol information needed to provide students with the rules of social conduct.

Information Management: Regulation of the daily activities that make up the information, make transactions on the information, transform information, transmit information, and realize the basic operations such as store.

Management and Organization: The aim of this course is to teach students the knowledge related to management process, and management science along with concept of leadership and manager.

Public and Private Sector Structures: To give knowledge about structures of public and private sector, tasks and methods of working.

Human Resource Management: To provide students with the knowledge and skills about human resources, this is the most important factor to increase the competitiveness of enterprises and to adapt to changing technology and changing market conditions.

Public Relations: The goal of this class is to get the meaning of terms which is used in public relations namely; press, public opinion, image and sponsorship together with process of public relations.

Professional Corresponding: To provide information about the rules of writing along with types of writing and understand the process of writing.

Filling and Archiving: The aim of this course is to provide students the knowledge of archiving, saving, .digitalizing, ingoing and outgoing documents and the extermination of the document.

Administrative Assistance: This course aims to teach all the knowledge and skills of the profession of secretarial, the executive secretarial of the personal characteristics and professional qualifications.

Human Factors in Aviation: This course aims at each student earn competence related to effects of human factors on organizational actions in aviation. Course consists of Terms of human and behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

Introduction to Economics: Making the students acquire basic concepts about Economics, analyze the problems and solutions in economic events .

General Business: This course is intended to teach the common practices and understand the main concepts in the business and define the classification, foundation and function of businesses.

Quality Management Systems: To describe the main managerial and technical components of total quality management model and to bring application skills of this management model to the students

Procuration and Purchasing Management: To give general information about understanding of quality and total quality management and inform the students about quality assurance systems.

Budgeting Processes: This course aims to help the students to get familiar with budgeting terms to be able to follow the classes.

Basic Law: The aim of this course is to define the form of the state, the basic principles of penal law, discipline concept and crime elements.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies,

Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

Mathematics-I: This course aims to teach necessary abilities (for students of Air Force NCO Vocational High School) such fast and accurate thinking, building logic, problem solving and to furnish students with basic competencies required for high level courses. During course, Sets and Numbers, Equations and Inequations, Functions, Trigonometry, Complex Numbers, Basic Geometric Terms are explained.

Physics-I: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with introductory information about their further classes.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

English -I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+ - A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		SKILLS		QUALIFICATIONS			
	Theoretic	Practical	Conceptional	Practical	on of Independent Working and Taking Responsibi	Learning Qualification	Communication and Social Qualification	Domain-specific Qualification
PO-1					X			
PO-2	X	X						
PO-3			X	X				
PO-4	X	X	X	X				
PO-5					X			
PO-6								X
PO-7	X							
PO-8							X	
PO-9				X				
PO-10					X			
PO-11		X	X					
PO-12	X							
PO-13				X			X	
PO-14			X					
PO-15		X			X			X
PO-16	X		X				X	
PO-17	X							
PO-18								
PO-19		X	X					
PO-20	X							
PO-21				X			X	
PO-22			X					
PO-23		X			X			X
PO-24							X	

SECURITY AND GUARDING PROGRAMME COURSE CATALOGUE

Academic Unit	Management Science Department
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Management Science in Security and Guarding Degree, graduates become qualified to work as infantry sergeants.
Mode of study	Full-time
Duration of the Program	2 years
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order for a student to graduate from the program, students are required to complete successfully the compulsory and elective courses which require at least 120 ECTS credits and must have a Grade Point Average of (GPA) of at least 2.00.
Profile of the Program	It is aimed to improve personnel to be able to provide the continuity of technical, educational, managerial judicial and maintenance activities related with their jobs and able to manage the administration of the units that they have been assigned to with those purposes; able to support the security employees with both academical and applied education, equipped enough to respond to safety related necessities of global world, follow the developments in both the world and Turkey and advanced enough to apply the law for their own branch and personnel that have self-confidence.
Occupational Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of Security and Guarding with the competence to realize and develop the technical applications required for the Air Force competing with its age.
Access to Further Studies	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program Learning Outcomes	61. To be able to have the full knowledge of principles and theories of basic security and Guarding and to follow the technological improvements of the department beside having the ability of solving the problems of the tools of the department. 62. Identify, define, and analyze munition materials, tools and equipment in Air Forces 63. Student's physical sufficiency is suited to Air Force Command's Standards who adopt sports as a lifestyle and can perform basic individual acts.

	64. To be able to withstand to the possible penetration, sabotage and raid by achieving the individual and team discipline to defend Air Force Bases and facility to be able to apply it. 65. To interfere possible future social problems by learning the theories of individuals and groups. 66. To know and use every system about security and guarding by learning all of the systems. 67. To communicate effectively in daily life by verbal and non-verbal communication. 68. To have knowledge about the basic concepts of management and organization 69. To design projects in the field of security and guarding using regulations of the field. 70. To have the concept of quality, security and occupational ethnic values ,to decide independently while working both disciplines and inter disciplines. 71. To have the necessary knowledge to collect proof and identifying people in a possible judicial case. 72. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 73. To have basic knowledge of constitutional rights, freedoms and duties and to learn the disciplinary rules military personnel are liable to 74. To have basic knowledge of English 75. To have basic knowledge of mathematics and physics and to speak Turkish effectively 76. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk's principles and revolutions and National War of Independence 77. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Turkish Language-I	Required	2	2	0	2	2
Management and Organization	Required	3	3	0	3	3
English Language-I	Required	12	10	2	11	11
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Human Factors in Aviation	Required	2	2	0	2	2
Computer Applications in Microsoft Office	Required	3	2	1	3	4
TOTAL:		**30**	**27**	**3**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Physics-I	Required	3	2	1	3	3
Turkish Language-II	Required	2	2	0	2	2
English Language-II	Required	8	6	2	7	7
Common Aviation English-I	Required	4	2	2	3	3
Law	Required	2	2	0	2	3
Introduction to Security Knowledge	Required	4	2	2	3	6
Gaining Strength and Close Combat-I	Required	4	0	4	2	4
	TOTAL:	**29**	**18**	**11**	**24**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aviation English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Security Knowledge and Applications	Required	4	2	2	3	3
Introduction to Security and Emergency Procedures	Required	3	2	1	3	3
Gaining Strength and Close Combat-II	Required	3	0	3	2	3
Criminal Law	Required	3	3	0	3	4
Criminal Science and Crime Scene Investigation	Required	2	2	0	2	3
Communication	Required	2	2	0	2	2
	TOTAL:	**31**	**21**	**10**	**27**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aviation English-III	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
Human and Society Management	Required	3	2	1	3	3
Security and Emergency Application Procedures	Required	3	2	1	3	3
Security Systems	Required	2	2	0	2	2
Human and Group Psychology	Required	2	2	0	2	2
Gaining Strength and Close Combat-III	Required	2	0	2	1	2
Weapon Knowledge	Required	2	2	0	2	3
Security Planning	Required	3	1	2	2	3
TOTAL:		**31**	**21**	**10**	**27**	**30**

COURSE DESCRIPTIONS

Knowledge of Weaponry: This course includes definition of weapon, variety and parts of it, how to dismantle, clean, maintain it, how to detect and restore a malfunction, to use, carry and shoot a weapon safely.

Gaining Strength and Close Combat: This course aims to increase the physical capabilities of students who adopt sports as a lifestyle and can perform close combat techniques.

Security Systems: It includes defining and concept of security systems, personal and professional equipment, safety patrol, automatization room missions, evaluations of threats and risks, electronic control devices, security alarm systems, perimeter security systems, closed circuit camera systems and transition systems.

Security Planning: It aims to design security projects by using related procedures and equipment.

Criminal Science and Crime Scene Investigation: It aims to teach necessary information related to Criminal Science subjects, to investigate crime scene, how to collect evidence properly and procedures of collecting evidence, how crime scene experts and security experts should behave when protecting the crime scene and the evidence.

Criminal Law: It aims to teach the concept and principles of Criminal Law and applications of Criminal Law procedures in terms of person, time and place, penalty judgement, solving crime and bring in to justice for trial, conducting preparatory investigation and learning the trial process in general.

Introduction to Security: It aims to teach and apply the concept of security and private security and its basic information, information about use of drugs, the control of crowd, learning thecourtesy rules.

Security and Its Applications: It aims to teach basic information and concepts about security and security communication, public safety, decreasing the crime and supporting the process by deterring the criminals, recognizing the factors that cause the crime by checking the reasons of crime, preventing the crimes that will possibly occur.

Society Management: It aims to teach Security Management, explaining the need and importance, reconstructing the security services in terms of needs, public safety and change management, necessary information, ability and attitude to subjects such as gaining confidence in the scope of public relations and security services.

Human and Group Psychology: It aims to teach basic concepts about human and group psychology and gives necessary information, ability and attitude about incident intervene by giving basic information about Human and Group Psychology.

Introduction to Security and Emergency Procedures: It aims to teach taking necessary precautions in an emergency, updating the risk evaluation for changing situations, detecting the threats and the methods of intervening to incidents by using the related behavior styles.

Security and Emergency Application Procedures: It aims to teach taking necessary precautions in an emergency, updating the risk evaluation for changing situations, detecting the threats, planning and intervening to incidents suited to related procedures.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with introductory information about their further classes.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

Human Factors in Aviation: This course aims to make students gain competence related to effects of human factors on organizational actions in aviation. The course consists of Concepts of Human and Behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

Mathematics-I: This course aims to teach necessary abilities (for students of Air Force NCO Vocational High School) such fast and accurate thinking, building logic, problem solving and to furnish students with basic competencies required for high level courses. During course, Sets and Numbers, Equations and Inequations, Functions, Trigonometry, Complex Numbers, Basic Geometric Terms are explained.

Physics-I: This course aims to teach fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Computer Applications in Microsoft Office: The course aims to teach the fundamentals of information technologies like hardware and software, information security awareness, how to use windows based operating systems, creating and editing a document with word processing software, how to use spreadsheet software in an efficient way, creating animated slides with presentation software, how to use internet and email software as a communication tool in effective and secure way. During the course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

SECURITY AND PROTECTION PROGRAM CLASSROOMS

Security Classroom: It aims to reinforce any kind of weapon, device, tool, building, facility and provides weapon knowledge to protect these, also provides courses which are given within the modern and scientific methods such as security systems and technological devices.

Security Application Classroom: As the students in the programs are expected to provide perimeter security, internal security and to protect critical facilities; their physical capabilities, close combat skills, success rate at applicable courses are required to be at a certain level.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		**SKILLS**		**QUALIFICATIONS**			
	Theoretic	**Practical**	**Conceptional**	**Practical**	**Qualification of Independent Working and Taking Responsibility**	**Learning Qualification**	**Communication and Social Qualification**	**Domain-specific Qualification**
PÇ-I		X		X	X			
PÇ-II	X	X				X		
PÇ-3			X	X				X
PÇ-4	X	X	X	X				
PÇ-5					X			
PÇ-6						X		X
PÇ-7	X			X				
PÇ-8							X	
PÇ-9				X			X	
PÇ-I0					X			
PÇ-I1		X	X					
PÇ-I2		X	X					
PÇ-I3	X							
PÇ-I4				X			X	
PÇ-I5			X					
PÇ-I6		X			X			X
PÇ-I7							X	

LOGISTICS PROGRAMME COURSE CATALOG

Academic Unit	Department of Managements
Type	Associate Degree
Qualification Awarded	Upon completion of the Associate in Science Degree in Logistics Technology, graduates become qualified to work as logisticians.
Mode Of Education	Full-Time
Duration of the Programme	2 years.
The Number of Credits	120 ECTS-credits. (One academic year corresponds to 60 ECTS-credits)
Graduation Requirements	In order for a student to graduate from a program, students are required to complete successfully the compulsory and elective courses which require at least 120 ECTS credits and must have a General Point Average (GPA) of at least 2.00.
Definition of the Programme	The aim of Logistics Program is to train the students who is able to follow the developments in logistics area in the world and to interpret the logistics activities and to use his knowledge in his professional duties. This programme also aims to give an academic education in order to make students qualified in supply chain functions, storage, distribution, inventory management issues.
Professional Profile of Graduates	The program aims to train non-commissioned officers with a high level of knowledge and skills in the field of logistics with the competence to realize and develop the logistic applications required for the Air Force competing with its age.
Access to Further Education	The graduates of this program can apply to First Cycle (Bachelor's Degree) programs to enhance their academic skills and career.
Program Learning Outcomes	1. Comprehension of the principals and the terms of the logistics 2. Knowing how to manage the logistic operators 3. Knowing the contemporary terms which are used in the area of the logistics and the supply chain, ability to relate between the supply and the logistic and interpretation the developments and the changes in the sector 4. Ability to define all the functions of the logistics (like recruitment, provision, transportation handling, stock management storage, packaging and reverse streams) 5. To know the calculations in the logistics in terms of cost, sale, interest, percentage and per mille calculations

	6. To know the facility management, time management and the material management in logistics 7. To know about the applications in the facilities in terms of non-price competition quality responsibilities and total quality philosophy and the continuous improvements 8. To know the logistic information systems‘ areas of usage and the usage of the ones which is proper for the specialization of the logistics 9. To know about the principal terms related the supply management and the purchasing management 10. To know about the principal terms related to the areas of the management and the organization 11. Generally speaking, To know about the firm structure, principal features of the firm and economic activities 12. To have information of the term of economy and the activities composing economy in basic level 13. To know the principals considering in terms of preparation of the capital budget and to have information of the budget preparation steps in basic level 14. To know the accounting activities and the applications in logistic organizations in basic level 15. To be able to use an up-to-date computer operating system and word processor, calculation table and presentation software programs within that system 16. To have basic knowledge of constitutional rights, freedoms and duties and to understand the disciplinary rules military personnel are liable to 17. To have basic knowledge of English 18. To have basic knowledge of mathematics and physics and to speak Turkish effectively 19. To know about the activities intended to enhance institutional sense of belonging and those related to recent history aviation, to master Ataturk’s principles and revolutions and National War of Independence 20. To get to know oneself as an individual, to be aware of human factors affecting conduct and performance, to use these factors for safety and productivity and to minimize human errors.

CURRICULUM

First Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Mathematics-I	Required	3	3	0	3	3
Atatürk's Principles and the History of Turkish Revolution-I	Required	2	2	0	2	2
Management and Organization	Required	3	3	0	3	3
Turkish Language-I	Required	2	2	0	2	2
English Language-I	Required	12	10	2	11	11
Introduction to Law and Defense Legislation	Required	2	2	0	2	2
Introduction to Aviation	Required	1	1	0	1	1
Human Factors in Aviation	Required	2	2	0	2	2
Computer Applications in Microsoft Office	Required	3	2	1	3	4
	TOTAL:	**30**	**27**	**3**	**29**	**30**

First Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
Atatürk's Principles and the History of Turkish Revolution-II	Required	2	2	0	2	2
Physics-I	Required	3	2	1	3	3
Turkish Language-II	Required	2	2	0	2	2
English Language-II	Required	8	6	2	7	7
General Aeronautics English-I	Required	4	2	2	3	3
Fundamental Law	Required	2	2	0	2	3
Introduction to Logistic	Required	4	4	0	4	4
Introduction to Economics	Required	2	2	0	2	3
	TOTAL:	**29**	**24**	**5**	**27**	**30**

Second Year-Fall Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-III	Required	8	6	2	7	7
General Aeronautics English-II	Required	4	2	2	3	3
The History of Air Warfare	Required	2	2	0	2	2
Logistics Information Systems	Required	3	3	0	3	4
Supply Chain of Management	Required	3	3	0	3	3
General Business	Required	4	4	0	4	4
Storage and Distribution Management	Required	4	4	0	4	4
Budgeting Processes	Required	3	2	1	3	3
	TOTAL:	**31**	**26**	**5**	**29**	**30**

Second Year-Spring Semester						
Title	**Course Category**	**Course Hours**	**Theoretical**	**Practice**	**Local Credit**	**ECTS**
English Language-IV	Required	8	6	2	7	7
General Aeronautics English-II	Required	4	2	2	3	3
Democracy and Civil Society	Required	2	2	0	2	2
General Accounting	Required	3	3	0	3	2
Statistics	Required	3	3	0	3	3
Mercantile Law	Required	2	2	0	2	2
Procurement and Purchasing Management	Required	4	4	0	4	4
Quality Management Systems	Required	2	2	0	2	3
Inventory Management	Required	3	2	1	3	4
	TOTAL:	**31**	**26**	**5**	**29**	**30**

COURSE DESCRIPTIONS

Statistics: The aim of this course is to introduce the students' concept of statistics and to make the students gain basic statistics knowledge and analytical thinking ability.

Inventory Management: The aim of this course is to introduce the students the inventory management concept and to make the students gain inventory management methods and techniques.

Quality Management Systems: The aim of this course is to make the students comprehend sense of quality and total quality management and to inform them about quality assurance systems.

Procurement and Purchasing Management: The aim of this course is to teach the students how to use the allowance provided by national budget effectively within the context of procurement principles.

Budgeting Processes: The aim of this course is to make the students gain terms related to budgeting activities which help the students follow the advanced courses.

Storage and Distribution Management: The aim of this course is to teach students to storage's functions, technologies and controls and bases of storage and distribution applications.

Supply Chain of Management: The aim of this course is to inform the students about logistics and supply chain issues and to teach them the basic issues and the steps of planning, founding, management and controlling of supply chain.

Logistics Information Systems: The aim of this course is to teach the students basic issues related to logistics information systems and structure of logistics information systems and software, hardware, data base used in logistics information systems.

Mercantile Law: The aim of this course is to teach the students, commercial enterprises, companies and precious documents of the basic concepts.

Introduction to Accounting: The aim of this course is to teach the students recording, classifying and reporting of activities which are shown with money and cause changes on sources and properties of enterprises.

Introduction to Logistic: The aim of this course is to teach students to logistics' meaning, importance of logistics for enterprises and logistics activity areas.

Introduction to Economics: The aim of this course is to teach the students economy and the issues related to economy and to make them gain the ability of planning and outlaying of allowance effectively in professional applications.

General Business: The aim of this course is to teach the students applications related to enterprises and to make them gain bases issues about enterprises and to introduce them classifying, founding and functions of enterprises and to show them enterprises' relationships with its environment.

Fundamental Law: The aim of this course is to define shape of the state, principles of criminal law, what is the concept of the discipline and elements of crime.

Mercantile Mathematics: The aim of this course is to teach students to subjects like rate-ratio, graphics reading, measurement units, extent-volume calculations, break-even point and life cycle analysis.

Management and Organization: The aim of this course is to teach students the knowledge related to management process, to identify management matters clearly and comprehend the managerial concepts while providing the required information.

Human Factors in Aviation: This course aims to make students gain competence related to effects of human factors on organizational actions in aviation. The course consists of Concepts of Human and Behavior, Human performance and restrictions, Aspects effecting performance, Physical environment in organization, Social psychology in organization, Human error and accidents.

Computer Applications in Microsoft Office: During the course, it's aimed to bring student in proficiencies related to; learning fundamentals of information technologies like hardware and software, information security awareness, being able to use windows based operating systems, creating and editing a document with word processing software, being able to use spreadsheet software in an efficient way, creating animated slides with presentation software, also being able to use internet and email software as a communication tool in effective and secure way. During course, Basic terms of information technologies, Internet technologies and computer security, Computer usage on Windows operating system and file management, MS Word, MS Excel, MS Power Point, MS Outlook are taught to students at computer labs in an interactive way.

Mathematics-I: This course aims at earning necessity abilities (for students of Air Forces NCO Vocational High School) like fast and accurate thinking, building logic, problem solving and furnishing students with basic competence required for high level courses. During course, Sets and Numbers, Equations and Inequalities, Functions, Trigonometry, Complex Numbers, Basic Geometric Terms are explained.

Physics-I: This course aims at students are able to learn fundamental principles of physics, gain ability of calculating by supporting terms with problem solving and experiments, consider possible problems in their career in different views and reach the fastest and most concrete solution. During course, Physical Quantities and Definitions, Vectors, Force, Moment and Balance, Motion, Work, Power, Energy and Momentum, Heat, Temperature and Expansion are explained.

Turkish Language I-II: The aim of this course is to train individuals who has gained the habit of writing and speaking Turkish correctly and who has gained the habit of reading the texts and books regularly, who has acquired the structures of his native language, who can express his thoughts and feelings satisfactorily.

Atatürk's Principles and the History of Turkish Revolution I-II: The main aim of Atatürk's Principles and the History of Turkish Revolution I course is to analyze steps and reforms which Turkish Nation underwent. The struggle for independence is reviewed within the scope of that period. In Atatürk's Principles and the History of Turkish Revolution II course, Principles of Atatürk, who is the founder of modern Turkey, are fully studied. In both courses comprehension level information gaining is aimed. Students are also provided national commitment, awareness and Ataturk's way of thinking and are prepared to be future's individual.

Introduction to Aviation: The aim of this course is to learn the development of aviation in our country and in the world, with its role in the war, the changes in the aviation industry.

Introduction to Law and Defense Legislation: The purpose of this course is to get students to be acquainted with the rules of basic law, constitutional law, criminal law, military discipline and with introductory information about their further classes.

Democracy and Civil Society: This course aims to inform about the definition, types and characteristics of democracy, historical development of civil society and democracy as a concept, civil society and democracy in orthodoxy, heterodoxy, liberalism, Marxism, conservativism, the approaches on the topic of fundamental rights, civil society organizations in Ottoman and Republican era, the roles of civil society organizations as the third sector.

The History of Aerial Warfare: The purpose of this course is examine the air warfare in the past in the light of strategic, operative and tactical knowledge and analyze the wars in the past and investigates the reasons and the factors that had impact in history and examine the given principles and transfer the conclusions drawn by these principles.

English-I: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1 level. Interchange Intro Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1 level competence in accordance with the Common European Framework of Reference.

English-II: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A1+ level. Interchange I Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills,

overall concrete/notional thinking skills. At the end of the program, students are expected to reach A1+ level competence in accordance with the Common European Framework of Reference.

English-III: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2 level. Interchange I-II Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2 level competence in accordance with the Common European Framework of Reference.

English-IV: The purpose of this class is to enable students to improve their reading, listening and self-expression skills in the target language at A2-B1 level. Interchange III Course book, which is taught in this class, covers the teaching and use of linguistic elements such as grammar, which is required for learners to become efficient speakers in daily life, reading and listening comprehension, speaking and sociocultural communication skills, overall concrete/notional thinking skills. At the end of the program, students are expected to reach A2-B1 level competence in accordance with the Common European Framework of Reference.

General Aviation English-I: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-II: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A1+-A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

General Aviation English-III: This class is delivered to make students comprehend vocabulary and grammatical structures related to aviation in general at A2 level. Also, through native speaker class, students are expected to improve their interactive skills by speaking on various subjects in a natural interactional setting. Silent reading classes aim to make students comprehend the plot of the stories in the target language.

RELATIONAL MATRIX OF NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY AND PROGRAM OUTCOMES (PO)

	KNOWLEDGE		**SKILLS**		**QUALIFICATIONS**			
	Theoretic	**Practical**	**Conceptual/ Cognitive**	**Practical**	**Qualification of Independent Working and Taking Responsibility**	**Learning Qualification**	**Communication and Social Qualification**	**Domain-specific Qualification**
PO-1	X		X		X			
PO-2	X	X						
PO-3			X	X				
PO-4	X	X	X	X				
PO-5					X			
PO-6								X
PO-7	X							
PO-8							X	
PO-9				X				
PO-10					X			
PO-11		X	X					
PO-12	X							
PO-13				X			X	
PO-14		X	X					
PO-15	X							
PO-16				X			X	
PO-17			X					
PO-18		X			X			X
PO-19							X	
PO-20		X	X					