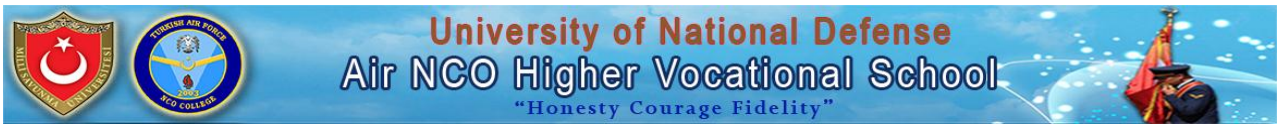

University of National Defense
Air NCO Higher Vocational School

Course Catalogs

Computer Programming Programme
Course Catalog

Name of the Program:	Computer Programming
Objective of the Programme:	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 operating systems are the main outcomes of the Computer Programming Program.

Computer Programming
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-I	Required	Cr.	12	10	2	12	12
Turkish Language-I	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Fundamental Law	Required	Cr.	2	2	0	2	2
Fundamental Aeronautics	Required	Cr.	1	1	0	1	1
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications-I	Required	Cr.	3	2	1	3	4
Human Factors	Required	Cr.	2	2	0	2	2
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-II	Required	Cr.	8	6	2	7	8
Language Skills-I	Required	Cr.	4	4	0	4	4
Turkish Language-II	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Computer Hardware	Required	Cr.	2	1	1	2	3
Programming Basics	Required	Cr.	4	3	1	4	4
Software Installation Management	Required	Cr.	2	1	1	2	2
Basic Electronics	Required	Cr.	2	2	0	2	2
Web Design Fundamentals	Required	Cr.	2	1	1	2	3
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	8	6	2	7	8
Language Skills-II	Required	Cr.	4	4	0	4	4
Database	Required	Cr.	4	2	2	3	4
Graphics and Animation	Required	Cr.	3	2	1	3	3
Visual Programming-I	Required	Cr.	4	2	2	3	4
Web Editor	Required	Cr.	2	1	1	2	3
Network Fundamentals	Required	Cr.	3	2	1	3	4
							30

4th TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	8	6	2	7	8
Language Skills-III	Required	Cr.	4	4	0	4	4
Server Administration System	Required	Cr.	3	2	1	3	3
Object Oriented Programming	Required	Cr.	2	1	1	3	3
Visual Programming-II	Required	Cr.	3	2	1	3	3
Internet Programming	Required	Cr.	4	2	2	3	4
Informatics Security	Required	Cr.	2	2	0	2	2
Open Source Operating System	Required	Cr.	2	1	1	2	3
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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

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.

Basic Electronics: Fundamental electricity and electronics concepts, series, parallel circuits, diodes; definition, structure and types of transistors, FET, number systems, truth tables and electrical properties of logic gates, encoders, decoders.

Database: Fundamental database concepts, designing a database, constructing a database, introduction to SQL and writing simple select command, defining database objects, designing tables and queries using SQL Server, administration of a database server, indexes and triggers.

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

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. The editors used throughout this course are Web Expression and Dreamweaver.

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

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.

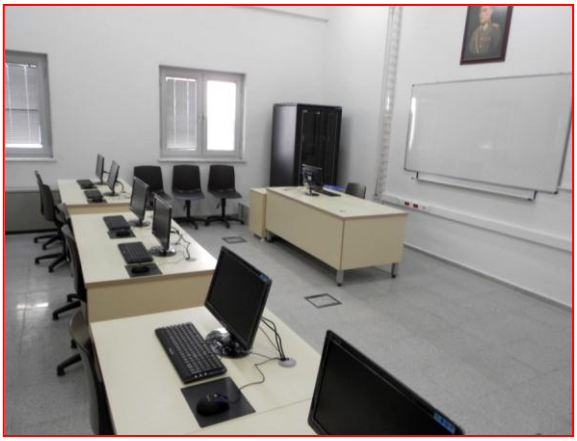
Visual Programming-II: Advanced concepts in visual programming, form design, using form elements, database connection, using Windows applications and registry. This course is taught via .NET Framework C# programming language in the computer lab.

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. PHP and apache server is taught in the computer lab.

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.

COMPUTER PROGRAMMING PROGRAMME LABS



The Computer Programming Programme has 3 Computer LABs. Two of them are programming labs which have 25 personal computers each. All of the courses are given in these labs. After lecturing the theoretical concepts, practices and applications are made through PCs by students. Endowed with the computer labs the following basic concepts and abilities are improved: Visual programming, web design applications, graphics and animation concepts, Windows Servers, Linux, AutoCAD etc.

Computer Hardware Lab is used for teaching and visualizing hardware and network concepts. In order to achieve this goal, different kinds of hardware like towers, mainboards, CPU's, screen cards, sound cards, testers, cables are examined.

Air Traffic Control Programme
Course Catalog

Name of the Program:	Air Traffic Control
Objective of the Programme:	The objective of the programme 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 programme 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.

Air Traffic Control Programme
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Turkish Language-I	Required	Cr.	2	2	0	2	2
English Language-I	Required	Cr.	12	10	2	12	12
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications-I	Required	Cr.	3	2	1	3	4
Human Factors	Required	Cr.	2	2	0	2	2
Organizational Behavior	Required	Cr.	2	2	0	2	2
Fundamental Aeronautics	Required	Cr.	1	1	0	1	1
Fundamental Law	Required	Cr.	1	1	0	1	1
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Turkish Language-II	Required	Cr.	2	2	0	2	2
English Language-II	Required	Cr.	8	6	2	8	8
Language Skills-I	Required	Cr.	4	4	0	4	4
Meteorology	Required	Cr.	3	3	0	3	3
Aircrafts	Required	Cr.	3	3	0	3	3
Air Traffic Services	Required	Cr.	3	3	0	3	4
Airspace Design	Required	Cr.	3	3	0	3	4
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	8	6	2	8	8
Language Skills-II	Required	Cr.	4	4	0	4	4
Navigation	Required	Cr.	3	3	0	3	3
Airport and Facilities	Required	Cr.	2	2	0	2	2
Communication and Navigation Systems	Required	Cr.	3	3	0	3	4
Air Law	Required	Cr.	2	2	0	2	3
Aerodrome Control	Elective	Cr.	6	2	4	4	6
Flight Operations	Elective	Cr.	3	3	0	3	3
Basic Aerodynamics	Elective	Cr.	3	3	0	3	3
							30

4th TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	8	6	2	8	8
Language Skills-III	Required	Cr.	4	4	0	4	4
Aviation English	Required	Cr.	2	2	0	2	2
Aeronautical Information Management	Required	Cr.	2	2	0	2	2
Non-Radar (Procedural) Approach Control	Elective	Cr.	6	2	4	4	7
Radar Approach Control	Elective	Cr.	6	2	4	4	7
Airline Transportation	Elective	Cr.	3	2	1	3	3
Keyboard Techniques	Elective	Cr.	3	2	1	3	3
Mass and Balance	Elective	Cr.	3	3	0	3	3
Dangerous Goods Transportation	Elective	Cr.	3	3	0	3	4
							30

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 with Aviation and Meteorology, including organization of meteorological service, atmosphere's composition and structure, atmospheric circulation, meteorological phenomena and meteorological information for aviation.

Aircraft: 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 candidate ATS personnel who have been recently tasked by their management with carrying out any type of environmental duties. Students will have information related with 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 en-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 shall 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 Omni Range Beacon (VOR), Instrument Landing System (ILS), Global Navigation Satellite System (GNSS), Automatic Dependent Surveillance (ADS), Inertial Navigation System (INS).

Air 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.

Aviation English: The Aviation English course is designed specifically to meet the needs Air Traffic Controller who need to advance from ICAO proficiency level 4. The general learning objective of the training is to enable students to communicate at a minimum with an ICAO level 4 in pronunciation, structure, vocabulary, fluency, comprehension and interaction (as per ICAO standards) with the topics geography, meteorological conditions, aircraft maintenance, flight planning, departure phraseology, En Route phraseology and descent, approach and landing phraseology.

Aeronautical 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.

Basic Aerodynamics: The History of Aviation, Physics of the Atmosphere, Aerodynamics, Theory of Flight, Flight Stability and Dynamics.

Radar Approach 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 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.

Non-Radar (Procedural) Approach 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 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.

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

Mass and Balance: Within the framework of general aviation rules, it is aimed to enable cadets to learn loading methods of air vehicles and their effects on the balance.

Airline Transportations: Within the framework of general aviation rules, it is aimed to enable cadets to learn the procedures for air transport.

Dangerous Goods Transportations: It is aimed to ensure that air transport of dangerous goods is carried out safely, effectively and in accordance with the international rules laid down in the IATA DGR document.

Air Operations: It is aimed to enable cadets to learn the flight operation, general service principles and the characteristics of the aerodrome operations.

Acknowledgement: Students shall know and understand the training programme that they will follow and how to obtain the appropriate information, recognize the potential for development of their careers in ATC and state the rules and regulations concerning employment and security; apply the regulations governing rules of the air, airspace and flight planning and explain their development and incorporation into national legislation; describe the basic principles of air traffic management and apply basic operational procedures; describe how meteorology affects ATS operations and aircraft performance and apply meteorological information in the basic operational procedures of ATS; explain the basic principles of navigation and use this knowledge in ATS operations; describe the basic principles of the theory of flight and aircraft characteristics and how these influence ATS operations; explain the basic working principles of equipment that is in general use in ATC; appreciate how this equipment aids the controller in providing a safe and efficient ATS; recognize the need for close cooperation with other parties concerning ATM operations and aspects of environmental protection; develop professional attitudes to manage traffic in usual, unusual, degraded and emergency situations.

Electronics and Communication Programme
Course Catalog

Name of the Program:	Electronics and Communication
Objective of the Programme:	The objective of the programme is to train technicians who are high qualified, thinking analytically, intended for development and innovation, internalizing the principle of lifelong learning, regarding national values, has sufficient theoretical knowledge to be employed in the work areas of electronic and communications in Turkish Air Force.

Electronics and Communication Programme
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-I	Required	Cr.	12	10	2	11	12
Turkish Language-I	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Military Law	Required	Cr.	2	2	0	2	2
Fundamental Aeronautics	Required	Cr.	1	1	0	1	1
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications-I	Required	Cr.	3	2	1	3	4
Human Factors	Required	Cr.	2	2	0	2	2
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-II	Required	Cr.	8	6	2	7	8
Language Skills-I	Required	Cr.	4	4	0	4	4
Turkish Language-II	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Mathematics-II	Required	Cr.	2	2	0	2	3
Physics-II	Required	Cr.	2	1	1	2	2
Electrical Measurement and Work Safety	Required	Cr.	2	1	1	2	2
Direct Current Circuit Analysis	Required	Cr.	3	2	1	3	4
Digital Electronics	Required	Cr.	3	2	1	3	3
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	8	6	2	7	8
Language Skills-II	Required	Cr.	4	4	0	4	4
Analog Electronics-I	Required	Cr.	2	1	1	2	2
Alternative Current Circuit Analysis	Required	Cr.	3	2	1	3	4
Analog Communication	Required	Cr.	3	2	1	3	4
Antennas and Microwave Communication	Required	Cr.	3	2	1	3	3
Computer Aided Circuit Design	Required	Cr.	2	1	1	2	2
Microprocessors and Microcontrollers	Required	Cr.	3	2	1	3	3
							30

4th TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	8	6	2	7	8
Language Skills-III	Required	Cr.	4	4	0	4	4
Digital Communication	Required	Cr.	3	2	1	3	4
Analog Electronics-II	Required	Cr.	2	1	1	2	2
Radio Frequency Techniques	Required	Cr.	3	2	1	3	4
Telephone Communication and Switching Systems	Elective	Cr.	2	1	1	2	2
Satellite Communication and Cellular Communication	Required	Cr.	2	1	1	2	2
Advanced Communication Technologies	Required	Cr.	2	2	0	2	2
Fiber Optic Communication	Elective	Cr.	2	1	1	2	2
Fundamentals of Radar	Elective	Cr.	2	2	0	2	2
							30

COURSE DESCRIPTIONS

Electrical Measurement and Work Safety: 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. Course contents are reading resistors, capacitors and inductor,

semiconductor components, voltage measuring, current measuring, frequency measuring, resistance measuring, oscilloscope, measuring DC and AC voltage with oscilloscope, measuring period and frequency with oscilloscope, legally work health and safety, occupational accidents and diseases, method in the work safety, organization of work safety, risk analysis, chemical risk factors, physical risk factors, fire and electrical risk factors, work safety in the pressurized vessels, personal protective equipment,

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. Course Contents are static electricity, taking precautions against the unpredictable effects of electrical current, direct current circuit analysis, loop currents method, node voltages method, resource links, Thevenin's theorem, Norton's theorem, superposition theorem, maximum power theorem, direct current storage elements, direct current power and energy.

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. Course Contents are number systems, truth tables and electrical properties of logic gates, abbreviation and digital circuit design using Boolean algebra and Karnaugh maps, encoders, decoders, multiplexers, adders, comparators, digital circuit design using flip-flops, asynchronous and synchronous counters, types and properties of registers, analog to digital and digital to analog converters.

Analog Electronics I-II: The objectives of this course are to teach semiconductor materials and their properties, to comprehend structure, types, properties and operating principles of semiconductor circuit devices and to achieve the ability of analyzing the circuits which have semiconductor circuit devices. Course Contents are semiconductor materials and their properties, definition, structure and types of diodes, AC and DC analysis of diodes, rectifier, chopper and clamper circuits, definition, structure and types of transistors, DC analysis of BJT transistors, use of BJT transistors as an amplifier, use of JFET and MOSFET as an amplifier and a switch.

Alternative Current Circuit Analysis: The objectives of this course are to make the students to gain the knowledge and skills about circuit solution of alternative current and to calculate. 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 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. Course contents are basic concepts related to communication systems, main components, structure, properties and noise sources of communication systems, power ratio and signal-level units in communication systems, necessity, advantages and disadvantages of amplitude, frequency and phase modulations, amplitude, frequency, phase modulation and demodulation techniques, applications related to amplitude, frequency, phase modulation and demodulation, comparison of amplitude, frequency and phase modulation 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. Course contents are electromagnetic theory, transmission line theory, transmission line types according to operating frequency, microwave systems and their components, microwave transmission line calculations, types, properties and polarization of antennas.

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.

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. Course contents are basic communication math and sampling theorem, pulse amplitude, pulse width, pulse position, pulse code, delta modulation and demodulation techniques, applications related to pulse width, pulse position, pulse code, delta modulation and demodulation, time division multiplexing systems, amplitude-shift, frequency-shift, phase-shift and quadrature phase-shift 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. Course contents are structure, types, operating principles and properties of oscillator, filter, mixer, modulator and demodulator circuits, applications related to oscillator, filter, mixer, modulator and demodulator circuits, RF and IF amplifiers, PLL and frequency synthesizers.

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, to achieve the ability of evaluating color codes of telephone cable, to achieve the ability of analyzing telephone traffic. Course contents are basic concepts related to telephone communication, structure, components, types and operating principle of telephone device, DP and DTMF call, structure, necessity and types of switchboards, switchboard signaling and applications, color codes of telephone cables, switching techniques used in switchboards, telephone traffic, Erlang law and electrical waves.

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. Course contents are fundamentals, frequency bands and hardware structure of satellite communication systems, installation and montage of parabolic antenna, technical properties and services of TURKSAT satellites, fundamentals, frequency bands and hardware structure of cellular communication systems, Turkey's position in the world in terms of satellite and cellular communication.

Advanced Communication Technologies: The objective of this course is to teach the computer networks, data communication techniques, cyber security, voice and data switching. Course contents are ISDN Systems, EURO-ISDN standards, ISDN services, properties and applications, XDSL Systems, Asymmetric digital subscriber lines, GSM, GPRS, SDH, and Internet Solving.

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. Course contents are program

menus, circuit drawing, circuit analysis, manually drawing printed circuit, automatically drawing printed circuit, preparing printed circuit, exposure method, fitting.

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. Course contents are basic concepts, advantages and disadvantages of fiber optic communication, types, structure and properties of fiber optic cables, light sources and their properties, fiber optic wiring, troubleshooting in fiber optic cables, applications related to fiber optic communication.

ELECTRONICS AND COMMUNICATION PROGRAMME LABS

Basic Electrical, Electronics, Communication and Microprocessor Labs: We have 4 labs for the experiments of several courses. Each lab has 12 computer aided experiment sets which contain an experiment bag, a number of experiment modules and a PC. The experiment bag provides the fixed and tunable power for the modules, a digital multimeter and data connection accessories between PC and modules. 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. PC has the software for the simulation of the measurements of the quantities like resistance, voltage, current, frequency.

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. The trainer is designed so that students can take the readings and plot the polar plots themselves, thus understanding the subject thoroughly.

Areas of Experimentation and Study

· Polar plot & Polarization of various antennas.
· Wave modulation and Demodulation
· Antenna Gain
· Antenna Beam Width.
· Element Current study.
· Front Back Ratio study.
· Antenna matching.
· SWR measurement.
· Antenna radiation with distance.
· Antenna Bandwidth measurement

Microwave Trainer: It is a trainer kit for studying characteristics of microwave principals. 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 and the Standing Wave-Ratio and Reflection Coefficient, measuring unknown impedance, study the substitution method for attenuation measurement.

Communication Link Set: It is a trainer kit for studying characteristics of the communication links. Some of the areas of experimentation are; attenuation measurement, measuring impedance, 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 module is self-contained equipment which is designed for the study of fiber optic communications systems. 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: This trainer provides an in-depth study of basic Satellite Communication system. It consists of Uplink Transmitter, Satellite Link and Downlink Receiver, which can be conveniently placed in the laboratory. The Satellite can be placed at an elevated, position if needed. The Satellite Transponder receives signal from Uplink Transmitter and retransmits at different frequencies to a Downlink Receiver. The Uplink and Downlink frequencies are selectable and can have variety of signals such as Video, Audio, Voice, Tone, Data and Telemetry (Temperature and Light intensity).

Electrical Program
Course Catalog

The Name of the Program:	Electrical Program
Objective of the Program:	To provide students with the knowledge of basic sciences and social science in general and electric-electronic technology in particular so as to impart the necessary skill to analyze and synthesize electrical circuits, algorithms and complex apparatus, to provide technical knowledge, skill and competence to identify, comprehend and solve problems in industry, research and academics related to power, to prepare the students to successfully work in various organizations, with professional competence and ethical administrative acumen so as to be able to handle critical situations and meet deadlines, to train the students basic human and communication skills so that they may be both good team-members and leaders.

Electrical Program
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-I	Required	Cr.	12	10	2	12	12
Turkish Language-I	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Fundamental Law	Required	Cr.	2	2	0	2	2
Fundamental Aeronautics	Required	Cr.	1	1	0	1	1
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications	Required	Cr.	3	2	1	3	4
Human Factors	Required	Cr.	2	2	0	2	2
							30

2nd TERM

COURSE NAME	COURSE CATEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-II	Required	Cr.	8	6	2	8	8
Language Skills-I	Required	Cr.	4	4	0	4	4
English Language Skills I	Required	Cr.	4	4	0	4	4
Turkish Language-II	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Mathematics-II	Required	Cr.	2	2	0	2	2
Physics-II	Required	Cr.	2	2	0	2	2
Electrical Measurement and Work Safety	Required	Cr.	2	1	1	2	2
Direct Current Circuit Analysis	Required	Cr.	3	2	1	3	4
Alternating Current Circuit Analysis	Required	Cr.	3	2	1	3	4
							30

3rd TERM

COURSE NAME	COURSE CATEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	8	6	2	8	8
Language Skills-II	Required	Cr.	4	4	0	4	4
Analog Electronics	Required	Cr.	4	2	2	3	4
Digital Electronics	Required	Cr.	3	2	1	3	3
Techniques of Electrical Installations	Required	Cr.	3	2	1	3	4
Planning, Exploratory and Contract	Required	Cr.	2	2	0	2	3
Direct Current Machines and Transformers	Required	Cr.	4	3	1	4	4
							30

4th TERM

COURSE NAME	COURSE CATEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	8	6	2	8	8
Language Skills-III	Required	Cr.	4	4	0	4	4
Synchronous and Asynchronous Machines	Required	Cr.	4	3	1	4	4
Programmable Logic Controllers	Required	Cr.	3	2	1	3	3
Electromechanical Control Systems	Required	Cr.	3	2	1	3	3
Techniques of Special Installations	Required	Cr.	3	2	1	3	4
Techniques of High Voltages	Required	Cr.	3	3	0	3	4
							30

COURSE DESCRIPTIONS

Electrical Measurement and Work Safety: 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. Course contents are reading resistors, capacitors and inductor, semiconductor components, voltage measuring, current measuring, frequency measuring, resistance measuring, oscilloscope, measuring DC and AC voltage with

oscilloscope, measuring period and frequency with oscilloscope, legally work health and safety, occupational accidents and diseases, method in the work safety, organization of work safety, risk analysis, chemical risk factors, physical risk factors, fire and electrical risk factors, work safety in the pressurized vessels, personal protective equipment.

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, resource links, Thevenin's theorem, Norton's theorem, superposition theorem, maximum power theorem, direct current storage elements, direct current power and energy.

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 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. Course Contents are semiconductor materials and their properties, definition, structure and types of diodes, AC and DC analysis of diodes, rectifier, chopper and clamper circuits, definition, structure and types of transistors, DC analysis of BJT transistors, use of BJT transistors as an amplifier, use of JFET and MOSFET as an amplifier and a switch.

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. Course Contents are number systems, truth tables and electrical properties of logic gates, abbreviation and digital circuit design using Boolean algebra and Karnaugh maps, encoders, decoders, multiplexers, adders, comparators, digital circuit design using flip-flops, asynchronous and synchronous counters, types and properties of registers, analog-to-digital and digital-to-analog converters.

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.

Planning, Exploratory and Contract: The aim of this course is to teach students pre-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, security systems, facilities and equipment information.

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.

Synchronous and Asynchronous Machines: 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.

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.

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. lighting 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.

Programmable Logic Controllers: The aim of this course is to teach students the relationship between the various hardware components of a programmable logic controller, to design logic circuits to perform industrial control functions of medium complexity, to develop coded programs for the programmable logic controller, to demonstrate the correct operation of logic circuits by programming them into the programmable logic controller, to demonstrate the use of mathematical functions.

ELECTRICAL PROGRAM 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.

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 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.

Automotive Technology Programme
Course Catalog

Name of the Program:	Automotive Technology Programme
Objective of the Programme:	Program with classes taught gasoline engines, diesel engines and alternative vehicle types with differences that, vehicle mechanics and electronics of all kinds of hardware belonging to detect malfunctions in situ by removing, technological developments needed all sorts of tests and control equipment in their ears, which can tool catalog information quickly access computers and the internet technology solutions with the ability to quickly imparted, is to train students with a diploma in associate degree level.

Automotive Technology Programme
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-I	Required	Cr.	12	10	2	12	12
Turkish Language-I	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Fundamental Law	Required	Cr.	1	1	0	1	1
Learning Methodology	Required	Cr.	1	1	0	1	1
Fundamental Aeronautics	Required	Cr.	1	1	0	1	1
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications-I	Required	Cr.	3	2	1	3	4
Human Factors	Required	Cr.	2	2	0	2	2
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-II	Required	Cr.	8	6	2	8	8
Language Skills-I	Required	Cr.	4	4	0	4	4
Turkish Language-II	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Automotive Electrics	Required	Cr.	3	2	1	3	4
Measurement Technique	Required	Cr.	1	1	0	1	1
Machine Elements	Required	Cr.	2	1	1	2	2
Engine Technology	Required	Cr.	4	2	2	3	5
Thermodynamics	Required	Cr.	2	2	0	2	2
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	8	6	2	8	8
Language Skills-II	Required	Cr.	4	4	0	4	4
Fuel and Ignition Systems of Plug Sparking Engine	Required	Cr.	3	2	1	3	3
Power Transmission Units	Required	Cr.	4	2	2	3	4
Automotive Electronics	Required	Cr.	3	2	1	3	4
Technical Drawing	Required	Cr.	3	1	2	2	4
Hydraulic and Pneumatic Systems	Required	Cr.	3	2	1	2	3
							30

4th TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	8	6	2	8	8
Language Skills-III	Required	Cr.	4	4	0	4	4
Diesel Engines and Fuel Injection Systems	Required	Cr.	4	2	2	3	4
Movement Control Systems	Required	Cr.	4	2	2	3	4
Emission Control Systems	Required	Cr.	1	1	0	1	1
Engine Test and Adjustments	Required	Cr.	3	1	2	2	3
Heating and Cooling Systems	Required	Cr.	2	1	1	2	3
Comfort Systems	Required	Cr.	1	1	0	1	2
Labor Safety and Laborer Health	Required	Cr.	1	1	0	1	1
							30

COURSE DESCRIPTIONS

Automotive Electrics: Basic electrical principles, ignition systems, starting systems, charging systems and other electrical components of the vehicle being introduced is strengthened through the practice course.

Measurement Techinique: Measurement and control definitions, application areas in the industry, operation and maintenance of measuring devices and apparatus, sensitivity limits, calibration and use in applications such issues is to teach.

Machine Elements: The basic concepts of machine elements, removable fasteners, motion transmission elements, shafts, axles and bearings are introduced.

Engine Technology: Otto engine principles, the structural characteristics of gasoline engines, gasoline engines constituent parts, gasoline engine found in the introduction and implementation of the system is strengthened through the lessons.

Technical Drawing: The technical picture of the importance of technical drawing norms, the drawing rules, creating views, sectioning, dimensioning and perspective, as well as basic technical drawing rules taught and then practice with lessons to reinforce, machine elements drawing terms are introduced.

Comfort Systems: The safety and comfort systems on the vehicle are introduced.

Fuel and Ignition Systems of Plug Sparking Engine: 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 to introduce and practice lessons and is strengthened.

Power Transmission Units: On vehicle powertrain 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.

Automotive Electronics: Automotive electronics based, 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: 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: Hydraulics and pneumatics, know the basic concepts and principles of operation of circuit elements acrhitectures, using circuit elements that will make the desired task is to gain the ability to establish circuits.

Labor Safety and Laborer Health: 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 to teach and recycled waste properly can store aims.

Diesel Engines and Fuel Injection Systems: **T**he 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: 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 is to equip.

Engine Test and Adjustments: Engines and systems, physical controls, diagnostic test device and engine systems not perform and ECU memory faults in the deletion and parts ECU introduce to teach and practice this information to reinforce the aims.

Heating and Cooling Systems: 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.

Vehicle Maintenance and Service Management: Service businesses physical structures and operating methods of determining service efficiency in terms of importance, service operations technical equipment and processes adequately formed enables the knowledge and skills of integrity, service equipment in the new technological development, follow-up and implementation in terms of efficiency comprehend the importance aims.

AUTOMOTIVE TECHNOLOGY PROGRAMME LABS:





Engine Laboratory: This laboratory provides students with the automotive technology 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, heating, cooling and comfort systems covered, heating, air conditioning, 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 intended to improve the dexterity of the students are doing.

Heating and Cooling Laboratory: This laboratory provides students with vehicles belonging to the basic principles of air conditioning and heating system, troubleshooting, and maintenance of experimental set is strengthened by explaining and practicing.

Construction Technology Programme
Course Catalog

Name of the Program:	Construction Technology
Objective of the Programme:	The aim is to train technicians who are aware of the requirements of the age who can see the topics in every aspect of the profession that could serve to base level, used in the construction of all kinds of building materials and building systems for the purpose of the information, the quality and construction of earthquake-resistant structures, building and standards as necessary infrastructure, using computer programs capable of professional drawings manually or, on the ground, aggregate, concrete, cement and asphalt are capable of basic level tests the organization of the construction site, the construction of the road and aircraft tracks, paved, water supply and the transmission of knowledge and skills related to the variations of the existing buildings that have damage, causes and strengthening these structures have enough information about this direction.

Construction Technology Programme
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Turkish Language-I	Required	Cr.	2	2	0	2	2
English Language-I	Required	Cr.	12	10	2	12	12
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications-I	Required	Cr.	3	2	1	2	4
Human Factors	Required	Cr.	2	2	0	2	2
Organizational Behavior-I	Required	Cr.	2	2	0	2	2
Introduction to Aeronautics	Required	Cr.	1	1	0	1	1
Military Law	Required	Cr.	1	1	0	1	1
							30

2nd TERM

COURSE NAME	COURSE CATEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Turkish Language-II	Required	Cr.	2	2	0	2	2
English Language-II	Required	Cr.	8	6	2	8	8
Language Skills-I	Required	Cr.	4	4	0	4	4
Mathematics -II	Required	Cr.	2	2	0	2	2
Building materials	Required	Cr.	3	2	1	3	3
Strength of Materials	Required	Cr.	2	2	0	2	2
Soil Mechanics-I	Required	Cr.	2	1	1	2	3
Technical Drawing	Required	Cr.	3	2	1	3	3
							30

3rd TERM

COURSE NAME	COURSE CATEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	8	6	2	8	8
Language Skills-II	Required	Cr.	4	4	0	4	4
Reinforced Concrete	Required	Cr.	3	3	0	3	4
Computer-Aided Drawing	Required	Cr.	3	2	1	3	3
Soil Mechanics-II	Required	Cr.	4	2	2	3	4

Structure Feature and Cost	Required	Cr.	4	2	2	3	5
Land Measurements	Required	Cr.	2	1	1	2	2
							30

4th TERM

COURSE NAME	COURSE CATEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	8	6	2	8	8
Language Skills-III	Required	Cr.	4	4	0	4	4
Water Supply And Transmission	Required	Cr.	2	2	0	2	2
Asphalt Concrete Technology	Required	Cr.	4	2	2	3	4
Structure Static	Required	Cr.	3	3	0	3	3
Road construction	Required	Cr.	2	1	1	2	3
Professional Application	Required	Cr.	3	2	1	3	3
Site Organization	Elective	Cr.	2	2	0	2	3
							30

COURSE DESCRIPTIONS

Strength of Materials: This course aims to teach students about the determination of the effect 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.

CONSTRUCTION TECHNOLOGY PROGRAMME LABS:

Concrete Asphalt 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. Asphalt viscosity test equipment. Ring and Bell training set.

Building Materials Laboratory: It aims to teach students the properties of materials. Los angeles training set, Concrete mixing machine, Concrete vibration training set, Slump set, Cure pool, Freeze and anti-freeze cabin, Carot test equipment, Automatic proctor set.

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.

Aircraft Technology Programme Course Catalog (Avionics Branch)

Name of the Program:	Aircraft Technology (Avionics Branch)
Objective of the Programme:	The scope of this program is to train the qualified maintenance technicians who have the basic skills and knowledge identified by the national standards which can be used in performing the maintenance and repair actions 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-taker, 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 due to the objects and requirements of the Turkish Air Force, continuously learning, and capable of reaching the information, that have the developed leadership properties, in peace and warfare conditions.

Aircraft Technology (Avionic Branch)

WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-I	Required	Cr.	12	10	2	11	12
Turkish Language-I	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Fundamental Law	Required	Cr.	2	2	0	2	2
Fundamental Aeronautics	Required	Cr.	1	1	0	1	1
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications	Required	Cr.	3	1	2	2	4
Human Factors	Required	Cr.	2	2	0	2	2
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-II	Required	Cr.	8	6	2	7	8
English Language Skills-I	Required	Cr.	4	4	0	4	4
Turkish Language-II	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Physics-II	Required	Cr.	2	1	1	2	2
Basic Aerodynamics	Required	Cr.	3	2	1	3	3
Aircraft Materials and Hardware	Required	Cr.	3	2	1	3	4
Electrical Fundamentals-I	Required	Cr.	4	3	1	4	5
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	8	6	2	7	8
English Language Skills-II	Required	Cr.	4	4	0	4	4
Electronic Fundamentals	Required	Cr.	3	2	1	3	4
Digital Techniques	Required	Cr.	3	2	1	3	3
Electrical Fundamentals-II	Required	Cr.	3	2	1	3	4
Aircraft Mechanic Systems	Required	Cr.	3	2	1	3	3
Communication Fundamentals	Required	Cr.	4	2	2	3	4
							30

4th Term							
COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	8	6	2	7	8
English Language Skills-III	Required	Cr.	4	4	0	4	4
Avionic Maintenance Practices	Required	Cr.	4	2	2	3	5
Aviation Legislation	Required	Cr.	1	1	0	1	1
Communication and Navigation Systems	Required	Cr.	3	2	1	3	3
Flight Instrument Systems	Required	Cr.	3	2	1	3	3
Aircraft Electrical Systems	Required	Cr.	3	2	1	3	3
Automatic Flight Control Systems	Required	Cr.	2	1	1	2	3
							30

COURSE DESCRIPTIONS

Electrical Fundamentals-I: Electron Theory, Static Electricity and Conduction, Electrical Terminology, Generation of Electricity, DC Sources of Electricity, DC Circuits, Resistance/Resistor, Power, Capacitance/Capacitor, Inductance/Inductor.

Aircraft Materials And Hardware: Aircraft material types, mechanics and strength of materials, heat treatments of materials, definition and types of corrosion, aircraft bolt identification, springs, bearings, transmissions, hose, control cable, cable construction and cable fittings.

Basic Aerodynamics: The History of Aviation, Physics of the Atmosphere, Aerodynamics, Theory of Flight, Flight Stability and Dynamics.

Electronic Fundamentals: Diodes, Semiconductors, Transistors, Operational amplifiers, Printed circuit.

Digital Techniques : 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.

Electrical Fundamentals-II: Magnetism, Magnetic induction, AC Theory, AC Circuits, Transformers, Filters.

Aircraft Mechanic Systems: Aerodynamics of Aircraft and Flight Controls, High Speed Flight, Rotary Wing Aerodynamics, Structures, Electrical Power, Equipment and Furnishing, Flight Controls, Lights, Cabin Systems.

Communication Fundamentals: Fundamentals of communications, signal analysis, power at communication, amplitude modulations, frequency modulation, digital communication, electromagnetic waves, electromagnetic wave propagation, antennas, fiber optic.

Communication and Navigation Systems: Long and medium distance communication systems, Terrestrial navigation systems, Approach systems, Satellite navigation systems, Inertial navigation systems, Radar systems, New generation systems, In-flight communication and recording systems, Data bus structures, Electronic harp.

Flight Instrument Systems: Atmosphere, Classification of markers, Pitot-static system and displays, Gyroscopic principles and indicators, Engine and fuel system displays, Warning and warning system indicators, Electronic indicators, Electronic flight display systems.

Aircraft Electrical Systems: Aircraft batteries, DC motor / generator, AC motor / generator, AC / DC power system components, External power / emergency power generation, Power distribution, Lighting, Systems for preventing electrical slip, Electrical anti-icing systems.

Automatic Flight Control Systems: Seromechanisms, Automatic flights, Autopilot modes, Automatic landing systems, Automatic gas and yaw damper systems, Helicopter stability enhancement systems, Digital flight control systems.

Avionic Maintenance Practices: Aircraft and workshop safety rules, Tools and tools, Methods of connecting joining with mechanical avionic machine elements, Aircraft test equipment, Engineering drawings, diagrams and standards, General dismantling, inspection, repair and assembly methods, Aircraft supply / service and dep.

Aviation Legislation: International aviation standards, Personnel approval of maintenance (SHY-66), Authorization regulation of maintenance organizations (SHY-145)

AIRCRAFT TECHNOLOGY (AVIONICS BRANCH) LABS

Avionic System Laboratory
There are three training set:

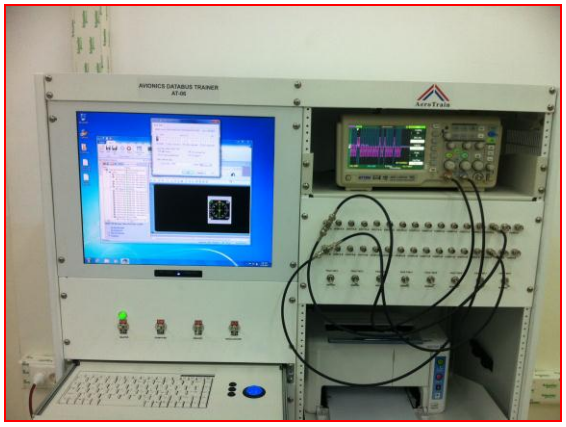
Automatic Flight Control Training Set: Teaching the principles of automatic flight controls by demonstration using a complete system that encompasses all the aspect of autopilot and automatic flight controls. It is representative of autopilot systems used on large aircraft. The visual display of realistic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

Automatic Flight Control Training Set

Flight Instrumentation Training Set



Data Bus Training Set

Aircraft Technology Programme Course Catalog (Mechanics Branch)

Name of the Program:	Aircraft Technology (Mechanics Branch)
Objective 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 which can be used in performing the maintenance and repair actions 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-taker, 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 due to the objects and requirements of the Turkish Air Force, continuously learning, and capable of reaching the information, that have the developed leadership properties, in peace and warfare conditions.

Aircraft Technology (Mechanics Branch)
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-I	Required	Cr.	12	10	2	11	12
Turkish Language-I	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Fundamental Law	Required	Cr.	1	1	0	1	1
Learning Methodology	Required	Cr.	1	1	0	1	1
Fundamental Aeronautics	Required	Cr.	1	1	0	1	1
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications-I	Required	Cr.	3	1	2	2	4
Human Factors	Required	Cr.	2	2	0	2	2
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-II	Required	Cr.	12	10	2	11	12
Turkish Language-II	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Physics- II	Required	Cr.	2	1	1	2	2
Aerodynamics	Required	Cr.	3	2	1	3	3
Thermodynamics	Elective	Cr.	2	1	1	2	3
Fluid Mechanics	Elective	Cr.	2	1	1	2	3
Technical Drawing	Elective	Cr.	3	1	2	2	3
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	12	10	2	11	12
Aircraft Materials	Elective	Cr.	2	1	1	2	3
Piston Engines	Elective	Cr.	2	1	1	2	2
Aircraft Hardware	Elective	Cr.	2	1	1	2	2
Aircraft Structures and Systems-I	Elective	Cr.	4	3	1	4	5
Basic Electricity - Electronic	Elective	Cr.	3	2	1	3	3
Hydraulic and Pneumatic Circuits	Elective	Cr.	3	2	1	3	3
							30

4th TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	12	10	2	11	12
Mechanic Maintenance Practices	Elective	Cr.	5	2	3	3	5
Gas Turbine Engines	Elective	Cr.	3	2	1	2	4
Aircraft Structures and Systems-II	Elective	Cr.	3	1	2	2	4
Aircraft Electronic System	Elective	Cr.	2	1	1	2	2
Propeller	Elective	Cr.	2	1	1	2	2
Aviation Legislation	Required	Cr.	1	1	0	1	1
							30

COURSE DESCRIPTIONS

Fluid Mechanics: Basic concepts of fluids**:** Density, specific volume, relative density, specific gravity, specific energy, surface tension. Fluid Statics: Pressure, types of manometers. Fluid Dynamics: Continuity equation, compressible flows, incompressible flows, volumetric flow rate, mass flow rate and Bernoulli equation.

Thermodynamics: 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.

Hydraulic and Pneumatic Circuits: Basics of hydraulics and pneumatics. Operating principles of circuit elements: tank, pump, valve, cylinder etc.

Aircraft Materials: Aircraft material types, mechanics and strength of materials, heat treatments of materials, definition and types of corrosion.

Aircraft Hardware: Aircraft bolt identification, springs, bearings, transmissions, hose, control cable, cable construction and cable fittings.

Mechanic Maintenance Practices: 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, ınspection, repair and assembly techniques and maintenance procedures.

Piston Engine: Fundamentals, 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, Power-plant Installation, Engine Monitoring and Ground Operation, Engine Storage and Preservation.

Propellers: Fundamentals, Propeller Construction, Propeller Pitch Control, Propeller Synchronizing, Propeller Ice Protection, Propeller Maintenance, Propeller Storage and Preservation.

Technical Drawing: Fundamentals drawings, perspective drawing, standard machine elements, removable/non removable fasteners, shaft, gear, springs, bearings, machine parts and tolerances, surface symbols, assembly drawing.

Basic Aerodynamics: The History of Aviation, Physics of the Atmosphere, Aerodynamics, Theory of Flight, Flight Stability and Dynamics.

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

Aircraft Structures and Systems II: Ice and Rain Protection, Fire Protection, Fuel, Hydraulic Power, Landing Gear, Pneumatic/Vacuum, On Board Maintenance Systems.

Gas Turbine Engines: Fundamentals (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.

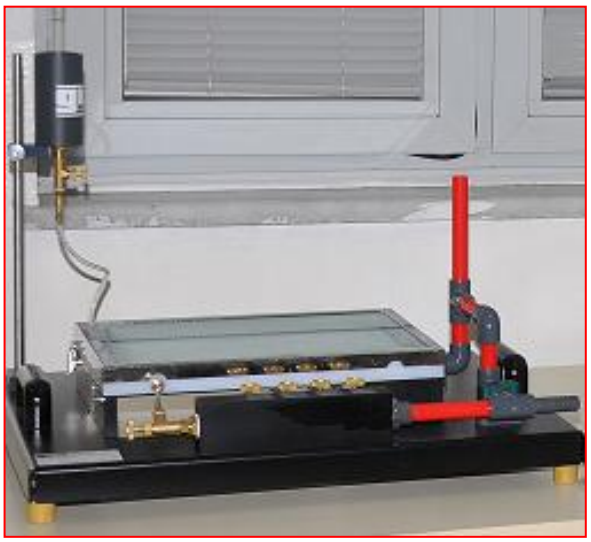
Aviation Legislation: Role of the International Civil Aviation Organization, Role of EASA, Role of Federal Aviation Administration, Role of Directorate General Of Civil Aviation (DGCA), Certifying Staff-Maintenance DGCA 66-01 (EASA Part-66), Approved Maintenance Organizations DGCA 145-01 (EASA Part-145).

Basic Electricity-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.

Aircraft Electronic System: Instruments, electronic flight ınstrument systems, automatic flight control systems, aircraft electrical system, lights, communication and navigation systems.

AIRCRAFT TECHNOLOGY PROGRAMME (MECHANIC BRANCH) LABORATORIES

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.

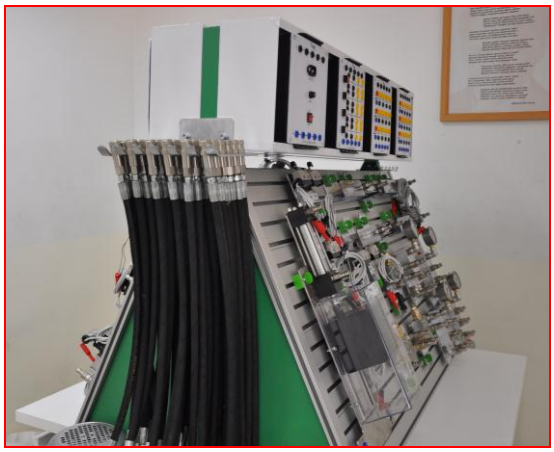
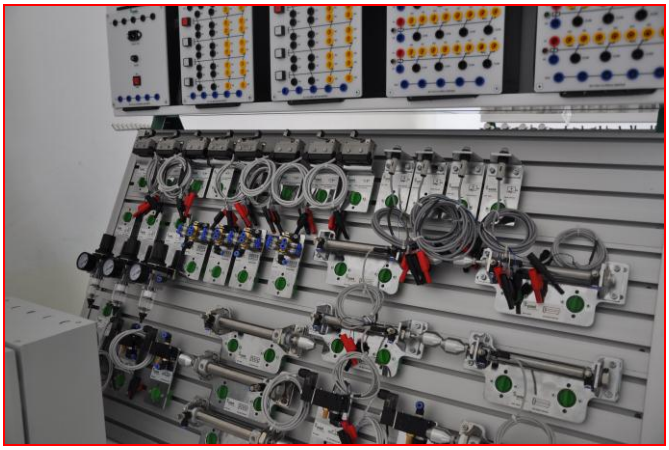


Fluid Mechanics Laboratory: In Fluid Mechanics Laboratory, there are 3 training sets which are Bernoulli Principle Training Set, Streamlines Visualisation Training Set and Air Flow Bench. In this laboratory, basics of fluid flows, fluid flow around bodies, pressure distribution of fluids and Bernoulli Principles are being demonstrated. Basic fluid flows formed around aircraft are being visually trained to students who will be Mechanic Aircraft Maintenance Technicians.

Maintenance Applications Workshop: In the maintenance applications workshop, there are a service table, a tool cabinet and a transportation table. In this workshop, there are also all the necessary tools and equipment for installation and disassemblement. In addition to the mentioned tools, 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.

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


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


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.

Logistics Programme
Course Catalog

Name of the Program:	Logistics
Objective 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.

Logistics Programme
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-I	Required	Cr.	12	10	2	11	12
Turkish Language-I	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Basic Law Knowledge	Required	Cr.	2	2	0	2	2
Basic Aeronautical Information	Required	Cr.	1	1	0	1	1
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications	Required	Cr.	3	2	1	3	4
Human Factors	Required	Cr.	2	2	0	2	2
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-II	Required	Cr.	12	10	2	11	12
Turkish Language-II	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Introduction to Law	Required	Cr.	2	2	0	2	2
Business Mathematics	Required	Cr.	2	2	0	2	2
Economics	Required	Cr.	2	2	0	2	2
Introduction to Logistic	Required	Cr.	3	3	0	3	4
General Accounting	Required	Cr.	3	2	1	3	4
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	12	10	2	11	12
General Business	Required	Cr.	3	3	0	3	3
Logistics Information Systems	Required	Cr.	2	2	0	2	3
Supply Chain Management	Required	Cr.	4	4	0	4	4
Stock and Distribution Management	Required	Cr.	4	4	0	4	4
Budgeting Processes	Required	Cr.	3	2	1	3	4
							30

4th TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	12	10	2	11	12
Mercantile Law	Required	Cr.	2	2	0	2	2
Supply and Purchasing Management	Required	Cr.	4	4	0	4	4
Quality Management Systems	Required	Cr.	2	2	0	2	3
Statistics	Required	Cr.	3	3	0	3	3
Management and Organization	Required	Cr.	2	2	0	2	2
Inventory Management	Required	Cr.	3	2	1	2	4
							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.

Supply 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.

General Business: The aim of this course is to teach the students, businesses human resource management, production, marketing and finance functions and to gain management functions related basic concepts.

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.

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

Supply Chain 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.

Introductıon To Law: To provide basic understanding and knowledge about definition of law, knowledge about major law systems throughout the world, statue rules and customary rules of law, essence of law, branches of law, concept of right and related topics.

General 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 the students the necessary calculations regarding business mathematics and to make them gain the experience which they need during their business life.

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

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.

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.

Office Management and Administrative Assistancy Programme
Course Catalog

Name of the Program:	Office Management and Administrative Assistancy
Objective of the Program:	The aim of this program is to train director secretary who will work with executive directors in private and public sector and office directors who will work in various programmes of offices.

Office Management and Administrative Assistancy
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-I	Required	Cr.	12	10	2	11	12
Turkish Language-I	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Basic Law Knowledge	Required	Cr.	2	2	0	2	2
Basic Aeronautical Information	Required	Cr.	1	1	0	1	1
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications	Required	Cr.	3	2	1	3	4
Human Factors	Required	Cr.	2	2	0	2	2
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-II	Required	Cr.	12	10	2	11	12
Turkish Language-II	Required	Cr.	2	2	0	2	2
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Introduction to Law	Required	Cr.	2	2	0	2	2
Quality Management Systems	Required	Cr.	2	2	0	2	2
Economics	Required	Cr.	2	2	0	2	2
Public and Private Sector Structure	Required	Cr.	2	2	0	2	3
Communication	Required	Cr.	2	2	0	2	2
Human Resource Management	Required	Cr.	2	2	0	2	3
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-III	Required	Cr.	12	10	2	11	12
General Business	Required	Cr.	3	3	0	3	3
Keyboard Techniques	Required	Cr.	5	1	4	3	6
Business and Social Security Law	Required	Cr.	2	2	0	2	2
Effective and Good Speaking	Elective	Cr.	2	2	0	2	2
Public Relations	Elective	Cr.	2	2	0	2	2
Office Management	Required	Cr.	2	2	0	2	3
Budgeting Processes	Elective	Cr.	3	2	1	3	3
Public Finance	Elective	Cr.	1	1	0	1	1
							30/34

4th TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
English Language-IV	Required	Cr.	12	10	2	11	12
Professional Corresponding	Required	Cr.	5	1	4	3	4
Filing and Archiving	Required	Cr.	3	3	0	2	3
Executive Assistance	Elective	Cr.	2	2	0	2	3
Information Management	Required	Cr.	2	2	0	2	3
Rules of Protocol and Social Behavior	Elective	Cr.	2	2	4	2	2
Management and Organization	Required	Cr.	2	2	0	2	3
Supply and Purchasing Management	Elective	Cr.	4	4	0	4	5
							30/35

COURSE DESCRIPTIONS

Communıcatıon: To enable the students to comprehend communication and its importance, the ways to establish communication, complications and problems, types and models of communication, the meaning and functions of organizational communication and the features of effective communication.

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

Supply 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.

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.

Introductıon To Law: To provide basic understanding and knowledge about definition of law, knowledge about major law systems throughout the world, statue rules and customary rules of law, essence of law, branches of law, concept of right and related topics.

General Business: This course is intended to participate in management activities with the student's business by making installation procedures.

Public Finance: To give general information about finance by making general description about public finance.

Economıcs: Making the students acquire basic concepts about Economics, analyze the problems and solutions in economic events and understand the acro-economic structure and theoretical basis of Macro Economics and the formation of price in production factors market and in aggregate market.

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

Effectıve and Good Speakıng: With this course, students will gain competencies in effective speech.

Rules of Protocol and Social Behavior: 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 behavior.

Professional Correspondıng: Students will be taught what professional correspondences, official writings, business writings, special writings are, and writings related to management fast and efficiently.

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

Informatıon 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.

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

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

Public Relations: The aim of this course is to make the students gain the basic terms related to public relations.

Business and Social Security Law: The aim of this course is to make the students gain the basic terms related to business life and the necessary laws regarding social security concept.

Filing And Archiving: Students will be gained the ability of filling and archiving with this course.

Executive Assıstance: Learning all the knowledge and skills of the profession of secretarial, the executive secretarial of the personal characteristics and professional qualifications which can be gained in understanding is aimed.

Security and Protection
Course Catalog

Name of the Program:	Security and Protection
Objective of the Programme:	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.

Security And Protection Program
WEEKLY COURSE SCHEDULE

1st TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
The Principles of Atatürk and Turkish Revolution History-I	Required	Cr.	2	2	0	2	2
Turkish Language-I	Required	Cr.	2	2	0	2	2
Foreign Language-I	Required	Cr.	12	10	2	11	12
Mathematics-I	Required	Cr.	3	3	0	3	3
Physics-I	Required	Cr.	2	2	0	2	2
Office Applications-I	Required	Cr.	3	2	1	3	4
Human Factors	Required	Cr.	2	2	0	2	2
Basic Law Knowledge	Required	Cr.	2	2	0	2	2
Basic Aeronautical Information	Required	Cr.	1	1	0	1	1
							30

2nd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
The Principles of Atatürk and Turkish Revolution History-II	Required	Cr.	2	2	0	2	2
Turkish Language-II	Required	Cr.	2	2	0	2	2
Foreign Language-II	Required	Cr.	12	10	2	11	12
Introduction to Law	Required	Cr.	2	2	0	2	2
Communication	Required	Cr.	2	2	0	2	3
Basic Security Knowledge - I	Required	Cr.	4	2	2	3	5
Close Defense - I	Required	Cr.	4	0	4	2	4
							30

3rd TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTC
			Total	Theoretical	Practice		
Foreign Language-III	Required	Cr.	12	10	2	11	12
Management and Organization	Required	Cr.	2	2	0	2	2
Basic Security Knowledge - II	Required	Cr.	3	2	1	3	3
Criminal Law and Criminal Procedural Law	Required	Cr.	3	3	0	3	4
Forensic Science and Crime Scene Investigation	Required	Cr.	2	2	0	2	3
Security and Emergency Procedures - I	Required	Cr.	3	2	1	3	3
Close Defense - II	Required	Cr.	3	0	3	2	3
							30

4th TERM

COURSE NAME	COURSE CATHEGORY	Cr./Co.	Weekly Course Hours			NATIONAL CREDIT	TOTAL ECTS
			Total	Theoretical	Practice		
Foreign Language-IV	Required	Cr.	12	10	2	11	12
Human and Unit Management	Required	Cr.	3	2	1	3	3
Security Systems	Required	Cr.	1	1	0	1	2
Security and Emergency Procedures - II	Required	Cr.	3	2	1	3	3
Close Defense - III	Required	Cr.	2	0	2	1	2
Security Projecting	Required	Cr.	3	1	2	2	3
Human and Group Psychology	Required	Cr.	2	2	0	2	2
Weapon Knowledge	Required	Cr.	2	2	0	2	3
							30

COURSE DESCRIPTIONS

Human and Group Psychology: It is aimed to recognize the human psychology in social events.

Criminal Law and Criminal Procedural Law: It is aimed to gain professional knowledge about criminal law and criminal procedural law.

Close Defense: It is aimed to neutralize any aggressors without causing harm to others.

Security Systems: It is aimed to understand the security and security systems.

Security and Emergency Procedures: It is aimed to know and decide what to do in case of emergency situation.

Human and Unit Management: It is aimed to improve the behavior of students in the areas of both people and unit management.

Weapon Knowledge: It is aimed to gain professional knowledge about guns and weapons.

Security Projecting: It is aimed students to design security projects using the related laws and equipment in their branch.

Basic Security Knowledge: It is aimed to gain professional knowledge about discipline, communication, intelligence and security.

Forensic Science and Crime Scene Investigation: It is aimed to teach effectively how to investigate the crime scene and how to collect and evaluate the necessary traces/marks.

Department of Foreign Language Teaching
Course Catalog

Name of the Program:	Department Of Foreign Language Teaching
Objective of the Programme:	The main goal of the Foreign Language Department is to provide cadets of NCO with an intensive English curriculum aiming the development in all four skills in order to accomplish missions/operations effectively and fulfil the needs of the Turkish Air Force. Foreign language is seen as a medium that provides technological, educational and managerial targets on behalf of Turkish Air Force. In order to accomplish this mission, Such activities as the placement tests to determine the appropriate language levels for the cadets, execution and planning of the lessons, testing and evaluation, material development, laboratory and class maintenance and the provision of supplementary course materials are carried out meticulously by the Foreign Language Department.

COURSE DESCRIPTIONS

English-I : The aim of the lesson is to enable students to use their English Language Knowledge effectively by improving their four basic skills; listening, reading, speaking and writing with the aim of fulfilling the requirements of their branch specialty, and to make them reach the required English level in order to follow English-II classes.

Language Skills-I: The aim of the lesson is to enable students to use their English Language Knowledge effectively by improving their four basic skills; listening, reading, speaking and writing with the aim of fulfilling the requirements of their branch specialty, and to make them reach the required English level in order to follow Language Skills-II classes.

English-II: The aim of the lesson is to enable students to use their English Language Knowledge effectively by improving their four basic skills; listening, reading, speaking and writing with the aim of fulfilling the requirements of their branch specialty, and to make them reach the required English level in order to follow English-III classes.

Language Skills-II: The aim of the lesson is to enable students to use their English Language Knowledge effectively by improving their four basic skills; listening, reading, speaking and writing with the aim of fulfilling the requirements of their branch specialty, and to make them reach the required English level in order to follow Language Skills-III: classes.

English-III: The aim of the lesson is to enable students to use their English Language Knowledge effectively by improving their four basic skills; listening, reading, speaking and writing with the aim of fulfilling the requirements of their branch specialty, and to make them reach the required English level in order to follow English-IV classes.

Language Skills- III: The aim of the lesson is to enable students to use their English Language Knowledge effectively by improving their four basic skills; listening, reading, speaking and writing with the aim of fulfilling the requirements of their branch specialty, and to make our students reach A2 language level criteria, determined by CEFR's language adequacy table which took place in European Language Portfolio.

English-IV The aim of the lesson is to enable students to use their English Language Knowledge effectively by improving their four basic skills; listening, reading, speaking and writing with the aim of fulfilling the requirements of their branch specialty, and to make our students reach A2 language level criteria, determined by CEFR's language adequacy table which took place in European Language Portfolia.

FOREIGN LANGUAGE TEACHING LABS

Our school has six language laboratories with forty chairs, cabins and headsets for the students; a computer, a chair, a table and a headset for the instructor in each. In addition to these, these labs have been equipped with a projector to present the audio-visual materials to the students. These audio visual materials enable students to improve their pronunciation and comprehension skills, and help them revise what they study during the classroom activities and learn effectively. Therefore, these language laboratories help the students to be more active in their learning experience and create a positive and attractive learning environment.

COMMON COURSES

Physics I-II: The aim of this course is to acquire skills which an air non-commissioned officer must have, like problem solving, logic forming, reasoning ability, thinking quickly and accurately by comprehending the basic principles of Physics to students and furnish students fundamental adequacy, following up related upper level courses. The physics laws that are taught theoretically are put into practice via experimental studies in laboratories.

Mathematics I-II: The aim of this lesson is to enable the students to develop the skills of solving problems, counting and expressing the problems in the logic of mathematical thinking. It also helps the students to have basic knowledge for the lessons of their own branches.

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 satisfyingly.

General Aim of The Prıncıples of Atatürk and Turkısh Revolutıon Hıstory 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.

Basic Aeronautical Information: 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.

Basic Law Knowledge: 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.

Office Applications: The aim of this course is to help the students to get the qualifications about learning the knowledge of hardware and software that are the basics of the information technology, the awareness of the safety of information, how to use the information systems based on Windows, how to form and arrange a document with the word-procedures programs, how to use the program of the table of accounting effectively, how to create slides with the programs of animations and also use the e-mail programs and the internet as a means of communication safely and effectively.

Learning Methodology: The purpose of this course is to help the students learn the basic concepts of learning methodology by giving

them needed knowledge and attitudes and to equip students with the basic competence in order to follow the upper courses.

Human Factors: The aim of this course is to make NCOs acquire basic concepts, knowledge and attitudes concerning behavior in organizations and human factors in aviation. It is also aimed to teach them ways of working in safe and productive manners and equip the NCOs with basic skills that will help them to follow necessary trainings.

Physics I-II Laboratory

There is a Physics Laboratory, capacity of which is 28 students. Experiments are performed with groups which consist of four students. Hence, seven different experiments can be done simultaneously. In Physics Laboratory, by using 23 different experimental sets, 69 different experiments which include 39 Mechanics, 15 Optics, 10 Electricity and Magnetism experiments can be performed in a year. The physics laws that are taught theoretically are put into practice via experimental studies in laboratories.