FACULTY OF AERONAUTICS AND ASTRONAUTICS

Eskişehir Technical University Faculty of Aeronautics and Astronautics was established in 1986 as the Vocational School of Civil Aviation in order to train qualified personnel in accordance with international civil aviation standards. It was transformed into the School of Civil Aviation on 11 July 1992 and into the Faculty on 23 June 2012. The departments of Avionics, Airframe and Powerplant Maintenance, Aviation Management, Air Traffic Control and Flight Training offer four-year undergraduate education with a one-year optional English preparatory programme, while the Department of Aerospace Engineering offers four-year undergraduate education with a compulsory English preparatory programme. Students can enter the department of Air Traffic Control by pre-registration and special aptitude exam, and Avionics, Airframe and Powerplant Maintenance, Aviation Management and Aerospace Engineering departments by central placement.
Faculty of Aeronautics and Astronautics has an airport open to international air transport, a SHY-145 approved maintenance organisation, 18 aircraft, 12 laboratories, flight, ground control and radar simulators. The faculty has the ability to perform major maintenance of aircraft under 5700 kg with its maintenance facility. In the Faculty of Aeronautics and Astronautics, where airport management, air traffic control services, flight and aircraft maintenance activities are also carried out effectively, students have the opportunity to learn activities that overlap with their education subjects in the field of practice.
Within this integrated structure, the Faculty of Aeronautics and Astronautics continues its activities in accordance with national and international standards from past to present with its training and aviation activities carried out in cooperation with national and international aviation organisations and industries. With its human resources, necessary equipment and the aforementioned features, the Faculty is among the few aviation schools worldwide.

Dean	: Prof.Dr. Cem ÇETEK
Vice-Dean	: Dr. Lecturer Sinem KAHVECİOĞLU
Vice-Dean	: Dr. Lecturer Emircan ÖZDEMİR
Secretary to the Faculty	:

STAFF

Professors:
Önder ALTUNTAŞ, Özlem ATALIK, Tolga BAKLACIOĞLU, Cem ÇETEK, Ender GEREDE, Tahir Hikmet KARAKOÇ, Emre KIYAK, Ayşe KÜÇÜK YILMAZ, Hakan OKTAL, Ferhan ŞENGÜR, Önder TURAN, Dilek TURAN, Enis Turhan TURGUT, Öznur USANMAZ

Associate Professors:
Savaş Selahattin ATEŞ, Ünal BATTAL, Vildan DURMAZ, Nalan ERGÜN, Aziz KABA, Özlem ŞAHİN, Suat USLU, Gülay ÜNAL, Ebru YAZGAN

Faculty Members:
Hakkı AKSOY, Müge ARMATLI KAYRAK, Fulya AYBEK ÇETEK, Emre AYDOĞAN, Kübra Gülnaz BÜLBÜL, Demet CANPOLAT TOSUN, Ertan ÇINAR, Hülya ERGÜL, Yasemin IŞIK, Sinem KAHVECİOĞLU, Barış KARABAYRAK, Hakan KORUL, İlkay ORHAN, Gamze ORHAN, Emircan ÖZDEMİR, Uğur ÖZDEMİR, Asuman ÖZGER, Ali Emre SARILGAN, Tamer SAVAŞ, Alper ULUDAĞ, Ümran ÜNDER, Kadriye YAMAN, Asiye Akile YILDIRIM

Lecturers:
Füsun ADAR, Hakan AYDEMİR, Ali Ozan CANARSLANLAR, Tulga Metin CANDAŞ, Gökhan DURMUŞ, Gülcan GÜNAY, Mehmet Selçuk İRDE, Ramazan KALE, Nevzet KAYA, Hasan LİK, Osman ODABAŞI, Erkan ORMAN, Metin ÖZGÜR, Sema SAB, Hasan TİFTİK, Orkun TUNÇKAN, Nevin YAVUZ, Nilgün YILDIRIM

Research Assistants:
Fatih Kutay AKPINAR, Hasan BİRDANE, Eşref ÇAKIR, Hurşit DEĞİRMENCİ, Ali Armağan DİLER, Ahmet ERMEYDAN, Onur GÜNEY, Cemal IŞILAK, Ferhat İNCE, Merve KINACI, Nurşah ÖZ, Enes ÖZÇELİK, Nedim SUNAY, Burak TARHAN, Ece YURDUSEVİMLİ METİN, Selen KIRCI, Yasin KILIÇ

DEPARTMENT OF AIR TRAFFIC CONTROL

Air traffic controllers are trained in accordance with International Civil Aviation Organisation (ICAO) and EUROCONTROL standards in order to ensure safe, regular and efficient air traffic flow in Turkish airspace. It is the first department in Turkey to provide air traffic control education at undergraduate level. In addition to theoretical courses, students receive practical training in the Air Traffic Control Radar Simulator, Square Control Simulator and Flight Procedures Design Laboratory. At

the same time, the air traffic services carried out at Eskişehir Technical University Hasan Polatkan Airport provide students with the opportunity to train in a real traffic environment.
Twenty students are admitted to the Air Traffic Control Department through pre-registration and special aptitude exam. The department provides four-year undergraduate education after one year of optional English preparatory education. There is a total of thirty working days internship obligation to be done in air traffic control units.
Graduates work in the Air Traffic Control Units of the General Directorate of State Airports Authority.

Department Head : Prof.Dr. Öznur USANMAZ
Deputy Department Head : Assoc. Prof.Dr. Özlem ŞAHİN
Deputy Department Head : Lecturer Doctor Ali Ozan CANARSLANLAR

PROGRAM

I.Semester

HTK101	Aircraft Basic Knowledge	4+0	4.0	HTK104	Aerodrome Control Procedures	5+0	6.0
HTK103	Air Traffic Services	4+0	5.5	HTK105	Introduction to Air Traffic Control	2+0	3.0
HTK205	Communication and Navigation Systems	3+0	4.0	HTK108	Basic Principles of Helicopter	2+0	2.5
İNG117 (Eng)	English Speaking Skills I	6+0	4.0	HTK215	Aerodromes	3+0	4.5
MAT119	Mathematics I	3+1	5.0	İNG118 (Eng)	English Speaking Skills II	6+0	4.0
SHU102	Meteorology	3+0	5.5	MAT120	Mathematics II	3+1	4.0
	Elective Courses	--	2.0	MEK110	Mechanics for Air Traffic Control	3+0	3.0
					Elective Courses	--	3.0
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			30.0				30.0

III.Semester

ARY205	Research Methods and Presentation Techniques	3+0	3.0	BİM301	Algorithm and Programming	2+2	4.5
HTK222	Aeronautical Information Management	4+0	4.5	HTK220	Non-Radar Control Procedures	5+0	6.0
HTK227	Aerodrome Control Simulation I	2+2	5.0	HTK224	Flight Mechanics and Aircraft Performance	3+0	3.0
İNG219 (Eng)	English Speaking Skills III	4+0	2.0	HTK228	Aerodrome Control Simulation II	2+4	6.0
İST409	Mathematical and Statistical Methods in Decision Making	4+0	4.0	HTK232	Air Traffic Communication	3+0	3.0
MAT108	Linear Algebra and Analytic Geometry	2+0	3.0	HTK234	Navigation	3+0	3.5
PLT225	Aerodynamics	3+0	3.5	İNG220 (Eng)	English Speaking Skills IV	4+0	2.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
	Elective Courses	--	3.0				
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			30.0				30.0

V.Semester

HTK316	Radar Control Procedures	5+0	6.0	HEE403	Aircraft Instruments	3+1	4.5
HTK317	Instrument Flight Procedures	4+2	8.0	HTK320	Human Factors in Air Traffic Control	3+0	4.0
HTK323	Trajectory Analysis and Prediction	3+0	4.5	HTK324	Surveillance Systems	3+0	3.0
HTK325	Non-Radar Control Simulation	7+1	6.5	HTK326	Radar Approach Control Simulation	7+1	14.0

HYO105	Air Transportation Management	3+0	3.0	HUK418	Air Law	2+0	2.5
İNG321 (Eng)	English Speaking Skills V	4+0	2.0	İNG322 (Eng)	English Speaking Skills VI	4+0	2.0
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			30.0				30.0

	VII.Semester				**VIII.Semester**		
HTK409	Civil-Military Air Traffic Coordination	2+0	3.0	HTK106	Unmanned Aerial Vehicles	2+0	2.5
HTK418	Airspace Organization	2+0	3.0	HTK428	Trends, Perspectives and Visions in Air Traffic Management	2+0	3.0
HTK423	Air Traffic Flow Management	3+0	2.5	HTK434	Air Traffic Management	3+0	2.5
HTK425	Radar Area Control Simulation	7+1	12.5	HTK436	Radar Coordination Simulation	7+1	8.5
HTK426	Safety Management in Air Traffic System	2+0	2.5	HTK438	Air Traffic Practices II	0+4	2.5
HTK433	Air Traffic Practices I	0+4	2.5	HTKSJ402	Internship	0+2	5.0
İNG423 (Eng)	English Speaking Skills VII	4+0	2.0	İNG424 (Eng)	English Speaking Skills VIII	4+0	2.0
TÜR125	Turkish Language I	2+0	2.0	TÜR126	Turkish Language II	2+0	2.0
					Elective Courses	--	2.0
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			30.0				30.0

Elective Courses

ALM255 (Ger)	German I	3+0	4.0
BEÖ155	Physical Education	2+0	2.0
ESTÜ101	Introduction to University Life	0+1	2.0
ESTÜ103	Ceramic Design Processes	2+1	3.0
ESTÜ104	Academic and Life Skills	2+1	3.0
ESTÜ106	Project Management	2+1	3.0
ESTÜ111	Volunteering Works	1+2	4.0
ESTÜ112	Cyber Security for Everyone	2+0	2.0
ESTÜ113	Design Thinking	3+0	3.0
ESTÜ114	Visual Thinking	3+0	3.0
ESTÜ115	Photographic Viewpoint	2+1	3.0
ESTÜ116	Computer Aided Design I	3+0	3.0
ESTÜ117	Computer Aided Design II	3+0	3.0
ESTÜ118	Visual Thinking with Concepts	3+0	3.0
ESTÜ119	Flute	3+1	3.0
ESTÜ120	Solfege	3+1	3.0
ESTÜ121	Piano	3+1	3.0
ESTÜ122	Guitar	3+1	3.0
ESTÜ123	Gender Equality in Work Life	2+0	3.0
ESTÜ125	Philosophy of Science	3+0	3.0
ESTÜ127	Diction	1+2	3.0
ESTÜ129	Turkish as a Foreign Language I	2+0	2.0
ESTÜ130	Turkish as a Foreign Language II	2+0	2.0
ESTÜ131	Argentine Tango Dance	0+2	2.0
ESTÜ132	History of Political Thought	3+0	3.0
ESTÜ133	Disability and Awareness	3+0	3.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ210	Culture of Museum	2+0	2.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ307	Children Rights and Family Education	2+0	2.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ESTÜ402	Coaching and Leadership	3+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
FRA255 (Fra)	French I	3+0	4.0

FRA256 (Fra)	French II	3+0	4.0
MÜZ151	Short History of Music	2+0	3.0
MÜZ155	Turkish Folk Music	2+0	2.0
MÜZ157	Traditional Turkish Art Music	2+0	2.0
SAĞ102	First Aid	2+0	2.5
SAN155	Hall Dances	0+2	2.0
SNT155	History of Art	2+0	2.0
SOS155	Folkdance	2+0	2.0
SOS312	Organizational Behavior	3+0	4.5
THU203	Community Services	0+2	3.0

DEPARTMENT OF AIR TRAFFIC CONTROL (KKTC NATIONALITY)

Department Head : Prof.Dr. Öznur USANMAZ
Deputy Department Head : Assoc. Prof.Dr. Özlem ŞAHİN
Deputy Department Head : Lecturer Doctor Ali Ozan CANARSLANLAR

DEPARTMENT OF AVIONICS

Qualified maintenance and repair personnel are trained in international standards for the aviation sector. The Department of Avionics provides education in accordance with the requirements of European Union standards. In addition to theoretical courses, students receive practical training in avionics, high frequency, automatic control, DME, VOR, ILS, computer, basic electrical electronics, electrotechnical, communication systems laboratories and SHY-145 approved maintenance facilities within the Faculty.
Sixty-five students are admitted to the Department of Avionics by central placement. The department provides four-year undergraduate education after one year of English preparatory education. The compulsory internship period is 40 working days. In addition to the compulsory internships, students can also do an optional internship for 20 working days as included in the course curriculum.
Graduates work in the technical departments of Turkish Technic, Turkish Air Force Air Supply Maintenance Centres, private airline companies and other enterprises operating in the field of aviation.

Department Head : Prof.Dr. Emre KIYAK
Deputy Department Head : Dr. Lecturer Demet CANPOLAT TOSUN

PROGRAM

	I.Semester				**II.Semester**		
FİZ105	Physics I	4+0	6.0	FİZ231	Waves and Optics	4+0	5.0
FİZ107	Physics Laboratory I	0+2	1.5	HYO116	Aviation Legislation	3+0	4.0
HEE105	Theory of Flight	3+0	3.5	HYO122	Aircraft Materials I	2+1	3.0
HYO115	Introduction to Civil Aviation	2+0	3.0	İNG196 (Eng)	English for General Purposes II	4+0	3.0
İNG195 (Eng)	English for General Purposes I	4+0	3.0	MAT802	Mathematics II	4+0	4.0
MAT801	Mathematics I	4+0	4.0	MEK112	Mechanics	3+0	3.0
MAT803	Linear Algebra	3+0	3.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0		*Elective Courses*	--	6.0
	Elective Courses	--	4.0				
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			30.0				30.0

	III.Semester				**IV.Semester**		
HEE213	Aircraft Structures and Systems I	3+1	3.0	HEE214	Aircraft Structures and Systems II	2+0	2.0

HEE215	Aircraft Materials II	2+0	2.0	HEE222	Non-destructive Inspection	0+2	2.0
HYO221	Electrical Fundamentals I	3+0	3.0	HEE226	Electronic Fundamentals Laboratory I	0+2	2.0
HYO223	Electrical Fundamentals Laboratory I	0+2	1.5	HEE234	Electronic Fundamentals I	2+0	3.0
HYO225	Aircraft Maintenance Terminology I	3+0	4.0	HEE236	Communication Systems I	2+0	3.0
İNG209 (Eng)	English Language Skills III	3+0	3.0	HYO222	Electrical Fundamentals II	3+0	3.0
MAT208	Differential Equations	3+0	3.5	HYO224	Electrical Fundamentals Laboratory II	0+2	1.5
TER203	Thermodynamics	4+0	4.0	HYO226	Aircraft Maintenance Terminology II	3+0	4.0
TRS131	Technical Drawing and Standards	4+0	4.0	İNG210 (Eng)	English Language Skills IV	3+0	3.0
TÜR125	Turkish Language I	2+0	2.0	MEK218	Fluid Mechanics	3+0	3.0
				TÜR126	Turkish Language II	2+0	2.0
					Area Elective Courses	--	1.5
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			30.0				30.0

V.Semester

HEE315	Aircraft Structures and Systems III	2+0	3.0	HEE318	Electronic Fundamentals III	2+0	2.0
HEE327	Electronic Fundamentals II	2+1	3.0	HEE320	Digital Circuits II	2+1	3.0
HEE329	Digital Circuits I	2+1	3.0	HEE324	Navigation Systems I	3+0	4.0
HEE331	Aircraft Hardware	1+2	4.5	HEE326	Aircraft Electricity Workshop	2+4	5.0
HEE335	Maintenance Practices I	2+3	5.0	HEE328	Digital Data Transmission	2+0	2.0
HYO313	Electrical Machinery	3+0	3.0	HYO336	Aircraft Electrical Systems	4+0	4.0
HYO319	Aircraft Aerodynamics	3+1	4.0	HYO338	Electronic Instrument Systems	3+0	4.0
	Area Elective Courses	--	4.5	MEK318	Flight Mechanics	3+0	3.0
					Area Elective Courses	--	3.0
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			30.0				30.0

VI.Semester

VII.Semester

HEE421	Communication Systems II	3+0	3.0	HEE432	Gas Turbine Engines Workshop	0+3	1.5
HEE423	Navigation Systems II	3+0	3.0	HEE444	Aircraft Instrument Systems II	2+0	2.0
HEE427	Troubleshooting Methodology	2+0	2.0	HEE446	Applications of Avionics	0+3	3.0
HEE431	Gas Turbine Engines	3+0	3.0	HEE456	Maintenance Practices II	1+5	3.5
HEE443	Microprocessors	3+1	3.0	HEESJ402	Internship I	0+2	5.0
HEE453	Aircraft Instrument Systems I	2+0	3.0	HYO419	Modern Avionic Systems	2+0	2.5
HYO420	Electromagnetic Environment	2+0	2.5	HYO422	Human Factors	3+0	3.0
HYO421	Automatic Flight Systems	3+0	3.0	HYO436	Flight Controls	2+0	2.0
	Area Elective Courses	--	7.5		*Area Elective Courses*	--	7.5
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			30.0				30.0

VIII.Semester

Elective Courses

ALM255 (Ger)	German I	3+0	4.0
BEÖ155	Physical Education	2+0	2.0
ESTÜ101	Introduction to University Life	0+1	2.0
ESTÜ103	Ceramic Design Processes	2+1	3.0
ESTÜ104	Academic and Life Skills	2+1	3.0

ESTÜ106	Project Management	2+1	3.0
ESTÜ111	Volunteering Works	1+2	4.0
ESTÜ112	Cyber Security for Everyone	2+0	2.0
ESTÜ113	Design Thinking	3+0	3.0
ESTÜ114	Visual Thinking	3+0	3.0
ESTÜ115	Photographic Viewpoint	2+1	3.0
ESTÜ116	Computer Aided Design I	3+0	3.0
ESTÜ117	Computer Aided Design II	3+0	3.0
ESTÜ118	Visual Thinking with Concepts	3+0	3.0
ESTÜ119	Flute	3+1	3.0
ESTÜ120	Solfege	3+1	3.0
ESTÜ121	Piano	3+1	3.0
ESTÜ122	Guitar	3+1	3.0
ESTÜ123	Gender Equality in Work Life	2+0	3.0
ESTÜ125	Philosophy of Science	3+0	3.0
ESTÜ127	Diction	1+2	3.0
ESTÜ129	Turkish as a Foreign Language I	2+0	2.0
ESTÜ130	Turkish as a Foreign Language II	2+0	2.0
ESTÜ131	Argentine Tango Dance	0+2	2.0
ESTÜ132	History of Political Thought	3+0	3.0
ESTÜ133	Disability and Awareness	3+0	3.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ204	Effective Reading and Writing Skills	3+0	4.0
ESTÜ210	Culture of Museum	2+0	2.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ307	Children Rights and Family Education	2+0	2.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ESTÜ402	Coaching and Leadership	3+0	3.0
FRA255 (Fra)	French I	3+0	4.0
FRA256 (Fra)	French II	3+0	4.0
HYO113	Aviation History	2+0	2.0
HYO120	Basics of Rescue and Fire Fighting	2+0	3.0
HYO334	Sustainable Aviation Technologies	2+0	2.0
İLT307	Communication	3+0	3.0
İSG401	Occupational Health and Safety I	2+0	2.0
İSG402	Occupational Health and Safety II	2+0	2.0
MÜZ151	Short History of Music	2+0	3.0
MÜZ155	Turkish Folk Music	2+0	2.0
MÜZ157	Traditional Turkish Art Music	2+0	2.0
REK242	Sports Aviation	1+2	3.0
RUS255 (Rus)	Russian I	3+0	4.0
RUS256 (Rus)	Russian II	3+0	4.0
SAĞ102	First Aid	2+0	2.5
SAN155	Hall Dances	0+2	2.0
SNT155	History of Art	2+0	2.0
SOS155	Folkdance	2+0	2.0
THU203	Community Services	0+2	3.0
TKY304	Quality Assurance Systems	2+0	3.0

Area Elective Courses

ESTÜ305	Sustainable Marketing	3+0	5.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
ESTÜ405	Computer Programming	3+0	5.0
HEE230	Communication Systems Laboratory I	0+2	3.0
HEE322	Unmanned Aerial Vehicle Design, Control Systems and Workshop Applications	2+2	4.5
HEE419	Maintenance and Repair in Aircraft Electric Systems	2+1	3.0
HEE434	Automatic Control	2+2	4.5
HEE440	Maintenance Practices-M13 II	0+3	3.0
HEE441	Maintenance Workshop Applications-M13 I	0+5	3.0
HEE442	Maintenance Workshop Applications-M13 II	0+5	4.5
HEE447	Aircraft Structures and Systems Applications-M11	0+3	3.0
HEE448 (Eng)	Microwave Theory	3+0	3.0
HEE449	Maintenance Practices-M13 I	0+5	4.5

HEE452 (Eng)	I.L.S./V.O.R./D.M.E.	3+0	3.0
HEE454	Vocational Training in Workplace	0+18	18.0
HEESJ404	Internship II	0+2	2.5
HYO105	Air Transportation Management	3+0	3.0
HYO114	Ergonomics in Aviation	4+0	5.0
HYO304	Aircraft Manufacturing Technologies	3+0	4.5
HYO315	Electrical Machinery Laboratory	0+2	3.0
HYO406	Helicopter Theory and Systems	3+0	4.5
HYO409	Case Studies in Aviation Safety	2+0	3.0
HYO411	Vibration Analysis in Aircrafts	2+1	3.0
HYO413 (Eng)	Aircraft Systems Design	2+2	4.5
HYO415	Academic and Technological Progresses in Aviation	3+0	4.5
HYO416	Reciprocating Engine Theory, Systems and Maintenance	3+0	3.0
HYO425	Safety Management System	2+0	3.0
HYO428	Aviation Meteorology	3+0	3.0
İNG145 (Eng)	Business English I	2+0	2.0
İNG146 (Eng)	Business English II	2+0	2.0
İNG309 (Eng)	English Language Skills V	3+0	3.0
İNG310 (Eng)	English Language Skills VI	3+0	3.0
İŞL301	Human Resources Management	3+0	4.0
SHU221	Sustainability in Aviation	3+0	6.0
SHU308	Aviation Ethics	2+0	4.5
SHU424	Aircraft Maintenance and Reliability Management	3+0	3.0
UGB422	Environmental Impact Assessment in Aviation	3+0	4.5
UGB424	Reciprocating Engines	1+3	4.5

DEPARTMENT OF AEROSPACE ENGINEERING (ENGLISH)

New technologies, rapid developments in the design and production of aerospace vehicles increase the need for graduates trained in this field day by day. In addition, the continuous advancement of aerospace technology brings with it the need for innovations in areas such as lighter materials, efficient engines, safe, coordinated, efficient and environmentally friendly execution of aerospace operations, automation, artificial intelligence and human factors, which are becoming increasingly widespread in the field. In this context, the Aerospace Engineering program aims to educate engineers who have the knowledge and skills required by their profession, who can continuously renew themselves, who have professional and ethical responsibility, who are modern, creative, able to produce projects, who have developed safety, environmental and social awareness, and to conduct and disseminate research that will contribute to the development of knowledge and technologies needed by society in the fields of aerospace.

Twenty students are admitted to the Department of Aerospace Engineering by central placement. The department provides four-year undergraduate education after one year of compulsory English preparatory education. The compulsory internship period is 40 working days.

Graduates of Aerospace Engineering have the opportunity to be employed in companies such as Turkish Space Agency, TUBITAK / TUBITAK UZAY, Turkish Aerospace Industry, Roketsan, Aselsan, HAVELSAN, Baykar Technologies, TEI - TUSAŞ Engine Industry Inc., ALP Aviation Industry and AYCAN Aviation.

Department Head : Prof.Dr. Cem ÇETEK
Deputy Department Head :

PROGRAM

I.Semester				II.Semester			
EKİM105 (Eng)	General Chemistry	4+0	6.0	EMAT112 (Eng)	Calculus II	4+2	7.5
EMAT111 (Eng)	Calculus I	4+2	7.5	FİZ106 (Eng)	Physics II	4+0	6.0
FİZ105 (Eng)	Physics I	4+0	6.0	FİZ108 (Eng)	Physics Laboratory II	0+2	1.5
FİZ107 (Eng)	Physics Laboratory I	0+2	1.5	İSG402	Occupational Health and Safety II	2+0	2.0
İSG401	Occupational Health and Safety I	2+0	2.0	MKM104 (Eng)	Computer Aided Engineering Technical Drawing	2+2	5.0
TÜR125	Turkish Language I	2+0	2.0	TÜR126	Turkish Language II	2+0	2.0
UZY101 (Eng)	Introduction to Aerospace and Ethics	2+0	3.0	UCK102 (Eng)	Theory of Flight	3+0	4.0

	Elective Courses	--	2.0		*Elective Courses*	--	2.0
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			30.0				30.0

III.Semester				**IV.Semester**			
BİL200 (Eng)	Computer Programming	2+2	6.0	EMAT223 (Eng)	Linear Algebra and Numerical Methods	2+2	4.5
EİST201 (Eng)	Engineering Statistics	3+0	4.0	MEK216 (Eng)	Engineering Mechanics: Dynamics	3+0	4.0
EMAT211 (Eng)	Differential Equation	3+1	4.5	MLZ216 (Eng)	Mechanical Behaviour of Materials I	2+0	3.0
MEK217 (Eng)	Engineering Mechanics: Statics	3+0	5.0	MLZ232 (Eng)	Introduction to Materials Science	3+0	3.5
MEK323 (Eng)	Fundamentals of Fluid Mechanics	4+0	6.5	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	UCK202 (Eng)	Circuits, Signals and Systems	3+0	4.5
UZY201 (Eng)	Astrophysics	2+0	2.0	UZY202 (Eng)	Thermodynamics	3+0	4.5
					Area Elective Courses	--	4.0
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			30.0				30.0

V.Semester				**VI.Semester**			
İKT356 (Eng)	Engineering Economics	3+0	4.5	MKM303 (Eng)	Heat Transfer	4+0	5.0
UCK301 (Eng)	Flight Mechanics	3+0	5.0	UZY302 (Eng)	Propulsion Systems	3+0	5.0
UCK303 (Eng)	Aerodynamics	4+0	5.0	UZY304 (Eng)	Human Factors	2+0	2.0
UCK305 (Eng)	Measurement Techniques and Sensors	2+0	3.0	UZY306 (Eng)	Fundamentals of Space Physics	3+0	4.0
UZY301 (Eng)	Aerospace Structures	3+0	5.0	UZY308 (Eng)	Principles of Space Environment and Effects	3+0	3.0
UZY303 (Eng)	Aerospace Materials	3+0	3.5	UZY310 (Eng)	Flight Stability and Control	3+0	5.0
	Elective Courses	--	4.0		*Area Elective Courses*	--	3.0
					Elective Courses	--	3.0
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			30.0				30.0

VII.Semester				**VIII.Semester**			
EEM415 (Eng)	Engineering Design and Research	2+0	3.0	UZY402 (Eng)	Aerospace Engineering Design Project II	1+5	4.5
UZY401 (Eng)	Aerospace Engineering Design Project I	2+2	4.5	UZYSJ402 (Eng)	Aerospace Engineering Internship II	0+2	2.5
UZYSJ401 (Eng)	Aerospace Engineering Internship I	0+2	2.5		*Area Elective Courses*	--	20.0
	Area Elective Courses	--	20.0		*Elective Courses*	--	3.0
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			30.0				30.0

Elective Courses

ALM255 (Ger)	German I	3+0	4.0
ANT452	First Aid	1+2	4.0
ARK108	Archaeology	2+0	2.0
BEÖ155	Physical Education	2+0	2.0

BEÖ176	Trekking	1+2	4.0
ESTÜ101	Introduction to University Life	0+1	2.0
ESTÜ102 (Eng)	Negotiation Techniques Class	2+0	3.0
ESTÜ103	Ceramic Design Processes	2+1	3.0
ESTÜ104	Academic and Life Skills	2+1	3.0
ESTÜ106	Project Management	2+1	3.0
ESTÜ111	Volunteering Works	1+2	4.0
ESTÜ112	Cyber Security for Everyone	2+0	2.0
ESTÜ113	Design Thinking	3+0	3.0
ESTÜ114	Visual Thinking	3+0	3.0
ESTÜ115	Photographic Viewpoint	2+1	3.0
ESTÜ116	Computer Aided Design I	3+0	3.0
ESTÜ117	Computer Aided Design II	3+0	3.0
ESTÜ118	Visual Thinking with Concepts	3+0	3.0
ESTÜ119	Flute	3+1	3.0
ESTÜ120	Solfege	3+1	3.0
ESTÜ121	Piano	3+1	3.0
ESTÜ122	Guitar	3+1	3.0
ESTÜ123	Gender Equality in Work Life	2+0	3.0
ESTÜ125	Philosophy of Science	3+0	3.0
ESTÜ127	Diction	1+2	3.0
ESTÜ129	Turkish as a Foreign Language I	2+0	2.0
ESTÜ130	Turkish as a Foreign Language II	2+0	2.0
ESTÜ131	Argentine Tango Dance	0+2	2.0
ESTÜ132	History of Political Thought	3+0	3.0
ESTÜ133	Disability and Awareness	3+0	3.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ204	Effective Reading and Writing Skills	3+0	4.0
ESTÜ206	Financial Literacy	3+0	3.0
ESTÜ207	General Psychology	2+0	3.0
ESTÜ210	Culture of Museum	2+0	2.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ307	Children Rights and Family Education	2+0	2.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ESTÜ402	Coaching and Leadership	3+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
ESTÜ405	Computer Programming	3+0	5.0
FOT202	Photography	2+0	3.0
FRA255 (Fra)	French I	3+0	4.0
FRA256 (Fra)	French II	3+0	4.0
HUK252	Labor Law	2+0	2.5
HUK418	Air Law	2+0	2.5
HUK458	Industrial Rights and Technological Development	3+0	3,0
HYO120	Basics of Rescue and Fire Fighting	2+0	3.0
İKT151 (Eng)	Economics	3+0	3.0
İLT201 (Eng)	Interpersonal Communication	3+0	4.5
İLT419	Body Language and Diction	2+0	5.0
İSN309	Mass Media	3+0	3.0
İSN409	Organizational Communication	3+0	4.5
İSP151 (Spa)	Spanish I	4+0	4.0
İSP152 (Spa)	Spanish II	4+0	4.0
İŞL101	Introduction to Business	3+0	4.5
İŞL102	Management and Organization	3+0	4.0
İŞL209	Business Management	2+0	2.0
İŞL301	Human Resources Management	3+0	4.0
İŞL321	Applied Entrepreneurship	3+1	5.0
İŞL406	Strategic Management	3+0	4.5
İŞL421	Entrepreneurship	2+0	3.0
İŞL454 (Eng)	Management of Technology	3+0	4.5
İŞL475	Techno-Entrepreneurship	3+0	4.0
İTA255 (İta)	Italian I	3+0	4.0
İTA256 (İta)	Italian II	3+0	4.0
JAP301 (Jap)	Japanese I	4+0	4.0

JAP302 (Jap)	Japanese II	4+0	4.0
KÜL451 (Eng)	History of Science and Engineering	3+0	4.5
MFALM101 (Ger)	German for Engineering I	3+0	4.0
MFALM102 (Ger)	German for Engineering II	3+0	4.0
MFALM201 (Ger)	German for Engineering III	3+0	4.0
MFALM202 (Ger)	German for Engineering IV	3+0	4.0
MUH151	Introduction to Accounting	3+0	4.5
MÜH402 (Eng)	Engineering Ethics	2+0	3.0
MÜH404 (Eng)	Innovation Management	3+0	3.0
MÜZ101	Evolution of Music	2+0	3.0
MÜZ151	Short History of Music	2+0	3.0
MÜZ157	Traditional Turkish Art Music	2+0	2.0
ÖMB322	Ethics of Science and Research	2+0	3.0
PSİ102	Psychology	3+0	3.5
REK242	Sports Aviation	1+2	3.0
RTV281	Digital Literacy	2+2	4.0
RUS255 (Rus)	Russian I	3+0	4.0
RUS256 (Rus)	Russian II	3+0	4.0
SAĞ102	First Aid	2+0	2.5
SAN155	Hall Dances	0+2	2,0
SNT155	History of Art	2+0	2.0
SOS154	Man and Sociology	2+0	3.0
SOS155	Folkdance	2+0	2,0
THU203	Community Services	0+2	3.0
TİY121	Introduction to Theatre	2+0	3.0
TİY152	Theatre	2+0	2.5
TİY308	Republic Era Turkish Theatre	2+0	3.0

Area Elective Courses

BİL409 (Eng)	Decision Support Systems	3+0	6.0
EEM493 (Eng)	Digital Control Systems	3+0	5.0
ENM203 (Eng)	Linear Programming	2+2	5.5
ENM304 (Eng)	Investment Planning and Analysis	4+0	6.0
ENM306 (Eng)	Stochastic Models	3+0	4.5
ENM419 (Eng)	Sustainable Systems Engineering	3+0	5.0
ENM442 (Eng)	Decision Analysis	3+0	4.5
HEE448 (Eng)	Microwave Theory	3+0	3.0
HTK428 (Eng)	Trends, Perspectives and Visions in Air Traffic Management	2+0	3.0
İST244 (Eng)	Engineering Probability	3+0	5.0
LOJ401 (Eng)	Logistics Management and Models	3+0	6.0
MEK406 (Eng)	Mechanical Vibrations	3+0	5.0
MKM304 (Eng)	Manufacturing Techniques	2+2	5.0
MKM306 (Eng)	Experimental Engineering	2+2	4.0
MKM413 (Eng)	Engineering Applications of Finite Element Analysis	3+0	5.0
MLZ221 (Eng)	Physical Properties of Materials	2+0	2.5
MLZ229 (Eng)	Materials Characterization Techniques I	2+0	3.0
MLZ230 (Eng)	Materials Characterization Techniques II	2+0	3.5
MLZ327 (Eng)	Mechanical Behaviour of Materials II	2+0	3.0
MLZ453 (Eng)	Advanced Materials and Composites	2+0	3.0
MLZ474 (Eng)	Aviation Materials	2+0	3.0
MLZ475 (Eng)	Polymer Matrix Composites	2+0	3.0
MLZ486 (Eng)	Strengthening Mechanisms in Materials	2+0	3.0
UZY204 (Eng)	Astrochemistry	2+0	4.0
UZY406 (Eng)	Professional Practice	0+15	20.0

DEPARTMENT OF AVIATION ADMINISTRATION

Qualified personnel needed by public and private organisations in the aviation sector in terms of business management are trained in line with international requirements. Vocational courses such as Air Transport, Airline Management, Airport Management, Operations Performance, Aviation Safety and Security; theoretical courses in business management such as Financial Management, Marketing Management, Human Resources Management, Logistics Management and IATA approved certified courses such as Ground Services, Passenger Services, Air Cargo and Dangerous Goods are included in the programmes of the Department of Aviation Management.

Sixty students are admitted to the Department of Aviation Management by central placement. The department offers a four-year undergraduate education after one year of English preparatory education. Students can do an optional internship for at least 20 working days.
Graduates work in Turkish Airlines, private airline companies, airports, airport ground handling, catering and cargo businesses and other aviation organisations.

Department Head : Prof.Dr. Ayşe KÜÇÜK YILMAZ
Deputy Department Head :

PROGRAM

I.Semester

HYO451	General Aviation	3+0	4.5	İNG128 (Eng)	English II	4+0	4.0
İKT151	Economics	3+0	3.0	MAT172	Mathematics II	2+0	3.0
İNG127 (Eng)	English I	4+0	4.0	SHU103	Flight Theory	2+0	3.5
İŞL101	Introduction to Business	3+0	4.5	SHU108	Air Transportation	3+0	4.5
MAT129	Mathematics I	2+0	4.0	SHU112	Meteorology I	3+0	6.0
MUH151	Introduction to Accounting	3+0	4.5	SHU244	Ground Handling I	4+0	5.0
SHU101	Introduction to Civil Aviation	2+0	3.5		*Area Elective Courses*	--	4.0
	Elective Courses	--	2.0				
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			30.0				30.0

III.Semester

İNG229 (Eng)	English III	4+0	3.5	HYO230	Aviation Security	3+0	5.0
İŞL102	Management and Organization	3+0	4.0	İNG230 (Eng)	English IV	4+0	4.0
SHU213	Flight Operations	3+0	4.5	SHU236	Flight Performance	2+0	3.0
SHU217	Airport Operations and Equipment	3+0	4.0	SHU242	Operation and Performance I	4+0	6.0
SHU219	Navigation and Navigation of Aids	3+0	4.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
SOS107	Behavioral Sciences	2+0	3.0	TÜR126	Turkish Language II	2+0	2.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0		*Area Elective Courses*	--	8.0
TÜR125	Turkish Language I	2+0	2.0				
	Area Elective Courses	--	3.0				
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			30.0				30.0

V.Semester

FİN202	Financial Management	3+0	4.5	İNG308 (Eng)	Aviation English II	4+0	5.0
İNG307 (Eng)	Aviation English I	4+0	5.0	İŞL417	Management Information Systems	3+0	4.5
PZL302	Marketing Management	3+0	4.5	SHU302	Airline Management	3+0	4.5
SHU405	Aviation Safety	3+0	4.5	SOS312	Organizational Behavior	3+0	4.5
	Area Elective Courses	--	11.5		*Area Elective Courses*	--	9.0
					Elective Courses	--	2.5
			-----				-----
			30.0				30.0

VII.Semester

HYO417	Crew Resource Management	3+0	4.5	HUK418	Air Law	2+0	2.5

İNG401 (Eng)	Advanced English I	4+0	3.0	İNG402 (Eng)	Advanced English II	4+0	3.0
NÜM305	Quantitative Methods	3+0	4.5	PZL410	Airline Marketing	2+0	3.0
SHU403	Finance in Aviation Companies	3+0	4.5	SHU412	Airline Fleet Planning	2+0	3.0
SHU404	Airport Management	3+0	4.5	SHU416	Aircraft Maintenance Management	2+0	3.0
SHU411	Airport Terminal Management	3+0	4.5		*Area Elective Courses*	--	12.5
	Area Elective Courses	--	4.5		*Elective Courses*	--	3.0
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			30.0				30.0

Elective Courses

ALM255 (Ger)	German I	3+0	4.0
BEÖ155	Physical Education	2+0	2.0
ESTÜ101	Introduction to University Life	0+1	2.0
ESTÜ103	Ceramic Design Processes	2+1	3.0
ESTÜ104	Academic and Life Skills	2+1	3.0
ESTÜ106	Project Management	2+1	3.0
ESTÜ111	Volunteering Works	1+2	4.0
ESTÜ112	Cyber Security for Everyone	2+0	2.0
ESTÜ113	Design Thinking	3+0	3.0
ESTÜ114	Visual Thinking	3+0	3.0
ESTÜ115	Photographic Viewpoint	2+1	3.0
ESTÜ116	Computer Aided Design I	3+0	3.0
ESTÜ117	Computer Aided Design II	3+0	3.0
ESTÜ118	Visual Thinking with Concepts	3+0	3.0
ESTÜ119	Flute	3+1	3.0
ESTÜ120	Solfege	3+1	3.0
ESTÜ121	Piano	3+1	3.0
ESTÜ122	Guitar	3+1	3.0
ESTÜ123	Gender Equality in Work Life	2+0	3.0
ESTÜ125	Philosophy of Science	3+0	3.0
ESTÜ127	Diction	1+2	3.0
ESTÜ129	Turkish as a Foreign Language I	2+0	2.0
ESTÜ130	Turkish as a Foreign Language II	2+0	2.0
ESTÜ131	Argentine Tango Dance	0+2	2.0
ESTÜ132	History of Political Thought	3+0	3.0
ESTÜ133	Disability and Awareness	3+0	3.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ210	Culture of Museum	2+0	2.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ307	Children Rights and Family Education	2+0	2.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ESTÜ402	Coaching and Leadership	3+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
FRA255 (Fra)	French I	3+0	4.0
FRA256 (Fra)	French II	3+0	4.0
HYO120	Basics of Rescue and Fire Fighting	2+0	3.0
İSG401	Occupational Health and Safety I	2+0	2.0
İSG402	Occupational Health and Safety II	2+0	2.0
MÜZ151	Short History of Music	2+0	3.0
MÜZ155	Turkish Folk Music	2+0	2.0
MÜZ157	Traditional Turkish Art Music	2+0	2.0
REK242	Sports Aviation	1+2	3.0
RUS255 (Rus)	Russian I	3+0	4.0
RUS256 (Rus)	Russian II	3+0	4.0
SAĞ102	First Aid	2+0	2.5
SAN155	Hall Dances	0+2	2.0
SNT155	History of Art	2+0	2.0
SOS155	Folkdance	2+0	2.0
THU203	Community Services	0+2	3.0

Area Elective Courses

ESTÜ208	Scientific Research Methods	2+1	3.0
ESTÜ305	Sustainable Marketing	3+0	5.0
HUK153	Fundamentals Concepts of Law	2+0	3.0
HUK154	Commercial Law	2+0	3.0
HUK252	Labor Law	2+0	2.5
HYO432	Customer Relationship Management in Aviation	3+0	6.0
HYO434	Aviation Management Practices	0+6	10.0
İNG145 (Eng)	Business English I	2+0	2.0
İNG146 (Eng)	Business English II	2+0	2.0
İSN409	Organizational Communication	3+0	4.5
İŞL301	Human Resources Management	3+0	4.0
İŞL406	Strategic Management	3+0	4.5
MUH302	Analysis of Financial Reports	3+0	4.5
SHU205	Management Statistics	3+0	6.0
SHU221	Sustainability in Aviation	3+0	6.0
SHU232	Air Cargo	3+0	6.0
SHU234	Flight Planning and Monitoring	3+0	6.0
SHU240	Passenger Handling Services I	4+0	6.0
SHU246	Dangerous Goods	4+0	6.0
SHU301	Production Management in Service Companies	3+0	6.0
SHU303	Meteorology II	3+0	6.0
SHU304	Air Traffic Rules and Services	3+0	6.0
SHU305	Business Analytics	2+1	6.0
SHU308	Aviation Ethics	2+0	4.5
SHU310	Accounting Practices in Aviation Business	3+0	6.0
SHU311	Decision Making Techniques for Business	2+1	6.0
SHU341	Passenger Handling Services II	4+0	6.0
SHU343	Operation and Performance II	4+0	6.0
SHU345	Ground Handling II	4+0	6.0
SHU426	Transportation Policies	2+0	4.5
SHU428	Logistics Management	2+0	4.5
SHU432	Innovation Management	2+0	4.5
SHU436	Planning and Scheduling of Airline Operations	3+0	6.0
SHUSJ404	Internship I	0+2	2.5
SHUSJ406	Internship II	0+2	2.5
SHUSJ408	Internship III	0+2	2.5

DEPARTMENT OF AVIATION ADMINISTRATION (KKTC)

Department Head : Prof.Dr. Ayşe KÜÇÜK YILMAZ
Deputy Department Head :

DEPARTMENT OF FLIGHT TRAINING

Qualified pilots are trained for the civil aviation sector at international standards. It is the first and only department in our country that provides free pilot training at undergraduate level. At the end of the education carried out in accordance with the International Civil Aviation Organisation ICAO, European Aviation Standard and national requirements, students can graduate as pilots with CPL (A)/IR (A) licence in ATP (A) credit. Students who start the department take theoretical ground courses for the first year and a half (3 semesters). Afterwards, flight training is carried out with general purpose flight simulators and a fleet of SOCATA TB 20 TRINIDAD, CESSNA 172SP, DIAMOND DA-42, TECNAM aircraft.
Five students are admitted to the Department of Pilotage by central placement. The department offers a four-year undergraduate education after one year of English preparatory education. Students can do an optional internship for 20 working days.
Graduates work in Turkish Airlines A.O., private airline companies, air taxi companies and various flight schools.

Department Head : Dr. Lecturer Uğur ÖZDEMİR
Deputy Department Head : Dr. Lecturer Tamer SAVAŞ

PROGRAM

1.Period / 1.Phase

FİZ119	Aeronautical Physics I	3+0	3.0	FİZ120	Aeronautical Physics II	3+0	3.0
HUK147	Air Law I (International Agreements and Aerodromes)	2+0	2.5	İNG130 (Eng)	Aviation English II	6+0	4.0
İNG125 (Eng)	Aviation English I	6+0	4.0	PLT114	Aircraft General Knowledge I (Airframe and Systems)	3+0	4.0
MAT168	Mathematics	4+2	5.5	PLT118	Meteorology II	2+0	3.0
PLT113	Principles of Flight	4+0	3.5	PLT120	Aircraft General Knowledge II (Electrics)	1+0	1.0
PLT115	Safety Management System I	2+0	1.5	PLT122	Flight Operations	3+0	3.0
PLT117	Meteorology I	4+0	4.0	PLT124	Knowledge, Skills and Attitudes	4+0	5.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	PLT239	Aircraft General Knowledge III (Aircraft Engines)	2+0	3.0
TÜR125	Turkish Language I	2+0	2.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
	Elective Courses	--	2.0	TÜR126	Turkish Language II	2+0	2.0
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			30.0				30.0

1.Period / 3.Phase

HUK250	Air Law II (ATC Procedures and Flight Procedures)	2+0	3.0	PLT240	Avionics I	12+0	1.5
İNG235 (Eng)	Aviation English III	4+0	4.0	PLT242	Normal Procedures I	18+0	1.5
PLT247	General Navigation	5+0	5.0	PLT244	Emergency Procedures I	18+0	1.5
PLT251	Human Performance and Limitations	4+0	4.5	PLT260	Introduction to Aircraft Types I	24+0	3.0
PLT253	Air Traffic Communication I	2+0	4.5	PLT262	VFR Navigation and Flight Planning	18+0	3.0
PLT255	Aircraft General Knowledge IV (Flight Instrument)	3+0	4.0	PLT264	Standard Operation Procedures I	30+0	2.5
PLT257	Radio Navigation I (Basic Radio Aids)	4+0	5.0	PLT266	Safety Management System II	18+0	2.0
				PLT268	Practice in Flight I	0+15	3.5
				PLT270	Practice in Flight II	0+46	7.0
				PLT272	Practice in Flight III	0+24	4.5
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			30.0				30.0

2.Period / 2.Phase

PLT344	Mass and Balance	30+0	4.5	İNG329 (Eng)	Aviation English IV	60+0	3.0
PLT348	Performance	40+0	5.0	PLT336	Emergency Procedures II	15+0	1.5
PLT389	Radio Navigation II (Radar, RNAV)	24+0	5.5	PLT338	Normal Procedures II	15+0	1.5
				PLT342	Air Traffic Communication II	12+0	1.5
				PLT352	Basic Instrument	18+0	4.5
				PLT354	Radio Navigation III (FMS)	18+0	6.0
				PLT358	Introduction to Aircraft Types II	24+0	3.0
				PLT360	Standard Operation Procedures II	15+0	1.5

				PLT392	Flight Planning and Monitoring	52+0	7.5
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			15.0				30.0

3.Period / 1.Phase				**3.Period / 2.Phase**			
İNG331 (Eng)	Aviation English V	60+0	3.0	PLT372	Simulator Application II	0+14	4.0
PLT362	Practice in Flight IV	0+20	7.0	PLT374	Practice in Flight VI	0+22	6.0
PLT364	Safety Management System III	12+0	1.5	PLT388	Simulator Application III	0+8	2.0
PLT366	Radio Instrument and Radio Instrument Cross Country	30+0	4.5	PLT456	Night Flight	12+0	3.0
PLT368	Simulator Application I	0+15	5.5	SAĞ401	First Aid	18+0	3.0
PLT370	Practice in Flight V	0+16	6.0				
PLT387	Instrument Flight Charts	18+0	2.5				
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			30.0				18.0

3.Period / 3.Phase				**3.Period / 4.Phase**			
PLT422	Multi Crew Cooperation (MCC)	25+0	3.5	PLT464	Emergency Procedures III	12+0	1.5
PLT460	MCC Simulator Application	0+15	4.5	PLT470	Standard Operation Procedures III	18+0	3.0
PLT475	Avionics II	12+0	4.0	PLT472	Practice in Flight VII	0+11	2.0
				PLT482	Normal Procedures III	12+0	2.0
				PLT484	Introduction to Aircraft Types III	18+0	1.5
					Area Elective Courses	--	5.0
			-----				-----
			12.0				15.0

Elective Courses

BEÖ155	Physical Education	2+0	2.0
ESTÜ101	Introduction to University Life	0+1	2.0
ESTÜ103	Ceramic Design Processes	2+1	3.0
ESTÜ104	Academic and Life Skills	2+1	3.0
ESTÜ106	Project Management	2+1	3.0
ESTÜ111	Volunteering Works	1+2	4.0
ESTÜ112	Cyber Security for Everyone	2+0	2.0
ESTÜ113	Design Thinking	3+0	3.0
ESTÜ114	Visual Thinking	3+0	3.0
ESTÜ115	Photographic Viewpoint	2+1	3.0
ESTÜ116	Computer Aided Design I	3+0	3.0
ESTÜ117	Computer Aided Design II	3+0	3.0
ESTÜ118	Visual Thinking with Concepts	3+0	3.0
ESTÜ123	Gender Equality in Work Life	2+0	3.0
ESTÜ125	Philosophy of Science	3+0	3.0
ESTÜ127	Diction	1+2	3.0
ESTÜ129	Turkish as a Foreign Language I	2+0	2.0
ESTÜ130	Turkish as a Foreign Language II	2+0	2.0
ESTÜ131	Argentine Tango Dance	0+2	2.0
ESTÜ132	History of Political Thought	3+0	3.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ210	Culture of Museum	2+0	2.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ307	Children Rights and Family Education	2+0	2.0
ESTÜ401	Introduction to Professional Life	1+1	2.0

ESTÜ402	Coaching and Leadership	3+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
HYO409	Case Studies in Aviation Safety	2+0	3.0
MÜZ151	Short History of Music	2+0	3.0
MÜZ155	Turkish Folk Music	2+0	2.0
MÜZ157	Traditional Turkish Art Music	2+0	2.0
SAN155	Hall Dances	0+2	2.0
SNT155	History of Art	2+0	2.0
SOS155	Folkdance	2+0	2.0
THU203	Community Services	0+2	3.0

Area Elective Courses

ESTÜ305	Sustainable Marketing	3+0	5.0
PLT478	Flight Management System	28+0	5.0
PLT480	Situational Awareness in Pilots	2+0	5.0
PLTSJ402	Internship	0+2	5.0

DEPARTMENT OF AIRFRAME AND POWERPLANT MAINTENANCE

Qualified maintenance and repair personnel are trained in international standards for the aviation sector. Airframe and Powerplant Maintenance Department provides education in accordance with the requirements of European Union standards. In addition to theoretical courses, students receive practical training in aerodynamics, hydraulic systems, materials, CAD/CAM, computer laboratories, airframe, engine, bremze workshops and SHY-145 approved maintenance facilities within the Faculty. Sixty-five students are admitted to the Airframe and Powerplant Maintenance Department by central placement. The department provides four-year undergraduate education after one year of English preparatory education. The compulsory internship period is 40 working days. In addition to the compulsory internships, students can also do an optional internship for 20 working days as included in the course curriculum.
Graduates work in the technical departments of Turkish Technic, Turkish Air Force Air Supply Maintenance Centres, private airline companies and other enterprises operating in the field of aviation.

Department Head	: Prof.Dr. Önder ALTUNTAŞ
Deputy Department Head	: Lecturer Doctor Orkun TUNÇKAN
Deputy Department Head	: Dr. Lecturer Barış KARABAYRAK

PROGRAM

I.Semester				II.Semester			
FİZ105	Physics I	4+0	6.0	FİZ231	Waves and Optics	4+0	5.0
FİZ107	Physics Laboratory I	0+2	1.5	HYO116	Aviation Legislation	3+0	4.0
HYO115	Introduction to Civil Aviation	2+0	3.0	HYO225	Aircraft Maintenance Terminology I	3+0	4.0
İNG195 (Eng)	English for General Purposes I	4+0	3.0	İNG196 (Eng)	English for General Purposes II	4+0	3.0
MAT801	Mathematics I	4+0	4.0	MAT802	Mathematics II	4+0	4.0
MAT803	Linear Algebra	3+0	3.0	TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0
TRS131	Technical Drawing and Standards	4+0	4.0	TÜR126	Turkish Language II	2+0	2.0
TÜR125	Turkish Language I	2+0	2.0		*Elective Courses*	--	6.0
UGB105	Theory of Flight	3+0	3.5				
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			30.0				30.0

III.Semester				IV.Semester			
HYO122	Aircraft Materials I	2+1	3.0	HYO222	Electrical Fundamentals II	3+0	3.0
HYO221	Electrical Fundamentals I	3+0	3.0	HYO224	Electrical Fundamentals Laboratory II	0+2	1.5
HYO223	Electrical Fundamentals Laboratory I	0+2	1.5	İNG210 (Eng)	English Language Skills IV	3+0	3.0

HYO226	Aircraft Maintenance Terminology II	3+0	4.0	MEK218	Fluid Mechanics	3+0	3.0
İNG209 (Eng)	English Language Skills III	3+0	3.0	UGB202	Electronic Fundamentals I	2+1	3.5
MAT208	Differential Equations	3+0	3.5	UGB203	Aircraft Materials II	3+0	4.0
MEK112	Mechanis	3+0	3.0		*Area Elective Courses*	--	12.0
TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0				
TER203	Thermodynamics	4+0	4.0				
	Elective Courses	--	3.0				
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			30.0				30.0

V.Semester					**VI.Semester**		
HYO319	Aircraft Aerodynamics	3+1	4.0	HYO313	Electrical Machinery	3+0	3.0
HYO336	Aircraft Electrical Systems	4+0	4.0	MEK318	Flight Mechanics	3+0	3.0
UGB307	Electronic Fundamentals II	2+1	4.0	UGB320	Aircraft Hardware and Applications II	3+3	4.5
UGB315	Gas Turbine Engine Theory	3+0	4.0	UGB322	Gas Turbine Engine Systems I	4+0	4.5
UGB323	Aircraft Hardware and Applications I	3+3	6.0	UGB324	Aircraft Structure and Systems I	4+1	4.5
UGB325	Aircraft Electricity Workshop	2+2	5.0	UGB326	Avionic Systems	4+0	4.0
	Area Elective Courses	--	3.0	UGB328	Non-destructive Inspection Methods	0+3	2.0
					Area Elective Courses	--	4.5
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			30.0				30.0

VII.Semester					**VIII.Semester**		
HYO338	Electronic Instrument Systems	3+0	4.0	HYO420	Electromagnetic Environment	2+0	2.5
HYO419	Modern Avionic Systems	2+0	2.5	HYO436	Flight Controls	2+0	2.0
HYO422	Human Factors	3+0	3.0	UGB412	Aircraft Structure and Systems III	3+0	4.0
UGB407	Aircraft Structure and Systems II	3+0	4.0	UGB415	Applications of Powerplant-Airframe Maintenance	0+3	3.0
UGB409	Maintenance Practices	3+5	6.5	UGB420	Propeller	3+0	4.0
UGB411	Gas Turbine Engine Systems II	4+0	5.5	UGB426	Gas Turbine Engine Workshop	0+8	5.0
	Area Elective Courses	--	4.5	UGBSJ402	Internship I	0+2	5.0
					Area Elective Courses	--	4.5
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			30.0				30.0

Elective Courses

ALM255 (Ger)	German I	3+0	4.0
BEÖ155	Physical Education	2+0	2.0
ESTÜ101	Introduction to University Life	0+1	2.0
ESTÜ103	Ceramic Design Processes	2+1	3.0
ESTÜ104	Academic and Life Skills	2+1	3.0
ESTÜ106	Project Management	2+1	3.0
ESTÜ111	Volunteering Works	1+2	4.0
ESTÜ112	Cyber Security for Everyone	2+0	2.0
ESTÜ113	Design Thinking	3+0	3.0
ESTÜ114	Visual Thinking	3+0	3.0
ESTÜ115	Photographic Viewpoint	2+1	3.0
ESTÜ116	Computer Aided Design I	3+0	3.0

ESTÜ117	Computer Aided Design II	3+0	3.0
ESTÜ118	Visual Thinking with Concepts	3+0	3.0
ESTÜ123	Gender Equality in Work Life	2+0	3.0
ESTÜ125	Philosophy of Science	3+0	3.0
ESTÜ127	Diction	1+2	3.0
ESTÜ129	Turkish as a Foreign Language I	2+0	2.0
ESTÜ130	Turkish as a Foreign Language II	2+0	2.0
ESTÜ131	Argentine Tango Dance	0+2	2.0
ESTÜ132	History of Political Thought	3+0	3.0
ESTÜ133	Disability and Awareness	3+0	3.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ210	Culture of Museum	2+0	2.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ307	Children Rights and Family Education	2+0	2.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ESTÜ402	Coaching and Leadership	3+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
FRA255 (Fra)	French I	3+0	4.0
FRA256 (Fra)	French II	3+0	4.0
HYO113	Aviation History	2+0	2.0
HYO120	Basics of Rescue and Fire Fighting	2+0	3.0
HYO334	Sustainable Aviation Technologies	2+0	2.0
İLT307	Communication	3+0	3.0
İSG401	Occupational Health and Safety I	2+0	2.0
İSG402	Occupational Health and Safety II	2+0	2.0
MÜZ151	Short History of Music	2+0	3.0
MÜZ155	Turkish Folk Music	2+0	2.0
MÜZ157	Traditional Turkish Art Music	2+0	2.0
REK242	Sports Aviation	1+2	3.0
SAĞ102	First Aid	2+0	2.5
SAN155	Hall Dances	0+2	2.0
SNT155	History of Art	2+0	2.0
SOS155	Folkdance	2+0	2.0
SOS312	Organizational Behavior	3+0	4.5
THU203	Community Services	0+2	3.0
TKY304 (Eng)	Quality Assurance Systems	2+0	3.0

Area Elective Courses

ESTÜ305	Sustainable Marketing	3+0	5.0
ESTÜ405	Computer Programming	3+0	5.0
HYO105	Air Transportation Management	3+0	3.0
HYO114	Ergonomics in Aviation	4+0	5.0
HYO304	Aircraft Manufacturing Technologies	3+0	4.5
HYO315	Electrical Machinery Laboratory	0+2	3.0
HYO406	Helicopter Theory and Systems	3+0	4.5
HYO409	Case Studies in Aviation Safety	2+0	3.0
HYO411	Vibration Analysis in Aircrafts	2+1	3.0
HYO413 (Eng)	Aircraft Systems Design	2+2	4.5
HYO415	Academic and Technological Progresses in Aviation	3+0	4.5
HYO416	Reciprocating Engine Theory, Systems and Maintenance	3+0	3.0
HYO421	Automatic Flight Systems	3+0	3.0
HYO425	Safety Management System	2+0	3.0
HYO428	Aviation Meteorology	3+0	3.0
İNG145 (Eng)	Business English I	2+0	2.0
İNG146 (Eng)	Business English II	2+0	2.0
İNG309 (Eng)	English Language Skills V	3+0	3.0
İNG310 (Eng)	English Language Skills VI	3+0	3.0
SHU424	Aircraft Maintenance and Reliability Management	3+0	3.0
UGB204	Aircraft Powerplants (TEI/TUSAS)	5+9	12.0
UGB208	Aircraft Powerplants (HUBF)	4+4	12.0
UGB417	Magnetic Particle and Ultrasonic Inspection	3+0	4.5
UGB422	Environmental Impact Assessment in Aviation	3+0	4.5
UGB424	Reciprocating Engines	1+3	4.5
UGB425	Aircraft Maintenance Practices M11	0+5	4.5

UGB428	Aircraft Maintenance Practices M7	0+4	4.5
UGB430	Aircraft Maintenance Practices M17	0+4	3.0
UGB432	Vocational Training in Workplace	0+8	15.0
UGBSJ404	Internship II	0+2	2.5

DEPARTMENT OF AIRFRAME AND POWERPLANT MAINTENANCE (KKTC NATIONALITY)

Department Head : Prof.Dr. Önder ALTUNTAŞ
Deputy Department Head :

COURSE CONTENTS

ALM255 (Ger) German I 3+0 4.0
Greeting Friends; Asking for Someone's Health; Asking for Directions; Asking Where People are From; Making Requests; Asking for Prices; asking for Prices; Asking for Different Kinds of Food and Drink; Formal Sentences Used in Restaurants and Formal Places; Asking For and Telling People about Preferences; Likes and Dislikes; Asking for the Amount of Something and Telling the Amount of Something: Structures Used in Telephone Conversations; Using Appropriate Grammar Forms for the Given Situations.

ANT452 First Aid 1+2 4.0
Functioning Of The Human Metabolism And Systems: Disruptions occurring in the system, Things to do in the event of illness, Things to do in case of an accident or injury, First Aid Principles: The importance of first aid, Personal responsibilities related to first aid, Legal responsibilities related to first aid, Priorities in first aid, Awareness on first aid, Equipment used in first aid, First aid and time, Lifesaving, Human responsibilities in first aid, Proper first aid intervention, Preparation for expert team after first aid.

ARK108 Archaeology 2+0 2.0
Definition; Social, cultural and historical role of archaeology; Domain of Archaeology; Age of the World; Production of the Earliest Stone Tools; Scientific Disciplines Revenant to Archaeological Studies; Brief History of Archaeological Excavations; Historical Classification and History of Anatolia: Prehistoric Ages, Historical Ages, Archaeological sites of Anatolia, Archaeological excavations in Anatolia; Archaeological Activities of University.

ARY205 Research Methods and Presentation Techniques 3+0 3.0
Research Methods and Presentation Techniques: Definition, Variations and Phases of Research; Definition of Data and Data Collection Techniques; Report Writing Techniques; Writing Styles; Academic Ethics in Citations; Preparation for Presentation and Methods of Presentation Planning; Presentation and Interaction; Summarizing and Feedback

BEÖ155 Physical Education 2+0 2.0
Definition of Physical Education and Sports; Aims, Disadvantages of Inactive Life; Various Activities for Physical Education; Recreation; Human Physiology; First Aid; Sports Branches: Definition, Rules and Application; Keep Fit Programs.

BEÖ176 Trekking 1+2 4.0
The Definition of Trekking; The Essentials which Must Be Done Before Trekking, At The Time of Trekking, After Trekking; Trekking Equipments; Backpack and Essential Equipments in Backpack; The Characteristics of Clothes; The Characteristics of Shoes; Sleeping Bags: Their kinds and characteristics; The Characteristics of Mats; Tents: Their kinds and characteristics; The Methods of Direction Determination: Scrip, GPS, Pole star, Sun, Watch; The Problems According to Weather Conditions in Trekking.

BİL200 (Eng) Computer Programming 2+2 6.0
Procedural and Functional Programming Concepts; C Programming Environment and Compilers; Basic C Commands and Variables; Algorithm Flow; Logic Expressions; Functions; Arrays and Pointers; Function I/O Interfaces; Files; Memory Allocation and Data Structures; Advanced Topics; Procedural and Functional Programming Concepts; C Programming Environment and Compilers; Basic C Commands and Variables; Algorithm Flow; Logic Expressions; Functions; Arrays and Pointers; Function I/O Interfaces; Files; Memory Allocation and Data Structures; Advanced Topics.

BİL409 (Eng) Decision Support Systems 3+0 6.0

Rational Decision Making and Appropriate Data Support; Components of Decision Support Systems (DSS): Data, Information, Databases, Dbms, Knowledgebase, Data Warehouses, Rulebase/Modelbase; Expert Systems Mechanism and Certainty Factors, System Dynamics and Simulation, Group DSS, Executive Information Systems, User-Interface Components; Designing, Implementation and Evaluation of DSS.

BİM301 Algorithm and Programming 2+2 4.5

Basic Concepts: Algorithm, Programming; Installing and Configuring Visual Studio; Control Elements: Textbox, Labels, Command Button, Checkbox, Scroll-Bars, Timer Control, Frame Control, Option Button, Picture-Box, Combo-Box, Drive List Box, Directory List Box, File List Box, Common Dialogs, Date-Time-Picker; Data Types: Char, Integer, String, Float; Text Events: Importing Text, Click, Double-Click, Got-Focus, Change, On Mouse Over; Making Functions; Debugging.

EEM415 (Eng) Engineering Design and Research 2+0 3.0

Engineering Design Process: Elements of the design process; Project Selection and Needs Identification: Engineering design projects, Project feasibility and selection criteria, Needs identification, The research survey, Needs and objectives statements; The Requirements Specification: The requirements setting process, Engineering requirements; Concept Generation and Evaluation: Creativity; Teams and Teamwork: Definition of team, Models of team development, Characteristics of real teams; Project Management: Network diagrams, Gantt charts, Cost estimation; Oral Presentations: Evaluation criterias of presentations.

EEM493 (Eng) Digital Control Systems 3+0 5.0

Sampling and Reconstruction; Digital-Analog and Analog-Digital Conversions; Data Sampling Systems; Effect of Sampling Frequency on System Response and Choice of Sampling Frequency; Transient Response of Discrete Time Systems; Steady-State Response of Discrete Time Systems; Frequency Response of Discrete Time Systems; Multi-Rate Sampled Data Systems; Quantization Errors; Pole Placement; Observers; Performance Criteria; Optimal Control; Design of Dynamic Controllers.

EİST201 (Eng) Engineering Statistics 3+0 4.0

Tabular and Graphical Representation of Data: Bar, Pie, Dot, Stem-Leaf Plots, Histogram; Central Tendency and Variability Measures; Box Plot; Probability, Random Variable; Probability Distribution, Expected Value; Discrete Random Variables, Bernoulli, Binomial and Poisson Distributions; Continuous Random Variables, Normal Distribution and its Applications; Sampling Distributions; Confidence Intervals for Population Mean and Proportion; Hypothesis Testing: Basic Notions, Tests for population Mean and Proportions; Simple Linear Regression: Method of least squares, Testing significance of the model; Correlation Coefficient.

EKİM105 General Chemistry 4+0 6.0
(Eng)

Introduction: Matter and Measurement; Atoms, Molecules and Ions; Chemical Reactions and Reaction Stoichiometry; Reactions in Aqueous Solutions; Electronic Structure of Atoms; Periodic Properties of the Elements; Basic Concepts of Chemical Bonding; Gases, Liquids, Intermolecular Forces and Solids; Properties of Solutions; Chemical Kinetics; Chemical Equilibrium and Acid-Base Equilibria; Thermochemistry and Chemical Thermodynamics; Electrochemistry.

EMAT111 Calculus I 4+2 7.5
(Eng)

Basic Concepts: Real numbers and the real axis, Cartesian coordinates in the plane, Complex numbers, Graphs of quadratic equations, Functions; Limit and Continuity: Limits of functions, Continuity; Derivative: Tangent lines and their slopes, Concept of derivative, Differentiation Rules; Inverse, Exponential and Logarithmic Functions; Applications of Derivative: Indeterminate forms, Extremum values, Sketching the graph of a function; Integral: Definite integral and its properties, Indefinite integral; Integration Techniques: Change of variables, integration by parts, Integrals of rational functions, Improper integrals.

EMAT112 Calculus II 4+2 7.5
(Eng)

Applications of Integration: Volumes of solids of revolution, Arc length and surface area, Mass, Moment and Centre of mass; Polar Coordinates and Polar Curves; Sequences and Series: Sequences and convergence, Infinite series, Power series, Taylor and Maclaurin series; Vectors; Functions of Several Variables: Partial derivatives, Gradients and directional derivatives, Applications of partial derivatives; Multiple Integration and Applications; Vector Calculus.

EMAT211 Differential Equation 3+1 4.5
(Eng)

Introduction to Differential Equations; Classification of Differential Equations, Concept of Solution and Direction Fields; First Order Differential Equations: Exact differential equations and integrating factors, Separable and homogeneous

equations, Linear equations; Applications of First Order Equations; Higher Order Linear Differential Equations: Methods of undetermined coefficients and variation of parameters; Applications of Second Order Equations; Laplace Transforms and Solutions of Differential Equations by Laplace Transforms; Introduction to Systems of Linear Differential Equations..

EMAT223 (Eng) Linear Algebra and Numerical Methods 2+2 4.5

Matrices and Systems of Linear Equations: Matrix concept, Matrix algebra, Systems of linear equations and solutions with matrices; Determinant: Determinants and its properties, Inverse of a matrix, Applications of Determinants; Vector Spaces: Vectors in the plane and in space, Vector space and subspaces, Linear independence and basis; Linear Transformations and Their Matrices; Solutions of Nonlinear Equations: Bisection, Newton-Raphson methods; Curve Fitting: Least squares and Interpolation methods; Numerical Integration: Trapezoid and Simpson's rule; Numerical Solutions of Ordinary Differential Equations: Runge-Kutta, Euler and Taylor expansion methods.

ENM203 (Eng) Linear Programming 2+2 5.5

Methodology of Operations Research; Assumptions of Linear Programming; Modeling with Linear Programming; Graphical Solution; Simplex Algorithm; Big M Method; Two-Phase Simplex Algorithm; Revised Simplex Algorithm; Duality: Primal- dual relationship, Dual simplex algorithm; Sensitivity Analysis; Solution of Linear Decision Models with Computer Software.

ENM304 (Eng) Investment Planning and Analysis 4+0 6.0

Investment Concepts in Types of investments; Preparation of investment projects; Evaluation of Investment Projects: Static, Dynamic and multi-criteria evaluation methods; Feasibility; Cost-Benefit Analysis; Optimum Investment Planning; Investments of Establishments and Individuals; Measurement of risk and gain; Stock and money exchange; Investment evaluation process and techniques; Comparison of investment alternatives; Portfolio Theory and its applications.

ENM306 (Eng) Stochastic Models 3+0 4.5

Definition of Stochastic Processes; Markov Chain; Chapman-Kolmogorov Equations; Transition Matrices; Classification of States of Markov Chain; Queuing Theory; Exponential Distribution; Birth and Death Process; Queuing Models Involving Exponential Distribution; Queuing Models Involving Nonexponential Distribution; Analytical Solution Methods of Queuing Models; Priority Discipline Queuing Models; Queuing Networks; Queuing Systems.

ENM419 (Eng) Sustainable Systems Engineering 3+0 5.0

Definition, History and Basic Concepts of Sustainability; Life Cycle Assessment; Carbon Footprinting; Carbon Regulations and Carbon Pricing; Waste Management and Waste Regulations; Green Inventory Management and Facility Location; Closed-Loop Supply Chains; Corporate Social Responsibility; Responsible Sourcing, Case Studies Related to Sustainability Initiatives in Industries.

ENM442 (Eng) Decision Analysis 3+0 4.5

Decision Theory; Classification of Decision Problems; Decision Environments: Decision-making under uncertainty, Decision-making under risk; Utility Theory: Axioms of utility theory; Decision Trees: Use of decision tress under certainty, uncertainty and risk; Complete and Incomplete Information: Expected value of information; Decision-making in Multi-Criteria Environment; Multi-Objective Optimization Problems; Goal Programming.

ESTÜ101 Introduction to University Life 0+1 2.0

Orientation: Concept of university and understanding of university, General information about Eskisehir, Education and student discipline regulations, Ethics at the university, National and international exchange programs, General services of university, Faculty/department orientations; Self-improvement seminars: Research projects, Entrepreneurship, Respect to diversity, Social gender, Leisure philosophy, Zero waste and sustainability, Career planning and mind mapping, Scientific thinking and observation, Barrier - free living, Carbon footprint, Start-up practices, Project based internship.

ESTÜ102 (Eng) Negotiation Techniques Class 2+0 3.0

Basic Concepts: Communication, Communication Process, Individual Communication, Corporate Communication, Communication Conflicts, Communication Tools, Communication Problems, Negotiation Process, Definition of Negotiation, Stages of Negotiation, Negotiation Process, Negotiation Problems; Conflict Management: Communication and Conflict, Types of Conflict, Conflict Management; Crisis Management: Crisis in Communication, Crisis Assessment, Types of Crisis, Crisis Management Plan, Examples of Successful Crisis Management; Negotiation, Social Media and Communication, Negotiation and Social Media, Communication Techniques in Social Media; Effective Communication and Negotiation

ESTÜ103 Ceramic Design Processes 2+1 3.0

Ceramic Design: Definition, Uses, Functions; Principles of Ceramic Design: Line, Color, Texture, Form, Scale, Direction; Analyzing of Design Methods Related to Ceramic; Prepare a Draft Study on the Subject; Prepare a Project With Designs; Determination and Preparation of Ceramic Sludge Types Used in Forming; Defined Production Methods and Knowledge Series Production Methods; Drying; Bisque Firing; Glazing and Glazed Firing.

ESTÜ104 Academic and Life Skills 2+1 3.0

Self-Awareness: Development of self, Early adulthood and self-concept; Values and Goals: Goal setting, Concreate goals and priorities. Considering resources; Effective time Management: Management and planning Definition of Stress; Psychological and Physiological Aspects of Stress; Emotions, Cognitive processes; Coping with Stress. Definition of Stress; Psychological and Physiological Aspects of Stress; Emotions, Cognitive processes; Coping with Stress.

ESTÜ106 Project Management 2+1 3.0

Project Management Fundamentals: Definition of project; Human Resources and Communication Management; Quality Management in Projects; Procurement Planning in Projects; Stakeholders Management; Gantt Chart; Causality Relationship Between Activities; SWOT Analysis; Planning of Risk Management in Projects; Project Compression Analysis and Cost Management; Project Resources and Resource Scheduling; Project Monitoring with Earned Value Management; Control and Progress in Line with the Objective of the Projects; R&D Sample Projects; Project Practices.

ESTÜ111 Volunteering Works 1+2 4.0

Management and Organization Concepts; The Concept of Volunteering and Volunteer Management; Fundamental Volunteering Areas (Disaster and Emergency, Environment, Education and Culture, Sports, Health and Social Services etc.); Project Development Related to Volunteer Work and Participation in Volunteer Work in the Field; Ethics, Moral, Religious, Traditional Values and Principles in Volunteer Work; Participation in Voluntary Work in Public Institutions, Local Governments and Non Government Organizations (NGOs); Risk Groups in Society and Volunteering; Immigrants and Volunteering.

ESTÜ112 Cyber Security for Everyone 2+0 2.0

Basic Concepts: Computer components and definitions; Software: System software, Application software; Computer Networks: Concept of Network and Internet; Malware and Network Attacks: Viruses, Attacks; Computer and Access Security: Password selection, File sharing, Backup; Internet security: SSL, Fake websites; Security on Social Platforms: Fake news and people; Security Analysis: System analysis, Network traffic analysis; System and Network Security: Network security, System security, Mobile device security; Information Security Management System: ISO 27001; Personal Data Protection Law: PDLP procedures; Information Technology Law: Information crimes and punishments.

ESTÜ113 Design Thinking 3+0 3.0

Design Thinking Concepts: Design thinking, Human-centered design, User research, Problem identification, Problem definition, Empathy, Idea development, Creativity, Idea elimination and selection, Low-precision prototyping, High-precision prototyping, User tests, Usage tests, Usability, Revision and iteration, Visual thinking, User-centered design, Design processes and innovation, applications, Presentation techniques.

ESTÜ114 Visual Thinking 3+0 3.0

Visual Thinking Concepts: Concepts of abstract and concrete, Point, Line, Surface, Volume, Composition, Repetition, Rhythm, Hierarchy, Harmony, Contrast, Measuring and scale; Presentation Techniques: Sketch, Color, Tone, Order; Visual Perception and Gestalt Theory: Figure-ground relationship, Proximity principle, Similarity principle, Completion principle, Continuity principle, Simplicity principle, Depth perception, Psychological effect; Visual Communication: Image reading, Image interpretation, Pictogram, Ideogram, Logotype.

ESTÜ115 Photographic Viewpoint 2+1 3.0

Course Introduction: Project work; Research and Discussion of the Project Subject: Evaluation of research results, Successful examples from photography and graphic art, Examination of examples of selected works, Determination of application subjects, Discussion of application possibilities, Basic design elements and principles in photography and graphic design process, Trial shooting and evaluation; Light and Lighting: Color and functions of color; Photography Techniques: Visual editing, Reading photographs; Methods and Techniques in Applied Photography: Technical evaluation of photographs and development stages of the photographs; Basic Rules of Composition in Photography: Perspective, Balance, Proportion, Texture, Shape, Perspective, Lens selection and application; Shooting Process and Graphic Interventions on Photographs; Photographic View Methods: Evaluation of shooting results; Preparation of Portfolio: Portfolio evaluation, Presentation methods and techniques, Exhibition preparation methods.

ESTÜ116 Computer Aided Design I 3+0 3.0

Concepts of Computer Aided Design: Introducing to fusion360, Introducing interface, Surface modeling, Solid modeling; Basic Commands: Sketching, Editing, Constraints, Timeline, Parameter modification, Technical drawing; Construction Commands: Create, Inspect, Insert; Surface Modeling Tools: Creating and editing surfaces; Assembly: Adjusting, Arranging, Joint, Additional options; Freeform Modeling: T-Splines, Surface creation, Surface editing, Symmetry and tools; Visualization: Assigning material, Scene settings, Rendering methods; Various Applications.

ESTÜ117 Computer Aided Design II 3+0 3.0

Concepts of Computer Aided Design: Surface and solid modeling, Differences between surface and solid modeling, Surface creation, Arrangement; Sheet Metal Processing: Sheet metal processing creation and editing; Advanced Modeling Tools: Product part modeling; Introduction to Simulation: FEA simulation, Analyzing and interpreting simulation results; Generative Design: Generative design concept, Generative design tools, Simulating and evaluating generative design results; Manufacturing Tools: 3D printing, Introduction to CAM, Introduction to electronics.

ESTÜ118 Visual Thinking with Concepts 3+0 3.0

Visual Thinking with Concepts: Perception as ability to know, Change of senses; Seeing and time, Seeing depth, Understanding shapes; Visual Perception: Abstraction; Static and dynamic concepts of abstraction, Context, Comparison of perception, Similarities; Image and thought: Mental images; Particular and spiritual images, Abstraction of the image, Perceived quantities, Geometry and meaning; Writing and speech: Words as images, Intuition and cognition, Perception of words, Verbal concepts and pictorial concepts; Vision in Education: Images and art, Looking and understanding, Visual education tools.

ESTÜ119 Flute 3+1 3.0

Breath Work: Breathing exercises the diaphragm and correctly use various activation studies; Technical Studies: Stance, Grip, Position, Fingering and embouchure work; Learning the Notes on the Flute: Learning the notes on the flute with octaves, The octave positions of the lip according to the study, A long blowing sound with learned notes; Technical Development; Proper Studies to be Determined by İnstructor According to Student's Performance on the Scales: With learned notes, Sharp, Flat, Major and Minor, According to the ranking exercises scales; Flute Repertoire in the Context of Period, Style and İnterpretation: Selected works according to student performance from periods in music history.

ESTÜ120 Solfege 3+1 3.0

Octave of the Tone to be Specified According to The Groups; The Signs Used in Writing Music; Signs Spelling Rules; Staff and Additional Lines; Arrays and Intervals; Major and Minor Scales, İnterests, and Varieties: Natural, Harmonic, Melodic; Measure and Time; The Terms of the Transaction; Marks of Dynamics; The Expression of Terms; According to Student Level and Profile to be Created Reading Pieces by the Teacher; Reading with Piano Accompaniment; Rhythmic Perception and Rhythmic Reading, and Only Two Voice Dictation Skills; to be Able to Read on Different Keys, to be Able to Read Complex Rhythmic Pieces with Piano Accompaniment Two, Three, Four-Voices Dictation Skills; Ability to Read Ceremonial Solfege, Atonal Solfege.

ESTÜ121 Piano 3+1 3.0

Starting Position on the Piano: By taking into consideration to correct position of hands, Arms, Fingers, And feet; Technical Development Exercises: Etudes, Scales, Chords and arpeggios studies; Techniques of Touching Piano Keyboard, Staccato, Legato, Non Legato; Information About Dynamics; Working with Learning Notes and Octaves: One hand and double hand into small pieces-small parts; Style and in the Context of Your Comment Piano Repertoire: Baroque, Classical, Romantic, And modern Turkish composers will be given according to the performance of student works.

ESTÜ122 Guitar 3+1 3.0

Theoretical studies: Writings symbols used in music; Basic information About Solfege; The Structural Characteristics of the Guitar; Guitar History; İntroduction to Guitar: Learning the notes on guitar; Learning the Names of the Right Hand and The Left Hand; Technical Exercises on the Guitar; Scales; Arpeggios; Slurs; Barres; Repertoire: Proper studies to be determined by instructor according to student's performance on the scales; To Recognition of the Different Disciplines During The Phase of Prima Vista; To Make Conscious About Playing Together; Improving to Stage Performance.

ESTÜ123 Gender Equality in Work Life 2+0 3.0

Understanding Gender; Historical and Social Foundations of Gender Equality; Gender and Education; Gender and STEM; Status of Women's Employment in Turkey: Decent work conditions and gender equality, Status of women's employment in the world; Production and Reproduction of Feminine and Masculine Identities in Work Life; Importance of Gender Equality in Work Life; International Norms and Standards on Gender Equality in Work Life; Legal Framework and National Policies on Women's Employment in Turkey; Gender and Leadership; Project Presentations.

ESTÜ125 Philosophy of Science 3+0 3.0

Philosophy and Science: Basic concepts of philosophy of science, Knowledge, Science, Scientific law; Ontology and Epistemology; Science and Philosophy in the Ancient and Medieval Times: Socrates and the theory of knowledge; Modernity and Enlightenment, Positive sciences; The Differences Between Natural Sciences and Social Sciences; Positivist epistemology: A. Comte; Interpretivist Epistemology; Critical epistemology; Feminist and post-modern epistemology; Debates in Philosophy of Science (1): Verification and falsification, Karl Popper and Thomas Kuhn; Debates in Philosophy of Science (2): Imre Lakatos and Paul Feyerabend; A general Assessment of the Course.

ESTÜ127 Diction 1+2 3.0

Basic Elements of Diction; Pronunciation defects; Breathing Development and Diaphragm Exercises; Pronunciation Disorders: Rules about vowels; Correct Pronunciation of Words; Spelling and Pronunciation of Confused Words; Stress Exercises; Intonation Exercises; Pronunciation Exercises; Things to Do for Effective Speaking; Prepared Speech; Unprepared Speech; Vocalization Applications.

ESTÜ129 Turkish as a Foreign Language I 2+0 2.0

Acquaintance: Greeting, Asking about the condition of someone, Saying goodbye; Alphabet: Letters in the alphabet; Numbers: Numbers from 1 to 20, Phone numbers; Introducing Oneself: Country, nationality and language names; Kinship Terms: Using words such as mother, father, sister and brother; Classroom Language: Objects in the classroom, Commands used for classroom communication; Hours: Numbers from 20 to 100, Telling the time; Routine Activities: Talking about daily activities; Ownership: Talking about owned objects; Question Words: Who, Where, When, How; Professions: Telling one’s own profession and telling someone’s profession; Descriptions: Properties of the objects in the close environment, Synonyms and antonyms.

ESTÜ130 Turkish as a Foreign Language II 2+0 2.0

Human Body: The organs that make up the human body, Describing the external appearance of people; Clothes: Names and colours of the clothes; Foods: Names of foods and drinks, Ordering a meal; The Environment That We Live In: Parts of the house, Household items; Countries: Saying the population of a country and its neighbors; Days, Months and Seasons: Telling the date of birth; Weather: Asking and telling the weather; Hobbies: The statements that express habits and competence; Shopping: Asking and telling the price of a product; Invitations and Suggestions: Making an offer or rejecting an offer; Travelling: Talking about travelling experiences; Daily Life: Asking for something that is needed.

ESTÜ131 Argentine Tango Dance 0+2 2.0

Introduction to the Course; General Information About Argentine Tango: History of Argentine Tango, Argentine Tango styles, Argentine Tango music; Fundamentals of Tango Salone Dance; Walking Exercises: Training-Dance grip, Individual-couple walking, Steady-paced straight walking with music, Stopping, Changing steps; Walking Exercises: Forward, Backward, Right, Left, Face to face-cross, Straight-circular, Rock steps; Walking Exercises: Improvised walking with music in various rhythms and tempos; Basic Combinations; Forward Ocho; Back Ocho; Parada; Sandwich; Ocho Cortado; Media Luna; Tango Events: Milonga culture; Improvisational application of all learned figures.

ESTÜ132 History of Political Thought 3+0 3.0

Society, Thought and Fiction: Primitive societies and the beginning of thought, The emergence of political fiction; From Organic Evolution to Social-Cultural Evolution: Man's life in the stone ages, Primitive society's way of thinking; Transition from Primitive Community to Civilized Society and Spread of Civilization: Birth of the first civilized society and social division of labor, Spread of civilizations; Political Thinking in Pre-Greek Civilizations: Political Thought in Mesopotamia, Egypt and Anatolia; Political Thinking in Contemporary Greek Civilizations: Political Thinking in Persia, India, China, and the Hebrews; Society and political thought in ancient Greece; Society and Political Thinking in Rome: Economic and socio-political developments in Rome, political thinking in Rome; Society and Political Thinking in the Medieval Latin World: Economic, social and political developments in the Latin world; political thought in the Latin world; Society and Political Thinking in the Modern Age: Economic, social and political developments in Western societies, transition from feudal order to capitalist system; Political Thinking in Modern Western Societies: Religious Reform, Absolute Monarchy and Enlightenment.

ESTÜ133 Disability and Awareness 3+0 3.0

Basic Concepts and Definitions in Special Education, History of Special Education Legal Basis of Special Education, Disabled Individuals and Their Characteristics, Disability and Discrimination, Accessibility is a Human Right! Universal Design, Disability Friendly Approach, Social and Adaptation Skills of Individuals with Disabilities, Business and Vocational Skills and Employment in Individuals with Disabilities, Social Contact in Individuals with Disabilities.

ESTÜ201 Turkish Sign Language 3+0 3.0

Deaf Society and Culture: Concept of Hearing Impaired and Deaf. Discrimination against deaf society (Audism). What is sign language? The place of it in deaf culture and social life. Sign language interpretation.1st Grade Turkish Sign Language

Education: Foundational concepts and terms. Sign language basic sentence structures and patterns, dialogue, sign language usage space and fluency, fingerspelling, use of non-monual expressions (gestures, mimicking, facial expressions, head and body positions), hand shapes and use, colours, numbers, syntax, directional verbs, self-introduction, comprehension.

ESTÜ203 Introduction to Sociology 3+0 3.0

Science, Society, Sociology: The comparison of physical science and social science, The Birth of Sociology, Theoretical Perspectives in Sociology: Development of sociology, classical and modern sociology; Social Change and Globalization: Theories of social change, Modernism and post-modernism, Culture and Society: Culture of sociology, Gender Equality, The socialization of gender; Work and Economy; Fordism, post-fordism, work and occupations, Political Sociology: İdeology; Sociology of Family: Family from sociological perspectives; Religion and Society; Law, Crime and Society: social deviance, Urbanization and Environment: Risk society.

ESTÜ204 Effective Reading and Writing Skills 3+0 4.0

The Activities Which Contribute The Reading And Writing Skills: Literary texts, Cultural and art activities; Reading Skill; Skill of Writing Efficiently: Widen one's viewpoint; Improvement of Creating Writing: To write originally impression of literary texts or activities; The Texts with Correct Expression: Spelling rules, Punctuation marks, Creating passage, Creating text, Vocabulary, The usage of dictionary; Expression Styles: Narrative expression, Descriptive expression, Explanatory expression, Definitive expression, Sampled expression, Substantive expression, Comparative expression; Types of Writing: Official writing, Fictional writing, Essays.

ESTÜ206 Financial Literacy 3+0 3.0

Key Issues in Financial Literacy: Money, Credit, Deposit, Interest; Conscious Use of Cards: Debit card, Credit card; Inflation and Its Effects on Our Lives; Personal Financial Planning: Spending, Saving, Investment, Budget; Investment Decisions and Investment Plans; Foreign Currencies and Foreign Currency Markets: Dollar, Euro, Pound Sterling; Precious Metals: Gold, Silver; Bonds, Bills and mutual funds; Stocks and Exchange Terminology; Private Pension System: Asset distribution, Participants' rights; Cryptocurrencies: Blockchain, Decentralized finance, NFT, Metaverse.

ESTÜ207 General Psychology 2+0 3.0

History of Psychology; Research Methods in Psychology: Descriptive methods, Correlation, Experiment; Learning Theories: Classical conditioning, Operant conditioning; Motives and Emotions; Perception and Sensation; Memory: Sensory memory, Short-term memory, Long-term memory; Social Psychology: Social influence, Conformity, Acceptance, Obedience, Attitude, Cognitive dissonance, Social categorization; Environmental Psychology; Developmental Psychology: Lifelong development, Developmental processes; Personality: Psychodynamic, Behavioral and social cognitive; Personality tests; Psychological Disorders: Anxiety and mood disorders, Eating disorders, Personality disorders.

ESTÜ208 Scientific Research Methods 2+1 3.0

Science: Scientific method, Scientific research, Types of research; Scientific Research Process; Problem, Purpose, Importance, Assumptions, Limitations, Definitions; Related Literature Review: Research databases, Web 2.0 tools for research; Research Methods: Quantitative, Qualitative, Blended methods, Design research; Scientific Research Process: Sample, Data resources and data collection methods, Data analysis and interpretation, Findings, Discussion and implications; Reporting of scientific research; Ethics of Research; Examining Research Articles.

ESTÜ210 Culture of Museum 2+0 2.0

Definition of Museum, its origin and Types of Museums, the story of Archaeological Excavations in Turkey, Ottoman Museology and Antiquities Laws; The Establishment of Museology in Turkey and the works of Osman Hamdi Bey; The importance of Archeology and Archaeological Museums in Turkey; Ruins (Open-Air Museums) in Turkey; Turkish and Islamic Arts Museums in Turkey, Methods of preserving and exhibiting works in museums; Ethnography Museums, methods of preservation of artifacts; Painting and Sculpture Museums, methods of preserving and exhibiting works; Museums of Urban History; Modern Museums; General evaluation of the course

ESTÜ301 Science Communication 2+0 3.0

Science Culture And Science Communication; Actors in Science Communication Process; Open Access: Open access initiatives, Open access platforms; Role of Information Centers in Science Communication Process; Science and Technology Policies: Science-technology-invention-innovation, Science Policies and Science Communication; Academic Texts; Science Journalism: The development of science journalism, The effects of science journalism on the development of science, Writer-reader-scientist interaction ; Ethics In Science Communication; Project Presentations.

ESTÜ305 Sustainable Marketing 3+0 5.0

The Concept of Sustainability; Sustainability and Environment; Marketing and Sustainable Marketing: Sustainability and marketing relationship, Historical process in sustainable marketing, Basic principles and framework of sustainable marketing; Sustainable Marketing Environment: Sustainability and sociocultural environment, Sustainability and economic environment, Sustainability and competitive environment, Sustainability and technological environment, Sustainability and

legal environment, Sustainability and natural environment; Sustainable Marketing Mix: Sustainable products and services, Sustainable pricing, Sustainable distribution, Sustainable promotion.

ESTÜ307 Children Rights and Family Education 2+0 2.0

Children, Rights and Legal Arrangements Related to Children, Children's Rights and Laws for the Protection of Rights, Children's Rights Convention, Children in Need of Protection, Child Family Relationship I, Child Family Relationship II, Child Neglect and Abuse, Child and Crime Relationship, Family Education and Principles, Family Education and Family Communication, Family Problems and Services for Children, Turkish Family Structure and Family Services.

ESTÜ401 Introduction to Professional Life 1+1 2.0

Information about PL, What is needed for PL?, Sector Meetings, 21. Century Competencies: Improving self-awareness, Basic communication skills, Problem solving, Decision making and leadership, Teamwork; Effective Interview Techniques and Interview Simulation; Career Planning; Resume Preparation Techniques, Networking: Social networks for professional life; Project Management; Job Search Strategies.

ESTÜ402 Coaching and Leadership 3+0 3.0

Definition of coaching; The difference of the coaching profession from other specializations is the Basic Coaching Session; Characteristics of Coach; Harmony in Coaching Relationship; Different learning and experience styles, Coaching and Leadership-Based Communication; Listening deeply, Asking strong questions, Giving feedback. Coaching Levels; Goal, Motivation and Action steps, Goal Setting Coaching Tool; Circle of Life, Values Assessment Coaching Tool; Determination of core values, Leadership; Vision and mission work, Holistic Leadership; Life purpose study, Leadership Styles; Teacher, Visionary, Warrior, Wise, Nourishing.

ESTÜ403 Basic Computer Utilization 3+0 4.0

Computers: Binary number system, Computer architecture, Input-output units, System units; Computer Software: Operating systems, Utilities; Peripheral Equipment: Printers, Scanners; Computer Security: Viruses, Worms, Trojans, Antivirus software; Basic Internet Concepts: Computer networks, Working principle; Word Processor: Editing documents, Text formatting, Working with Tables; Spreadsheet: Page structure, Cell logic, Filtering in tables, Graphics, VBA introduction; Presentation: Slide layout, Transitions, Animations; E-mail: POP3, IMAP, Exchange, Account setup; Application software: Software that comes with the operating system, PDF Reading, Compression.

ESTÜ405 Computer Programming 3+0 5.0

Modern Computers: Data storage, Binary system, Computer architecture, Arithmetic and logical unit; Algorithm Concept:, Algorithm design, Flow charts; Python Basics: Python versions, Integrated development environments, First program; Basic Data Types: Numerical and logical data types, Dictionaries, Sets, Lists; Variables and Operators: Variables, Operators; Control Statements: Sequential Statements, Decision Control Statements, Repetitive Statements; Functions: Creating and calling functions, Arguments, Recursive functions; Object-Oriented Approach: Classes, Objects, Methods; File Operations: Opening file, Reading file, File methods; Graphical User Interfaces.

FİN202 Financial Management 3+0 4.5

Definition and Aim of Financial Management in Firms; Using Ratios, Breakeven and Operating Leverage in Financial Analysis; Fund Flow Statement; Pro forma Budget as Instrument of Financial Planning; Working Capital Management; Cash Management; Inventory Management; Interest Factor in Investment Decisions; Capital Budgeting; Debt Management; Using Other Financial Instruments; Cost of Capital.

FİZ105 Physics I 4+0 6.0

Measurement and Units: Measurement, Units, Dimensional analysis; Vectors: Vector and scalar quantities, Coordinate systems and frames of reference; Kinematics: Motion in one dimension, Motion in two dimensions; Dynamics; Work and Energy; Momentum and Collisions; Rotational Motion: Angular velocity and angular acceleration, Moments of inertia, Work and energy in rotational motion; Static Equilibrium.

FİZ105 (Eng) Physics I 4+0 6.0

Measurement and Units: Measurement, Units, Dimensional analysis; Vectors: Vector and scalar quantities, Coordinate systems and frames of reference; Kinematics: Motion in one dimension, Motion in two dimensions; Dynamics; Work and Energy; Momentum and Collisions; Rotational Motion: Angular velocity and angular acceleration, Moments of inertia, Work and energy in rotational motion; Static Equilibrium.

FİZ106 (Eng) Physics II 4+0 6.0

Electric Fields: Electric charge, Coulomb's law, Electric flux, Gauss's law; Electric Potential: Potential difference, Potential energy, Obtaining the electric field from the electric potential; Capacitors: Definition and calculation of a capacitance, Capacitors with dielectrics, Energy stored in a charged capacitor, Electric dipole in an external electric field; Electric Current; Magnetic Field: Sources of the magnetic field, Electromagnetic induction.

FİZ107 Physics Laboratory I 0+2 1.5

SI Unit System and Dimension Analysis; Measurement and Error Calculations; Graph Analysis; Principles of Experimental Studying and Preparation of Experimental Reports; Variation of Range due to Shooting Angle; Conservation of Energy; Motion with Constant Acceleration; Measurement of Angular Velocity; Determination of Moment of Inertia; Freely Falling; Simple Pendulum; Motion on Inclined Plane; Mass-spring System; Viscosity.

FİZ107 (Eng) Physics Laboratory I 0+2 1.5

SI Unit System and Dimension Analysis; Measurement and Error Calculations; Graph Analysis; Principles of Experimental Studying and Preparation of Experimental Reports; Variation of Range due to Shooting Angle; Conservation of Energy; Motion with Constant Acceleration; Measurement of Angular Velocity; Determination of Moment of Inertia; Freely Falling; Simple Pendulum; Motion on Inclined Plane; Mass-spring System; Viscosity.

FİZ108 (Eng) Physics Laboratory II 0+2 1.5

Usage of Electrical Measuring Instruments; Security Rules in Electrical Experiments; Principles of Experimental Studying and Preparation of Experimental Reports; Parallel-Plate Capacitor; Investigation of Charge Distribution on Surface of any Conductor; Ohm's Law through DC Electric Circuits; Wheatstone Bridge; Electromagnetic Induction; Transformer; Determination of Emf and Inner Resistance; Determination of Frequency; Oscilloscope.

FİZ119 Aeronautical Physics I 3+0 3.0

Vector: Coordinate systems, components of vector, mathematical process; Motion: Displacement, velocity, acceleration, free fall, inclined projectile motion, circular motion, Newton′s Laws, relative motion; Work, Power, Energy: Work-Energy theorem, conservation of mechanical energy; Momentum and Collision: Conservation, impulse, collusion; Rotation: Angular velocity and acceleration, kinematics, moment of inertia angular momentum, torque; Fundamental physics of Solar System: Formation, stars, orbital dynamics, Kepler′s laws; Sky analysis: concepts of fundamental astronomy, models of universe, fundamental components of universe, star map, space-time analysis; Earth: Formation, geometric-geomagnetic-motional-atmospheric properties; Spherical systems.

FİZ120 Aeronautical Physics II 3+0 3.0

Electrical charge: Electrical properties of matter, Coulomb; Gauss′s law; Electrical Potential: Analysis of charge; Capacitor: Capacitance circuit analysis; Current and Resistance: Ohm′s law, circuits, electromotive force, Kirchhoff; Magnetic Fields: Biot-Savart, Ampere; Faraday′s law: Induction, Lenz, mutual inductance; Spherical trigonometry: Spherical distance, surface, angular distance analysis; Localization, feature of map, scale, projection; Remote Sensing: Satellites, the wave theory of electromagnetic and light analysis, satellite image and aerial photo analysis; Positional Modeling: Fundamental components of digital maps, rectification, to assign a position, 2D and 3D digital data production, questioning, analysing and modelling with interactive data base.

FİZ231 Waves and Optics 4+0 5.0

Oscillatory Motion: Simple harmonic motion, Mass-spring system and pendulums, Conservation of energy, Damped and forced oscillations, Resonance; Mechanical Waves: Harmonic waves, Speed of a transverse wave, Energy in wave motion, Superposition and interference of waves, Standing waves; Sound Waves; Speed of sound waves, Interference of sound waves, The Doppler effect; The Nature of Light and Geometric Optics: The nature of light, Reflection and refraction, Huygens principle, Mirrors and lenses; Physical Optics: Interference, Diffraction, Polarization.

FOT202 Photography 2+0 3.0

Introduction to Photography: Relations between architects and photography, Description of visual aspect of architecture, Use of photography in the presentation of architectural products; The camera; Process of photographing; Film Development Procedure for Black and White Films, Film Development Procedure for Colored Films and Slides; Printing Processes.

FRA255 (Fra) French I 3+0 4.0

Language Functions: Greetings, Invitations, accepting or refusing invitations; Vocabulary Knowledge: Nourishment, Accommodation, Clothing and colors, Bairams and activities; Grammar: Expressions showing quantity, Demonstrative and possessive adjectives, Prepositions and time indicators, Stressed personal pronouns, Imperatives, Verbs with double pronouns; Learning About French Culture: An area in France: La Baurgogne; Pronunciation, Semi-vowels, Gliding.

FRA256 (Fra) French II 3+0 4.0

Language functions: Imperatives and wishes; Evaluation, Proving and Thanking; Vocabulary: Nourishment, Accommodation, Clothing and colors, Bairams and activities; Ordinal Numbers; Grammar: Expressions showing quantity, Demonstrative and Possessive Adjectives, Prepositions and Time indicators, Stressed personal pronouns: Imperative moods, Verbs with double pronouns; Learning about Target Culture: An Area in France: La Bourgogne; Pronunciation: Intonation, Semi-Vowels, Gliding.

HEE105 Theory of Flight 3+0 3.5

Aeroplane Aerodynamics: Aerostatics, Aerodynamics, Basic forces affecting aeroplane, Wing section, Boundary layer control, Stall; Flight Control Surfaces: Aileron, Spoiler, Elevator, Stabilator, Variable incidence stabiliser, Canard configuration, Elevon, Taileron; Rudder, Rudder limiters, Ruddervator, Tabs, Control surface bias, High lift devices (trailing edge flaps, leading edge flaps, slot, slat, flaperon), Airbrakes, Ground spoiler; High Speed Flight: Speed of sound, Subsonic, transonic, supersonic flight, Mach number, Critical Mach number; Rotary Wing Aerodynamics: Basic terminology.

HEE213 Aircraft Structures and Systems I 3+1 3.0

Structures-General Concepts: Fundamentals of structural systems, Zonal and station identification system, Electrical bonding, Lightning strike protection; Hydraulic Power: System lay-out, Hydraulic fluids, Hydraulic reservoirs and accumulators, Pressure generation (electrical, mechanical, pneumatic), Emergency pressure generation, Filters, Pressure control, Power distribution, Indication and warning systems, Interface with other systems; Landing Gear: Construction, Shock absorbing, Extension and retraction systems (normal and emergency), Indications and warnings, Wheels, Brakes, Antiskid and autobraking, Tires, Steering, Air-ground sensing.

HEE214 Aircraft Structures and Systems II 2+0 2.0

Air Conditioning and Cabin Pressurisation: Air supply, Air conditioning system, Pressurisation systems; Safety and warning devices; Oxygen System: Flight crew oxygen system, Passenger oxygen system, Portable oxygen system; Pneumatic/Vacuum System: System lay-out, System sources, User system, Component location, Distribution, Indications and warnings; Water/Waste System: Supply, Distribution, Water heaters, Draining system, Indicators.

HEE215 Aircraft Materials II 2+0 2.0

Introduction of Non-metallic Materials; Classification of Composite Materials; The Selection Criteria for Aircraft Structure; Specific Examples of Aviation Application of Non-metallic Materials; Fiber Reinforcements; Matrix Materials; Atomic and Micro Structure of Composite Materials; Mechanical Behaviors of Composite Materials; Fabrication Techniques of Composite Structures; Environmental Degradation of Composite Structures; Assembly Methods of Composite Structures; Maintenance and Repair Techniques of Composite Structures.

HEE222 Non-destructive Inspection 0+2 2.0

Non-destructive Inspection Methods: Liquid penetrant inspection methods and types of penetrants, Radiographic inspection, Radiographic X-ray film evaluation and archiving, Application steps of magnetic particle inspection methods, Eddy current inspection and probe types, Ultrasonic inspection methods and application techniques, Visual and optical inspection, Boroscope control.

HEE226 Electronic Fundamentals Laboratory I 0+2 2.0

Semiconductors, p and n type materials; Diodes; Diodes in series and parallel; Application of Diodes: Operation and function of diodes in the following circuits clippers, clampers, rectifiers, voltage multipliers; Other semiconductor devices: Main characteristics and use of thyristor, light emitting diode, photo conductive diode, varistor, rectifier diodes; Transistors: Transistor characteristics and properties, Construction and operation of pnp and npn transistors; Base, collector and emitter configurations; Transistor biasing circuits; Application of transistors: Switching Circuits, Amplifiers; AC Analysis of Small Signal Amplifiers and Power Amplifiers.

HEE230 Communication Systems Laboratory I 0+2 3.0

Introduction of Laboratory and Experimental Sets; Signals Collection and Multiplication; Amplitude Modulation (AM); Frequency Modulation (FM); Determine the Measurement and Modulation Index of FM Signal Frequency Deviation; Amplitude Demodulation; Frequency Demodulation; Digital Modulation: Sampling theorem, Pulse modulation, Time division multiplexing(TDM), Pulse code modulation(PCM), Pulse time modulation (PTM).

HEE234 Electronic Fundamentals I 2+0 3.0

Semiconductors, p and n Type Materials; Diodes; Diodes in Series and Parallel; Application of Diodes: Operation and function of diodes in the following circuits Clippers, Clampers, Rectifiers, Voltage multipliers; Other Semiconductor Devices: Main characteristics and use of thyristor, Light emitting diode, Photo conductive diode, Varistor, Rectifier diodes; Transistors: Transistor characteristics and properties, Construction and operation of pnp and npn transistors; Base, Collector and Emitter Configurations; Transistor Biasing Circuits; Application of Transistors: Switching circuits, Amplifiers; AC Analysis of Small Signal Amplifiers and Power Amplifiers.

HEE236 Communication Systems I 2+0 3.0

Introduction to Communication Systems; Communication Fundamentals: Noise, Sampling theorem, Filters, Oscillators; Amplitude modulation: Mathematical expression of AM, Generation of AM; Single Side Band Techniques: Definition and modulation techniques; Angle Modulation: Theorem, Frequency modulation (FM), Mathematical expression, Wave spectrum, Modulation methods, Comparison of FM and AM; Radio Receivers: Types of receiver, AM receivers, FM

receivers; Digital Modulation: Definition, Types of modulation and methods (PAM , PCM , TDM); Antennas; Transmission Lines.

HEE315 Aircraft Structures and Systems III 2+0 3.0

Fire Protection: Fire and smoke detection and warning systems, Fire extinguishing systems, System tests, Portable fire extinguisher; Fuel Systems: System lay-out, Fuel tanks, Supply systems, Dumping, Venting and draining, Cross-feed and transfer, Indications and warnings, Refueling and defueling, Longitudinal balance fuel systems; Ice and Rain Protection: Ice formation, Classification and detection, Anti-Icing Systems: Electrical, Hot air and chemical, De-Icing Systems: Electrical, Hot air, Pneumatic and chemical, Rain repellent, Probe and drain heating, Wiper systems.

HEE318 Electronic Fundamentals III 2+0 2.0

Description and Use of Printed Circuit Boards; Servomechanisms: Open and closed loop systems, Follow up, Analogue transducer, Null, Damping, Feedback, Deadband, Resolvers, Differential, Control and torque, E and I transformers, Inductance transmitters, Capacitance transmitters, Synchronous transmitters, Servomechanism defects, Reversal of synchro leads, Hunting.

HEE320 Digital Circuits II 2+1 3.0

Sequential Logic Circuits: Definitions, Why do we need a memory element?, Flip-flop structure, RS, D and JK type flip flops, Internal structure of master-slave flip flops, Edge triggered flip flops, Registers, Counters, Design of sequential circuits; Memory: Random Access Memory, Connecting memories, One or two dimensional internal memory organization, Read Only Memory, ROM decoder, Switching times of memories.

HEE322 Unmanned Aerial Vehicle Design, Control Systems and Workshop Applications 2+2 4.5

Aircraft Design Methodology; Mission Profiles, Competitor Study; Aircraft First Weight Estimates and Initial Sizing; Estimation of Critical Performance Parameters; Wing Loading, Weight/propulsion ratio, WS, Configuration plan; Body Configuration Selection, Tail configuration selection, Landing kit configuration selection, Propeller configuration selection, Propulsion systems, WS; Performance Analysis; Range and Durability, Landing and departure distances, Maneuverability, Flight stability and control; Longitudinal Stability, Lateral stability, Control surfaces, Cost analysis; Flight Safety and Flight Compatibility Documents (WS: Workshop Studies).

HEE324 Navigation Systems I 3+0 4.0

Fundamentals of Radio Wave Propagation; ADF (Automatic Direction Finder); VOR (VHF Omnidirectional Range); DME (Distance Measuring Equipment); TACAN (Tactical Air Navigation); ILS (Instrument Landing System); MLS (Microwave Landing System); Hyperbolic Systems: OMEGA, LORAN, DECCA; Doppler Navigation; Ground Radar Systems: PSR (Primary Surveillance Radar), SSR (Secondary Surveillance Radar), Transponder; Aircraft Radar Systems: Airborne Weather Radar, Radio Altimeter; TCAS (Traffic Alert and Collision Avoidance System); GPWS (Ground Proximity Warning System).

HEE326 Aircraft Electricity Workshop 2+4 5.0

Electric Cables and Connectors: Cable codes, Size, Types, Classifications, Isolation; Electrical Wiring Interconnect System (EWIS): Aircraft cables, Routing, Mounting, Strapping, Protection, Continuity, Short circuit control; Crimping Tool: Usage, Insulation, Connecting, Test; Connectors; Standards, Structure, Pin, Plug-Receptacle Concepts, Pin Remove-İnsertion; Avionic General Test Equipment: Types, Usage areas; High Voltage Test Equipment: Usage areas, Applications; Electrical Maintenance Manual Usage and Aircraft Electric System Applications; Soldering: Methods, Control, Protection; Abnormal Events; Lightning Strike and High Intensity RF Effects Inspection.

HEE327 Electronic Fundamentals II 2+1 3.0

Transistors: Construction and operation of PNP and NPN transistors, Other transistor types, Application of transistors; Classification of Amplifiers; Simple Circuits: Bias, Decoupling, Feedback and Stabilization; Multistage Circuits: Cascades, Push-pull, Oscillators, Multivibrators, Flip-flop circuits; Integrated Circuits: Description of logic circuits and linear circuits; Introduction to Operation and Function of Operational Amplifiers: Integrator, Differentiator, Voltage follower, Comparator; Connecting Amplifiers: Resistive, Capacitive, Inductive, Inductive resistive, Direct; Positive and Negative Feedback.

HEE328 Digital Data Transmission 2+0 2.0

Data Conversion: Analogue data, Digital data, Practice with analogue to digital, and digital to analogue converters, Inputs and outputs, Conversion limitations; Data Buses: Operation of data buses in aircraft systems, ARINC and other specifications; Aircraft Network/Ethernet; Fiber Optics: Advantages and disadvantages of fiber optic data transmission over electrical wire propagation, Fiber optic data bus; Fiber Optic Related Terms; Terminations; Couplers, Control Terminals, Remote Terminals; Application of Fiber Optics in Aircraft Systems.

HEE329 Digital Circuits I 2+1 3.0

Signals: Analog, discrete and digital forms, Representation of digital signal; Basic Logic Functions: NOT/AND/OR gates, Interpretation of gate circuits; Boolean Algebra and De Morgan's Theorem; Binary, Octal and Hexadecimal Number Systems: Conversion between number systems; Standard Forms of Logic Functions; Karnaugh Maps: Minimization of logic functions; Data Handling Logic Circuits: Definitions, Decoder and encoder design, Internal structure of multiplexers and demultiplexers.

HEE331 Aircraft Hardware 1+2 4.5

Fasteners: Screw threads, Screw nomenclature, Thread forms, Dimensions, Tolerances, Measurements, Bolts, nuts, studs and screws, International standards, Locking devices, Types of solid and blind rivets, Heat treatment; Pipes and Unions: Rigid and flexible pipes, Standard unions; Springs: Types, Materials, Applications; Bearings: Purposes of bearings, Loads, Types, Materials; Transmissions: Gear types, Gear ratios, Driven and driving gears, Belts and pulleys, Chains; Control Cables: Types, Aircraft flexible control systems, Bowden cables.

HEE335 Maintenance Practices I 2+3 5.0

Safety Precautions-Aircraft and Hangars: Safe operating procedures; Workshop Practices: Care of tools, Dimensions, Tolerances, Calibration of tools and equipment, Calibration standards; Tools: Types, Precision measuring tools, Lubrication equipment; Fits and Clearances: Limits for bow, Twist and wear, Shaft and bearing checking standards; ATA (Air Transport Association) Definitions of Aircraft Group, System and sub-system.

HEE403 Aircraft Instruments 3+1 4.5

Requirements and Standards; Elements and Mechanism; Instrument Terminology; Atmosphere; Instrument Displays; Panels and Layout; Instrument Grouping; Mounting Methods; Magnetic Indicators and Flow Lines; Illumination of Instruments and Panels; Pressure Measurement; Motor Pressure Indicators; Oil Pressure Indicating System; Pressure Instruments; Barometers; Pitot-Static Systems; Sensitive Altimeter; Rate of Climb Indicator; Measurement of Airspeed; Machmeter; Airspeed Indicators; Control Air Data Computer; Gyroscopes.

HEE419 Maintenance and Repair in Aircraft Electric Systems 2+1 3.0

Problem Areas in Aircraft Electrical Power Systems; Problems and their Solutions in AC and DC Electrical Power Systems; The Causes and Solutions of the Problems that May Occur in Nickel-Cadmium Batteries in Aircraft; Wiring on Aircraft: Solutions of the problems related to the wiring on the aircraft, Chafing and chafing prevention in aircraft wiring system; Electromagnetic Interference in Aircraft Electrical Systems: General information, Solutions for electromagnetic interference in aircraft; Case Studies for Electrical Failures and their Solutions.

HEE421 Communication Systems II 3+0 3.0

Flight Interphone System; Service Interphone System; Ground Crew Call System; Flight Crew Call System; Passenger Address System; VHF Communications System; HF Communications System; Selective Calling System; Emergency Locator Transmitter; Voice Recorder System; Printer System; Aural Warning System Master Caution System; Takeoff/landing Warning System; Clocks; Passenger Entertainment System /Audio; Passenger Entertainment System /Video; Aircraft Communication Addressing and Reporting System; Satellite Communication System.

HEE423 Navigation Systems II 3+0 3.0

GPS (Global Positioning System); GNSS (Global Navigation Satellite Systems); Augmentation of Satellite Systems: SBAS (Satellite Based Augmentation Systems), GBAS (Ground Based Augmentation Systems), ABAS (Aircraft Based Augmentation Systems); Area Navigation (RNAV); Performance Based Navigation (PBN); Flight Management System (FMS); Inertial Navigation Systems (INS); CNS-ATM (Communication, Navigation, Surveillance and Air Traffic Management).

HEE427 Troubleshooting Methodology 2+0 2.0

Fundamentals of Failures: Definition of failure, Types of failures, Hardware failures, Software failures, Functional failures, Systematic failures, Environmental effects on failure rates, Common-cause failures, Root-cause analysis; Failure States: Overt failures, Covert failures; Troubleshooting Frameworks: Logical/Analytical troubleshooting frameworks, Generic logical/analytical frameworks, A seven-step procedure, Specific troubleshooting frameworks; Troubleshooting Scenarios; Troubleshooting Hints on Aircraft Systems: Electronic Systems, Calibration, Measurement Equipment; Failure Examples.

HEE431 Gas Turbine Engines 3+0 3.0

Turbine Engines: Turbojets, Turbofans, Turboprops, Turboshafts; FADEC; Engine Indication Systems: Exhaust gas temperature indicator, Engine speed indicator, Engine thrust indicator, Engine pressure ratio indicator, Oil temperature and oil pressure indicator, Fuel temperature, fuel pressure and fuel flow indicator, Manifold pressure, Engine torque, Propeller speed; Starting System: Operation of engine starting system and components; Ignition System: Ignition system and components; Maintenance Safety Requirements.

HEE432 Gas Turbine Engines Workshop 0+3 1.5

Turbine Engines: Turbojets, Turbofans, Turboprops, Turboshafts; FADEC; Engine Indication Systems: Exhaust gas temperature indicator, Engine speed indicator, Engine thrust indicator, Engine pressure ratio indicator, Oil temperature and oil pressure indicator, Fuel temperature, fuel pressure and fuel flow indicator, Manifold pressure, Engine torque, Propeller speed; Starting System: Operation of engine starting system and components; Ignition System: Ignition system and components; Maintenance Safety Requirements.

HEE434 Automatic Control 2+2 4.5

Introduction to Automatic Control: Control, Automatic control, Input, output and command variables, disturbances; Laplace transform; System Dynamics: Electrical and mechanical system elements; Transfer Function and Block Diagrams; Controller Types: P, I, D, PI, PD and PID controllers; Stability of Control Systems; Transient Responses of Closed Loop Control Systems.

HEE440 Maintenance Practices-M13 II 0+3 3.0

Aircraft Illumination System: Change of lights and filaments in the cockpit, cabin; ADF (Automatic Direction Finder) System: Component replacement, Functional test; VHF Communication System: Identification of components, Replacement of LRUs, System test; Inertial Reference Unit/Platform: Identification, Aligning/initialization; Flight Director System: Identification, Functional test; Flight Management System: Identification, Discussion, Performing of typical maintenance practices.

HEE441 Maintenance Workshop Applications-M13 I 0+5 3.0

Electrical Power Distribution Contactor/Relay/RCCB Removal Installation; Replacement of Oven or Boiler; Remove and Refit Emergency Battery; Replacement of Electrical Hydraulic Pump; Intercommunication/Passenger Address Component Replacement and Testing; Testing of Radio Altimeter System; Automatic Flight Modes Experience and Functional Testing; Inspect and Functional Test Fire Extinguishing Systems; Inspect and Control Engine Fire Extinguishing Bottle; Check Adjustment of Propeller Micro-Switch; Demonstrate Propeller Anti-Icing/De-Icing Systems on Propeller; Replace Avionic LRU and BITE Test; Component Replacement and Functional Test on Weather Radar System.

HEE442 Maintenance Workshop Applications-M13 II 0+5 4.5

Magnetic Compass Error Calculation Adjustment; Check Magnetic Compass on Aircraft; Use of VHF Communications System; Component Replacement and Test on VHF Communication System; Component Replacement and Test on HF Communication System; Component Replacement and Test on VHF Navigation System; Radio Standing Wave Measurement Tests; Check Pitot Static Instruments; Check Pitot Static System Calibration Using Pitot-Static Test Set; Test ILS/VOR Systems Using Test Equipment; Replacement and Functional Test of Gyroscopic Instrument or Component; Functional Test of Fuel Quantity System; DME Functional Test Using Test Set; ATC/TCAS System Component Replacement and Test.

HEE443 Microprocessors 3+1 3.0

Controllers: Register transfer, Complementing, Shifting, Incrementing and decrementing, Reset and set; A Simple Controller: Register responsive to multiple commands, Shift register controller; A Simple Computer: Hardware, Controller, Interrupts; An Improved Architecture: Simple commands, Addition and subtraction, Skipping, Jumping, Multiplication as a computer program, Fetch and execute cycles of an instruction; Microprogramming; Microprocessors.

HEE444 Aircraft Instrument Systems II 2+0 2.0

Pitot Static Systems; Altimeters; Vertical Speed Indicators; Airspeed Indicators; Machmeters; Altitude Reporting/Alerting Systems; Air Data Computers; Instrument Pneumatic Systems; Ground Proximity Warning Systems; Flight Data Recording Systems; Electronic Flight Instrument Systems; Instrument Warning Systems including Master Warning Systems and Centralised Warning Panels; Stall Warning Systems and Angle of Attack Indicating Systems; Glass Cockpit.

HEE446 Applications of Avionics 0+3 3.0

Research Techniques: Basic research and applied research, Data collection techniques, Data processing; Research Methods: Subject selection, Subject restriction, Reference collection; Detailed Research on a Subject in Avionics: Definition of the problem or the subject in details, Definition of solution techniques or analysis methods, Research and performing practical work, Results; Reporting: Page set up, Sentence structure, Headings, Abbreviation formats, Figure and table formats, Table of references format.

HEE447 Aircraft Structures and Systems Applications-M11 0+3 3.0

General Aircraft Practices: Finding of inspection doors and components, Replace vacuum and fuel pump, CSD/IDG, pressurization test, Electricity system practices: Contactor, Role, Generator, Magnetic compass, Interior/Exterior lamps; Interior Practices: Carpet, Seats, Seatbelts, Emergency equipment, Cargo and Cabin interiors panels, Door sealants, Flight Compartment Window/Windshield Wiper Replacement; Hydraulic System Practices: Replace of hydraulic/component, Shaft inspection; Landing Gears/Brake System Practices: Wheels, Brake units, Sealants; Fire Warning/Extinguishing System Practices: Control/inspection of engine fire extinguishing system; Fuel pump replacement.

HEE448 (Eng) Microwave Theory 3+0 3.0

Electromagnetics Fundamentals: Definition of electromagnetic waves and electromagnetic wave propagation; Transmission Lines: Characteristic impedance, Propagation velocity and Velocity factor, Standing waves, Reflection coefficient; Smith Chart; Microwave Transmission Lines: Two-wire lines and coaxial cables, Waveguides; Passive Microwave Components: Connectors, Attenuators, Isolators, Filters; Active Microwave Components: Velocity modulation, Klystron oscillators and amplifiers, Magnetron; Antennas: Antenna types and arrays; Microwave Measurements: Noise, Frequency and Power measurements, VSWR measurement.

HEE449 Maintenance Practices-M13 I 0+5 4.5

Replacement of Various Avionics LRUs and Performing BITE Tests: Removal/Installation and testing of HSI, VSI etc.; Removal Installation of Some Antennas: DME, ATC and RA antennas; VHF Navigation (VOR) System: Removal/installation of components (LRUs); Weather Radar System: Component replacement, Functional test; Aircraft Electrical System: Generator power control/voltage adjustments, Replacement of electrical distribution contactor/relay/RCCB etc, Replacement of APU and main battery.

HEE452 (Eng) I.L.S./V.O.R./D.M.E. 3+0 3.0

Mathematical Background; Line Circuits; Specifications of ILS; Separate Amplitude Modulation; Antenna Combinations; Localizer Signal; Glide Path Signal; ILS Errors; Thomson ILS 381; Specifications of VOR: Azimuth, Using of VOR in navigation, Electrical definition of azimuth; VOR Reference Signal; VOR Variable Signal; VOR Error Curves; Thomson VOR 540 C; Introduction to DME; Calculation of distance; Specifications; Transponder; Accuracy; Receiver; Transmitter; Supervising Function; Control Function; Maintenance Function; Thomson DME 740.

HEE453 Aircraft Instrument Systems I 2+0 3.0

Classification; Aircraft Indicating Systems; Atmosphere; Pressure Measuring Devices and Systems: Direct reading pressure and temperature gauges, TAT, SAT, Temperature indicating systems; Fuel Quantity Indicating Systems; Gyroscopic Principles; Artificial Horizons; Turn and Slip Indicators; Directional Gyros; Compass Systems: Magnetic compasses, Slaved gyro compasses; Vibration Measurement and Indication; Related Terminology.

HEE454 Vocational Training in Workplace 0+18 18.0

Replacement of Avionics LRU and BITE Tests; Replacement of Antennas; Weather Radar; Aircraft Electrical and Illumination Systems; ADF; IRU; FMS; Contactor/Relay/RCCB Replacement; Replacement of Emergency Battery; Replacement of Electrical Hydraulic Pump; Intercommunication Component Replacement and Testing; RA Testing; AFS Functional Testing; Testing of Fire Extinguishing Systems; Magnetic Compass Error Adjustment; Component Replacement and Test on VHF/HF Communication-Navigation Systems; Pitot Static System Check; ILS/VOR/DME Testing; Replacement and Testing of Gyroscopic Instrument; Fuel Quantity System Testing; ATC/TCAS Component Replacement and Testing.

HEE456 Maintenance Practices II 1+5 3.5

Aircraft Weight and Balance: Center of gravity/Balance limits calculation, Use of relevant documents; Aircraft Handling and Storage: Aircraft taxiing and towing, jaking, chocking, securing, Aircraft storage methods, Refueling/defueling procedures, Electrical, hydraulic and pneumatic ground supplies, Effects of environmental conditions on aircraft handling and operation; Disassembly, Inspection, Repair and Assembly Techniques; Maintenance Procedures; Troubleshooting Techniques.

HEESJ402 Internship I 0+2 5.0

Information about the Internship: Purpose, Method, Process; Introduction of Organization; Aviation Legislations; Flight Safety/Security; Occupational Health and Safety; Professional Awareness: Scope of the profession, Importance of maintenance, Aircraft maintenance and procedures; Sectoral Practices: Work experience gain, Professional skills, attitudes and behaviors observation, Maintenance/quality/R&D practices, Usage of related documents and tools, System familiarization/fault detection, Scheduled/Unscheduled maintenance, Line/Base maintenance, Analysis, Hardware selection, Implementation and concluding; Report Writing and Presentation.

HEESJ404 Internship II 0+2 2.5

Information about the Internship: Purpose, Method, Process; Introduction of Organization; Professional Awareness: Scope of the profession, Importance of maintenance, Aircraft maintenance and procedures; Sectoral Practices: Work experience gain, Professional skills, attitudes and behaviors observation, Maintenance/quality/R&D practices, Advance usage of related documents and tools, System familiarization/fault detection, Scheduled/Unscheduled maintenance, Line/Base maintenance, Analysis, Hardware selection, Implementation and concluding; Report Writing and Presentation.

HTK101 Aircraft Basic Knowledge 4+0 4.0

Theory of Flight: Aerostatics, Aerodynamics; Basic Aerodynamics: Physical characteristics of air, Standard atmosphere, Airflow, Components of aerodynamic force, Aerodynamic moment, L/D ratio; Wing: Geometrical, structural and aerodynamic characteristics, Wing configurations, Flaps; Fuselage: Geometrical, structural and aerodynamic characteristics; Landing Gear: Types and components; Flight Control Surfaces: Primary flight control surfaces, Tabs; Aircraft Power plants: Reciprocating engines and propeller, Gas turbine engines.

HTK103 Air Traffic Services 4+0 5.5

Introduction to Air Traffic Control; International and National Civil Aviation Organizations; Air Rules (ICAO Annex 2), Air Traffic Services (ICAO Annex 11): Air traffic control services; Flight Information services; Alerting services; Air Traffic Control Clearances: Contents of the air traffic control clearances; Altimeter setting procedures and flight level allocation; Transition altitude; Rules and Regulations: General rules, Airspace, Air rules, Differences in ICAO and national rules, Flight Rules, Instrument Flight Rules, Visual Flight Rules; Flight Plans.

HTK104 Aerodrome Control Procedures 5+0 6.0

Distribution of Responsibility among Air Traffic Control Units; Flight Plans; Aerodrome Control Tower; Introduction to Aerodrome Control Towers System; Work Positions; Aerodrome Control Services and RAMP; Functions of Aerodrome Control; Taxi and Traffic Patterns; Selection of Runway in Use; Control of Aerodrome Traffic; Separation of Aircraft and Vehicles on the Maneuvering Area; Control of Departing Aircraft; Control of Arriving Aircraft; Wake Turbulence Categories; Emergency Procedures.

HTK105 Introduction to Air Traffic Control 2+0 3.0

Air Traffic Control: Definition, International and national regulations and rules; Current Documentation; Air Traffic Controller: Tasks and requirements, Process of air traffic controller selection and training, Air traffic controller license and rating, Medical requirements, Language requirements, Working units; Minimum Knowledge Requirements: ICAO and ESARR 5; Air Traffic System: Communication, Navigation, Surveillance, procedures, airplanes, airspaces, airports.

HTK106 Unmanned Aerial Vehicles 2+0 2.5

Basic Concepts: History, UAV system components, UAV, Ground control station; UAV Classification: Classification methods, European UAV classification, American UAV classification, Turkey UAV classification; International Studies and Legal Legislation: EASA UAV legislation, FAA UAV legislation, SHGM UAV legislation; Safe Separation: Airspace and requirements, Wake turbulence effects, Safety layers; Operational Concepts: General requirements, Flight operations, Unexpected events.

HTK108 Basic Principles of Helicopter 2+0 2.5

Introduction: Definition, types and usage areas of helicopter; Helicopter Main Rotor and Tail Rotor: Definition and functions; Forces Acting on the Helicopter: Lift, Thrust, Weight and drag; Flight of the Helicopter: Vertical, forward, backward and side flight; Ground Effect; Flight by Autorotation; Helicopter Flight Control Systems: Collective pitch control, Throttle control, Cyclic pitch control, Antitorque pedals; Operation Limits: Speed limit, Altitude limit.

HTK205 Communication and Navigation Systems 3+0 4.0

General Information About Radio Waves; Classification of Navigation System; ADF (Automatic Direction Finder); VOR (VHF Omni Directional Range); DME (Distance Measuring Equipment); TACAN (Tactical Air Navigation); ILS (Instrument Landing System); MLS (Microwave Landing System); RA (Radio Altimeter); GPWS(Ground Proximity Warning System); RADAR (Radio Detection and Ranging); GCA (Ground Control Approach); OMEGA; GPS (Global Positioning System); INS (Inertial Navigation System).

HTK215 Aerodromes 3+0 4.5

National and International Regulations of Aerodromes: Abbreviations and symbols, Procedures by contracting states; Definitions: Aerodrome reference code, Aerodrome and runway altitude; Aerodrome Data: Coating strength, PAPI-VASIS; Physical Properties: Runways, Runway and safety areas, Clearways, Stopways; Runway Configuration Considerations; Factors Related to the Direction and Number of Runways; Parallel Runway Operations; Taxiway Systems; Aprons; Obstacle Restriction and Removal; Visual Aids for Navigation; Airport Capacity; Environmental Impacts at Aerodromes; Heliports.

HTK220 Non-Radar Control Procedures 5+0 6.0

ATC Certification and Qualification; Distribution of ATS Responsibility; Explanation of Coordination Principles; Explanation of Need for Coordination; Definitions; Separation Standards; Air Traffic Control Clearances and Strip Markings; Essential Traffic; Control of Departing/Arriving Aircraft; Visual Approach; Parallel Runways; Emergency Situations; Phraseology; Synthetic Area; RVR; Coordination; ACAS/TCAS; Extraordinary Situations; Radio Failure; Hijacking; Engine Failure/Emergency.

HTK222 Aeronautical Information Management 4+0 4.5

Aeronautical Information Service (AIS); Aeronautical Information Management; Requirements of AIM, Requirements of Aeronautical Information Publication; Chicago Convention; ICAO; IAIP; Aeronautical Information Publication (AIP), Chapters and contents, General, En-route, Aerodromes; AIP Change Service (AIP AMDT and AIRAC AIP AMDT), AIP SUP; NOTAM and PIB; AIC; AIRAC; Flight Plans.

HTK224 Flight Mechanics and Aircraft Performance 3+0 3.0

Forces acting on an aircraft: Inertial forces; Aerodynamic forces; Propulsive forces; High speed flight; Subsonic Flight; Mach number and critical Mach number; Compressibility effects; Polar and lift-to-drag ratio; Level flight for turbojets and piston-props aircraft; Service Ceiling; Range and Endurance for Different Flight Condition; Climbing flight for Turbojets and Piston-props Aircraft; Rate of climb, Climb gradient, Climb time; Gliding Flight and Performances; Turning Flight and Performances; Take-off and Landing; Flight Operation Procedures.

HTK227 Aerodrome Control Simulation I 2+2 5.0

ICAO Aerodrome International Location Indicators and Aircraft Call-signs; Functions of Aerodrome Control Towers; Control of Aerodrome Traffic; Control of Taxing Aircraft; Designated Positions of Aircraft in the Aerodrome Traffic and Taxi Circuit; Aeronautical Ground Lights; Alerting Services Provided by Aerodrome Control Towers; VFR Arrival Routes; Strip marking; Taxi and ATC Clearances for IFR Traffic; Separation Between Departing/Arriving IFR and VFR Traffics; Aerodrome Traffic Circuit; Control of Start up, Push-back Taxi and Departing Operations; Control of Departing Aircraft; Control of Arriving and Departing IFR Flights and Control of Aircraft and Vehicles on the Ground; Control of Complex Ground Operations; Control of Arriving and Departing Aircraft.

HTK228 Aerodrome Control Simulation II 2+4 6.0

Control of Mixed IFR and VFR Operations; Control of Aerodrome Traffic Circuit and Touch and Go Operations; Mixed Operations: Arriving and Departing VFR Traffic with IFR Arrivals Performing Instrument Approach and Aerodrome Traffic Circuit Operations; IFR Visual Approach and IFR/VFR Flights Operational Efficiency and Review Practice; Complex Operations; Cancellation of Departing Aircraft, Go around with IFR Traffic, Selection of Runway in Use, Fire and Aerodrome Emergency Practices, Emergency Situations on Aircraft and Radio Failure.

HTK232 Air Traffic Communication 3+0 3.0

Communication Systems; Activity and Quality in Communication; Aeronautical Communication Procedures; CIDIN/SITA; Aeronautical Fixed Telecommunication Service; Message Format; Parts of Messages; Priorities; Types of Message; Preparation of a Flight Plan in Aeronautical Fixed Telecommunication Network Format; Service Messages; Codes and Identifications Used in Aeronautical Fixed Telecommunication Network Messages; Decoding an AFTN Message; Aeronautical Mobile Service; Aeronautical Radio Navigation Service; Aeronautical Broadcasting Service; Aeronautical Surface Movement Control Service; Flight Data Process; Communication Equipment; Intercom; CPDLC; SELCAL.

HTK234 Navigation 3+0 3.5

Need for Navigation in Aviation; Navigation Methods; The Earth; Fundamentals of Geographic Coordinate System; Time and Time Conversions; Distances and Directions on the Earth; Great Circles and Rhumb Lines; Magnetism; True North, Magnetic North, Compass North, Charts in Air Traffic Services; Symbols on Charts; Basic 1:60 Rule; Triangle of Velocities, IFR and VFR Planning.

HTK316 Radar Control Procedures 5+0 6.0

Introduction; Radar; Functions of Radar; Use of Radar in the Air Traffic Control Service; Radar Services; Radar Identification Procedures; Primary radar (PSR), Secondary radar (SSR); Misidentification; Factors Causing Misidentification; Loss of Radar Identity; Radar Vectoring; Speed Control; Separation Application of Radar Separation and Minimum Radar Separation; Traffic and Position Information; Emergencies; Phraseology; Strip Marking; Introduction of Real and Synthetic Terminal Area Configuration for Practical Training.

HTK317 Instrument Flight Procedures 4+2 8.0

General Criteria: Speed, Aircraft categories, Turn performance, Wind effect and wind spiral, Climb and descent rate, Minimum obstacle clearance, Fix and fix tolerances, Flight technical tolerances; Conventional Holding Procedures, Instrument approach phases: Arrival, Initial approach, Intermediate approach, Final approach, Missed approach, Non-precision approach: Protection areas, Obstacle clearance, Circling approach; Precision approach: Obstacle assessment surface (OAS), Collision Risk Model (CRM); Departure procedures; Area navigation (RNAV) Procedures: VOR/DME RNAV, DME/DME RNAV, GNSS RNAV, RNAV Holding, RNAV Approach, RNAV Departure; Procedure design exercise.

HTK320 Human Factors in Air Traffic Control 3+0 4.0

Human Role and Importance in Civil Aviation System; Aviation Safety and Human Factors; Definition of Human factors; SHELL model; Controllers? Performance and Factors Affecting Performance: Individual differences, Information processing, Situation awareness, Organizational climate, Teamwork, Stress, Shift work, Workload; Human Error: Human

error in aviation, Classification, Error models; SHELL mode; Communication; Work environment: Ergonomics, Hardware, Automation, HMI, Human Factors in Future Systems.

HTK323 Trajectory Analysis and Prediction 3+0 4.5

Aircraft Trajectory Analysis and Prediction in Air Traffic Management; Flight Operations: Types of flight services, Types of aircraft, Flight mission profiles; Aircraft Performance Parameters; General Aircraft Equations of Motion; Aircraft Performance Models; Energy Method; Cruise Trajectories: Maximum range and endurance, Stepped and airspeed restricted cruise; Climb and Descent Performance: Minimum time climb, Economic climb, Glide; Maneuver Performance; Trajectory Predictions: Tactical and strategic trajectory prediction; Sensitivity Analysis: Effects of wind and traffic; Conflict Avoidance: Conflict detection and resolution; Avoidance Maneuvers in the Horizontal and Vertical Plane.

HTK324 Surveillance Systems 3+0 3.0

Surveillance Techniques; Basic Principles of Radar; Primary Surveillance Radar (PSR); Secondary Surveillance Radar (SSR): SSR Interrogation modes, Transponder and reply format; Monopulse SSR; SSR Mode-S; Automatic Dependent Surveillance; Broadcast; Automatic Dependent Surveillance; Contract; Multilateration; Data Link Techniques; Processing and Display of Surveillance Data; Automation; Safety Nets: MTCA, STCA, APW; Surveillance Systems for En-route, Terminal Area, Airport Operations and Aircraft.

HTK325 Non-Radar Control Simulation 7+1 6.5

Terminal Area: Routes, Route minimas, Arrival procedures, Approach procedures, Separation methods, Phraseology, Coordination; Arrival Traffics: Traffics on same tracks, Reciprocal tracks, Crossing tracks, Sequencing; Departure Traffics: Departure procedures, Arrival departure traffic separation, Restrictions; Mixed Traffics: Arrivals, Departures, Runway change, Performance differences; Flight Information Region: Routes, Route minimas, Separation methods, Coordination; Mixed Traffics: Transit traffics, Arrival traffics, Departure traffics, Arrival transit separation, Arrival departure separation, Emergency procedures, Performance differences, Speed restrictions.

HTK326 Radar Approach Control Simulation 7+1 14.0

Terminal Maneuvering Area: Routes, Route minimas, MRVA, Arrival procedures, Approach procedures, Separation methods, Phraseology, Coordination; Arrival Traffics: Traffics on same tracks, Reciprocal tracks, Crossing tracks, Radar vectoring, VMC approach; Departure Traffics: Departure procedures, Arrival departure traffic separation, Restrictions; Mixed Traffics: Arrival traffics, Departure traffics, Runway change, Performance differences, Collocation change, RNAV procedures; Departure Traffics; Departure procedures, Arrival departure traffic separation; Mixed Traffics: Arrival traffics, Departure traffics, Emergency, Runway change, Performance differences.

HTK409 Civil-Military Air Traffic Coordination 2+0 3.0

Development of National Aviation; Flight Safety; Turkish Civil Aviation Law; Training Areas of Military Bases; Flight Organization of Military Bases; Military Terminal Areas of Turkish Air Space; ATC Coordination of Civil-Military ATC Units in Case of Crisis; Civil-Military Coordination During Exercises; Interception of Civil Aircraft; Onsite Visit of Military Units. Development of national aviation; Flight safety; Turkish Civil Aviation Law; Military terminal areas; Air Defense Notification Center (ADNC); Coordination between civil and military ATC units; Air defense activities; the mission of ADNC; Radar control services; VIP traffic; Responsibilities of civil/military ATC units in uncertainty phase; Civil and Military coordination during national and NATO exercises; Interception of civil aircraft.

HTK418 Airspace Organization 2+0 3.0

Airspace: Designation and establishment of airspace, Airspace restriction and reservation, Airspace classifications, Airspace configurations; Airspace sectorisation; Air traffic service (ATS) Routes: Establishment of an ATS route network, Establishment of significant points, Standard departure routes, Standard arrival routes, Alignment of ATS routes; RNAV application in airspace; Airspace and current air traffic service environment, Turkish FIR and route network, Terminal control areas (TMA), Military terminal control areas (MTMA); Flexible use of airspace; Free route airspace concept.

HTK423 Air Traffic Flow Management 3+0 2.5

CFMU (Central Flow Management Unit); FMPs (Flow Management Positions); Area of Responsibility; Organization: FDO (CFMU Flight Data Operation Division); IFPS (Integrated Initial Flight Plan Processing System); CFMU Strategic System (STRAT); CFMU ATS Data Bank Substructure Facilitys; CFMU Archive System; CEU (Central Executive Unit); CFMU Tactical System (TACT); Aircraft Operator Contact Office; CFMU Operational Procedures; ATFM (Air Traffic Flow Management); Application of ATFM Measures; Exemption and Priorities; Re-routing; Slot Allocation and Monitoring; ATFM and Departing Aircraft.

HTK425 Radar Area Control Simulation 7+1 12.5

Flight Information Region: Routes, Route minimas, Separation methods, Phraseology, Coordination with approach and tower, Coordination with adjacent sectors and FIRs; Mixed Traffics: Transit traffics, Arrival traffics, Departure traffics, Arrival transit separation, Arrival departure separation, Emergency procedures, Aircraft performance differences, Speed restrictions; Using FDP: Transfer of traffics, Letters of agreement.

HTK426 Safety Management in Air Traffic System 2+0 2.5

Basic Concepts, Policies and Principles: Definition of safety and security, Priority, Safe ATC, Safety management policy, Responsibilities, Setting up a system; Impact of Regulations on Controllers; Safety Auditing: Types, Survey plans, Reports, Follow-up action plans; Incident Investigation: Steps; Risk Classification: Terminology, Risk classification and tolerability in ATC and airport systems, Safety Assessment in ATC; Hazard Analysis Techniques: Hazard analysis, Failure models, Hazard and incident trees, Human factors; Assessment and Management of Safety Cases; Safety Manager: Role, Organization and training, Media and accidents.

HTK428 Trends, Perspectives and Visions in Air Traffic Management 2+0 3.0

Brief History of Air Traffic Control; Selection, Certification and Recruitment of Controllers: ESARR 5 rules, Language proficiency criteria; Communication Problems: Language-based problems, Non-language based problems, Short- and long-term solutions; Air Traffic Control Environment: Perceptions and reality; Air Transportation Safety and Role of Air Traffic Management: Historical data and future forecasts; Aviation Security Issues and Air Traffic Control; Future Trends in Air Transportation and Their Reflections on Air Traffic Management: Aircraft, Concepts, Systems; New Technologies and Perspectives in Air Traffic Management.

HTK428 (Eng) Trends, Perspectives and Visions in Air Traffic Management 2+0 3.0

Brief History of Air Traffic Control; Selection, Certification and Recruitment of Controllers: ESARR 5 rules, Language proficiency criteria; Communication Problems: Language-based problems, Non-language based problems, Short- and long-term solutions; Air Traffic Control Environment: Perceptions and reality; Air Transportation Safety and Role of Air Traffic Management: Historical data and future forecasts; Aviation Security Issues and Air Traffic Control; Future Trends in Air Transportation and Their Reflections on Air Traffic Management: Aircraft, Concepts, Systems; New Technologies and Perspectives in Air Traffic Management.

HTK433 Air Traffic Practices I 0+4 2.5

Determination Air Traffic Management Problems Area; Literature Survey; Determination of Historical Trends of the Problem; Determination of Research Question or Hypothesis; Qualitative and Quantitative Analysis of the Current Situation; Selection of the Problematic Area for Development; Preparation and Presentation of the Report for Development; Selection of Simulation Parameters; Design of Experiments.

HTK434 Air Traffic Management 3+0 2.5

Origin and Development of Air Traffic Management: History of air traffic control, Development of air transportation; Definition and Components of Air Traffic Management: Air traffic services, Air traffic control, Alerting services, Flight information services, Air traffic system components, Airspace, Technical equipment, Aeroplane, Human factors, Air traffic flow management, Congestion flow management, Airspace management, Traffic flow and capacity, Separation assurance; Air Traffic Management Functions: Organization, Planning, Control, Coordination, Staffing; Capacity and Efficiency Definitions in Air Traffic System; Recent Problems in Air Traffic Management: Performance shortfalls in air traffic management, Safety, Capacity, Efficiency, Cost-effectiveness; Aircraft Performance Models; ATCO Training and Licensing; Potential Solutions: ICAO special committee on future air navigation systems, Implementation of the future CNS/ATM system.

HTK436 Radar Coordination Simulation 7+1 8.5

Flight Information Region: Routes, Route minimas, Separation methods, Phraseology, Coordination with approach and tower, Coordination with adjacent sectors and FIRs; Terminal Maneuvering Area: Routes, Route minimas, MRVA, Arrival procedures, Approach procedures, Separation methods, Phraseology; Mixed Traffics: Transit traffics, Arrival traffics, Departure traffics, Arrival transit separation, Arrival departure separation, Emergency, Aircraft performance differences, Speed restrictions, Coordination methods; Collaborative Work: Information management, Transfer of control, Coordination agreements, Traffic information, Using FDP, Shift change

HTK438 Air Traffic Practices II 0+4 2.5

Collection of the Data Regarding the Problem; Data Processing; Generation of Model Inputs; Preparation of Air Traffic Scenarios; Modelling of the Scenarios; Testing, Verification and Validation of the Model; Generation of Model Outputs; Assessment of Model Outputs; Comparison of Developments and the Current or Hypothetical Situations; Preparation and Presentation of the Final Report.

HTKSJ402 Internship 0+2 5.0

Organization of the Air Traffic Control Unit; Control Zones of Air Traffic Control Unit; Coordination between Air Traffic Control Units; Agreement Letters; NOTAM and AIP; Familiarization to Traffic Characteristics of the Air Traffic Control Unit; Familiarization to Flight Procedures Used in the Air Traffic Control Units; Familiarization to Methods for the Air Traffic Management; Familiarization to CNS/ATM Equipment and Usage in the Unit; Phraseology Usage and Development; Familiarization to Team Work Shift Environment; Report Writing and Presentation.

HUK147 Air Law I (International Agreements and Aerodromes) 2+0 2.5
The Convention on International Civil Aviation: Air navigation, ICAO; Other Conventions and Agreements: The International Air Services Transit Agreement, The International Air Transport Agreement, Tokyo, Den Haag, Montreal, Bilateral agreements, Warsaw System 1929, Montreal Convention 1999, Rome 1933-1952, Montreal 1978, The Convention of Rome 1933; Aerodromes (ICAO Annex 14, Volume I, Aerodrome Design and Operations): General, Aerodrome data, Physical characteristics, Runway and visual aids for navigation, Aerodromes operational services, Equipment and installations.

HUK153 Fundamentals Concepts of Law 2+0 3.0
Social Rules and Law; Concept of Law and Legal Sanctions; Characteristics of Legal Rules; Sources of Law; Branchs of Law; Definition and Types of Legal Rights; Legal Capacity: As subject of rights, Capacity to act; Kinship; Domicile; Protection of Personality; Possession; Ownership; Obligation and Responsibility; Judiciary Systems.

HUK154 Commercial Law 2+0 3.0
Commercial Law Concept and Commercial Enterprise; Merchant; Commercial Name; Commercial Register; Unfair Competition; Commercial Reports; Merchant Assistant; Current Account; Partnership Concept; Definition and Elements of Partnership; Collective Partnerships: Establishment, Operation, Ending; Commanded Partnership: Establishment, Operation, Ending; Joint Stock Corporation: Establishment, Operation, Ending; Limited Company: Establishment, Operation, Ending.

HUK250 Air Law II (ATC Procedures and Flight Procedures) 2+0 3.0
Applicability of the Rules of the Air; General Rules; Visual Flight Rules; Instrument Flight Rules; Interception of Civil Aircraft; Air Traffic Services and Air Traffic Management; Airspace; Air Traffic Control Services; Flight Information Services; Alerting Services; Air Traffic System Capacity and Air Traffic Flow Management: Information, RNAV departure procedures and RNP based departures; Approach Procedures: General criteria, Approach procedure design, Arrival and approach segments, Missed approach, Visual manoeuvring-circling approach, RNAV approach procedures based on VOR/DME.

HUK252 Labor Law 2+0 2.5
History of Labor Law; Sources and Basic Principles of Labor Code: Employee, Employer, Representative to the employer; Work place; Contract of Service: Types and termination, Consequences of termination, Severance pay; Regulation of Work with regard to Workers; Groups to be Protected (Women, Children, Handicapped and Sentenced Workers); Health and Security at the Work Place; Working Time; Overtime Work; Night Work; Preparing, Completing and Cleaning at Work.

HUK418 Air Law 2+0 2.5
Introduction to Air Law; International Agreements and Organizations; Chicago Convention; International Civil Aviation Organization (ICAO); Warsaw Convention and Responsibility of Carrier; Hague Convention; Air Traffic Rights Agreement; Tokyo Convention; Europe Civil Aviation Conference (ECAC); Euro-control; Joint Aviation Authority (JAA); Turkish Civil Aviation Law; Aircraft: Concept and Types, Legal Nature of Aircraft, Identity, Nationality, Registration, Ownership; Aircraft Operator: Operator's responsibility, Operator's Insurance Commitment; Air Transportation Contract; Competition and Alliance Regulations in Air Transportation.

HUK458 Industrial Rights and Technological Development 3+0 3.0
Overall look at the intellectual systems; General principles of industrial rights; The categories of industrial rights; Patent, trademark; industrial design; Topographies of integrated circuits; Protection of microorganisms; Discussion on the "invention" concept; Background motivation of inventions; Use of inventions in daily life; The rights of the inventors; Special work on the patent system; The use of patent system in production by the engineers; Use of patent archives; Search for invention whether it is patentable or not; Preparing a patent file.

HYO105 Air Transportation Management 3+0 3.0
Economic Characteristics of the Airlines: General oligopolistic characteristics, Unique economic characteristics; Airline Management and Organizations; Airline Passenger Marketing: Development of the marketing concept; Forecasting Methods; Airline Pricing; Principles of Airline Scheduling; Principles of Airline Advertising; JAR-OPS Commercial Air Transportation: Certificates, Operators? responsibilities, Maintenance management, Maintenance records and log books, Accident /occurrence reporting

HYO113 Aviation History 2+0 2.0
A general look at the concept of "flying" since the ancient times; Flying in mythology and the birth of the idea of aircraft; A general look at the Aviation History around the world A general look at the Turkish Aviation History; A general look at today's aviation and its evaluation and interpretation; The birth and development of various aircraft (Balloon, Zeppelin, Helicopter, Airplane etc.); The personalities and events that played an important role in Aviation History around the world; The personalities and events that played an important role in Turkish Aviation History.

HYO114 Ergonomics in Aviation 4+0 5.0

Ergonomics; Work System: Workload, Strain; Human Anatomy; Human Performance and Limitations; Anthropometry; Cognitive Ergonomics: Situational awareness, Human error, Cognitive ergonomics applications in aviation; Fatigue; Environmental Factors: Air conditioning, Lighting, Noise, Vibration; Human-Machine System; Work and Workplace Design in Aviation Maintenance Activities; Lifting, Carrying, Force use; Work Tools and Instruments; Work Life and Safety; Ergonomics Evaluation of a Hangar; Occupational Accidents and Statistics in Aviation Maintenance Activities.

HYO115 Introduction to Civil Aviation 2+0 3.0

Historical Development of Civil Aviation: Origin, Development, Maturity and Deregulation period; Civil Aviation Activities; Airport: Definition of airside and landside facilities; International Civil Aviation Conventions; Importance of International Civil Aviation Organizations; National Civil Aviation System: Regulators, Organizations; Air Transportation in Turkey: Airlines, Airports; Air Transportation in the World: Privatisation, Alliances and Mergers.

HYO116 Aviation Legislation 3+0 4.0

Regulatory Framework: Role of the International Civil Aviation Organization (ICAO), Role of EASA, Relationship between various regulatory instruments; Details of Part-66; Details of Part-145; Air Operations: General information on EU-OPS, Air operators' certificate and its requirements; Certification of Aircraft, Parts and Appliances: General information on Part21, Documents to be carried; Continuing Airworthiness; Other Applicable National and International Requirements.

HYO120 Basics of Rescue and Fire Fighting 2+0 3.0

Introduction to Firefighting: Definition and history, Fire brigades; Fundamentals of Combustion and Fire; Types of Fire; Hazards in the Fire Place; Introduction to Extinguishing and Types of Extinguishing Materials Used; Personal Protective Equipment; General Knowledge of Tools and Materials Used in Fire Fighting; Preventive Measures in Buildings; Emergency Evacuation Plans; Casualty Transport Methods; Rescue and Fire Fighting in Aviation; Case Study and Analysis.

HYO122 Aircraft Materials I 2+1 3.0

Ferrous Materials: Properties and identification of common alloy steels used in aircraft, Heat treatment of alloy steels; Hardness, Tensile, Fatigue and Impact Tests for Ferrous Materials; Non-Ferrous Metals: Characteristics, properties of common non-ferrous materials used in aircraft, Heat treatment of non-ferrous materials; Hardness, Tensile, Fatigue and Impact Tests for Non-Ferrous Metals; Corrosion: Chemical fundamentals, Galvanic corrosion, Microbiological corrosion, Stress corrosion, Types of corrosion, Corrosion protection measures.

HYO221 Electrical Fundamentals I 3+0 3.0

Electron Theory: Distribution of electrical charges within atoms, molecules, ions, compounds, Molecular structure of conductors, semiconductors and insulators; Static Electricity and Conduction: Distribution of electrostatic charges, Coulomb′s Law; Electrical Terminology: Voltage, Current, Resistance, Conductance, Charge; Generation of Electricity; DC Sources of Electricity: Primary cells, Secondary cells, Cells connected in series and parallel; DC Circuits: Ohms Law, Kirchoff′s Voltage and Current Laws; Resistance/Resistor: Factors affecting resistance, Resistor colour code, Resistors in series and parallel; Power: Power formula.

HYO222 Electrical Fundamentals II 3+0 3.0

Capacitor; Magnetism; Inductor; AC Theory: Sinusoidal waveform, Phase, Period, Frequency, Calculations of voltage, current and power; Resistive, Capacitive and Inductive Circuits: Phase relationship of voltage and current in L, C and R circuits, parallel, series and series parallel, Impedance, Phase angle, Power factor and current calculations, True power, apparent power and reactive power calculations; Filters.

HYO223 Electrical Fundamentals Laboratory I 0+2 1.5

Electron Theory: Distribution of electrical charges within atoms, molecules, ions, compounds, Molecular structure of conductors, semiconductors and insulators; Static Electricity and Conduction: Distribution of electrostatic charges, Coulomb′s Law; Electrical Terminology: Voltage, Current, Resistance, Conductance, Charge; Generation of Electricity; DC Sources of Electricity: Primary cells, Secondary cells, Cells connected in series and parallel; DC Circuits: Ohms Law, Kirchoff′s Voltage and Current Laws; Resistance/Resistor: Factors affecting resistance, Resistor colour code, Resistors in series and parallel; Power: Power formula.

HYO224 Electrical Fundamentals Laboratory II 0+2 1.5

Capacitor; Magnetism; Inductor; AC Theory: Sinusoidal waveform, Phase, Period, Frequency, Calculations of voltage, current and power; Resistive, Capacitive and Inductive Circuits: Phase relationship of voltage and current in L, C and R circuits, parallel, series and series parallel, Impedance, Phase angle, Power factor and current calculations, True power, apparent power and reactive power calculations; Filters.

HYO225 Aircraft Maintenance Terminology I 3+0 4.0
Fundamentals of Aviation English: Word order; Location; Conjugation; Instructions; Procedures; Basic Sentence Structure; Word Endings: Prefixes and suffixes; Physical Characteristics; Dimensions; Purposes; Conjunctions; Actions; Conditions; Comparisons; Movement; Active and Passive; Processes; Functions; States; Failures; Damage; Connections; Units; Common Errors; Simplified English; Terminology of Maintenance.

HYO226 Aircraft Maintenance Terminology II 3+0 4.0
Introduction to the Use of Maintenance Manuals; Air Conditioning and Cabin Pressurization; Auto Flight; Instruments and Avionics Systems; Communications; Electrical Power; Equipment and Furnishing; Fire Protection; Flight Controls; Fuel; Hydraulic Power; Ice and Rain Protection; Landing Gear; Lights; Navigation; Oxygen; Pneumatic; Water and Waste System; Doors; Airframe and Structures; Power Plant.

HYO230 Aviation Security 3+0 5.0
History of Aviation Security; Analysis of Illegal Events in Civil Aviation; Importance of Aviation Security; Terminology Related to Aviation Security; Regulations on Aviation Security: National and international regulations; Security Areas: Access security, Terminal security, Aircraft security; Important Factors in Aviation Security: Physical factors, Human factors; New Trends in Aviation Security: Biometry, Full-body screening, Profilling; Competency Requirements for Aviation Security; Management of Unruly Passengers.

HYO304 Aircraft Manufacturing Technologies 3+0 4.5
Fabrication and Processing of Composite Materials; Plastic Forming: Hot and cold plastic forming; Plastic Forming for Forging; Extrusion and Rolling; Casting Process; Heat Treatments for Metal Alloys; Surface Erosion and Lubrication, Classification of Machine Tools; Tool Bit; Permanent Assembling: Welding, Riveting; Removable Assembling: Bolt fasteners.

HYO313 Electrical Machinery 3+0 3.0
Magnetism: Magnetic circuits, Care and storage of magnets; Transformers: Single, three phase and auto transformers; DC Motor and Generators: Construction, principles of operation, Characteristics, Efficiency, Starter generator; Three-Phase Circuits: Wye and delta connections, Power, voltage and current relationships; AC Motors and Generators: Single and three phase AC voltage generation, Revolving armature and revolving field type AC generators, Single, two and three phase alternators, Permanent magnet generator, Construction, principles of operation, characteristics of AC synchronous and induction motors both single and polyphase, Starting, Speed control and direction of rotation.

HYO315 Electrical Machinery Laboratory 0+2 3.0
Magnetism: Saturation point; Single, three phase and auto transformers; DC Motor/Generator: Constructions, Principles of operations, Series, shunt wound and compound motors/generators, No load and full load operation, Efficiency, Torque, Speed and direction of rotation of DC motors; Three-Phase Circuits: Wye and delta connections; AC Generators: Operation and construction of revolving field type three phase AC generator; AC Motors: Construction, Principles of operation and characteristics of AC synchronous and induction motors both single and polyphase, Speed control and direction of rotation, Methods of producing a rotating field: Capacitor, Inductor, Split pole.

HYO319 Aircraft Aerodynamics 3+1 4.0
Physics of the Atmosphere: International standard atmosphere (ISA), Application to aerodynamics; Airflow Around a Body: Boundary layer, Laminar and turbulent flow, Free stream flow, Relative airflow, Upwash and downwash, Vortices, Stagnation; Airfoil and Wing Terminology: Camber, Chord, Mean aerodynamic chord, Profile (parasite) drag, Induced drag, Center of pressure, Angle of attack, Wash in and wash out, Fineness ratio, Wing shape and aspect ratio; Thrust; Weight; Aerodynamic Resultant; Generation of Lift and Drag: Angle of attack, Lift coefficient, Drag coefficient, Polar curve, Stall; Airfoil Contamination due to Ice, Snow and Frost.

HYO334 Sustainable Aviation Technologies 2+0 2.0
Green Airports; Design and Construction Studies, Indoor air quality, Energy and material, Green engine; Combustor Design, Renewable energy sources in aviation; Alternative/Green Aviation Fuels, More electric aircraft (MEA); All Electric Aircraft (AEA); Thermal Management of Batteries, Life cycle design and life cycle assessment; Calculate of Life Cycle for Aviation Materials, Life cycle assessment of aerial vehicles.

HYO336 Aircraft Electrical Systems 4+0 4.0
Introduction to Electrical Power; Power Distribution Part; Emergency Power Generation; Distribution Components: Circuit protection, Fuses, Circuit breaker, Power relay, Current transformer; AC Generation: Inverters, Variable Speed Constant Frequency (VSCF) generator; CSD (Constant Speed Drive); Generator Control and Protection: Voltage regulation; Frequency Regulation; DC Generation; Transformer Rectifiers Unit; Batteries Installation and Operation; External Power; External Lights: Navigation, Landing, Taxiing, Ice lights; Internal Lights: Cabin, Cockpit, Cargo, Emergency lights.

HYO338 Electronic Instrument Systems 3+0 4.0

Electronic Instrument System; Electronic Displays: Principles of operation of common types of displays used in modern aircraft, including CRT, LED and LCD; Electrostatic Sensitive Devices: Special handling of components sensitive to electrostatic discharges, Awareness of risks and possible damage, Component and personnel anti-static protection devices; Software Management Control: Awareness of restrictions, Airworthiness requirements and Possible catastrophic effects of unapproved changes to software programmes; Typical Electronic/Digital Aircraft Systems: General arrangement of typical electronic/digital aircraft systems and associated BITE.

HYO406 Helicopter Theory and Systems 3+0 4.5

Fundamental Concepts: Angular velocity, Tangential velocity; Aerodynamic concepts; Blade and Propeller; Forces Acting on a Blade During Rotation: Flapping, Dissymmetry of lift; Articulations: Flapping, dragging, feathering; Flight Control Systems; Tail Rotor: Torque Effect of Main Rotor; Air Flow Effect Passing Through a Blade Under Different Flight Conditions; Autorotation; Helicopter Flight; Airspeed Limitations; Airframe Systems; Landing Gears.

HYO409 Case Studies in Aviation Safety 2+0 3.0

Classification of the Factors Affecting Aviation Safety; Flight Operation-oriented Accidents: Flight crew, Communication and procedural errors; Aircraft-oriented Accidents: Design and material failures; Maintenance-oriented Accidents: Personnel and procedural errors; Airport/Air Traffic Control-oriented Accidents: Midair and runway collisions; Accidents due to Meteorological and Geographical Conditions; Security-oriented Accidents: Terrorist attacks and security errors.

HYO411 Vibration Analysis in Aircrafts 2+1 3.0

Basic Concepts: A short history of mechanical vibrations; Importance of mechanical vibrations, What is vibration; Kinematics of vibrations: Basic elements of vibrations, Degree of freedom, Types of vibrations, Natural frequencies; Classification of vibrations, Linear and nonlinear vibrations, Clear and random vibrations; One degree-of-freedom vibration; Multi degree-of-freedom vibration; Fourier series; Laplace transformation; Isolation of vibration; Resources of aircraft vibrations and using vibration analysis systems; Vibration indication in aircraft: Devices in indications and indication techniques, Data Analysis, Adjudication.

HYO413 (Eng) Aircraft Systems Design 2+2 4.5

Project Requirements; aerodynamic design: airfoil, wing parameters, fuselage and wing configurations, control surfaces, performance and stability analysis; structural design: material, strength analysis and testing, wing and fuselage construction; propulsion : engine, propeller, performance analysis and testing: Avionics and Control; control parameters, control units and integration; optimization of all parameters according to the Project requirements and integration, manufacturing: prototype and flight testing; Project presentation and reporting.

HYO415 Academic and Technological Progresses in Aviation 3+0 4.5

Introduction; Academic Studies; Propulsion in the Current Century: Conventional and unconventional systems; Powerplants: Materials, Cooling, Cycles, Combustion chambers; Airframe Systems: Winglet technology, BWB; Alternative Fuels: Hydrogen, Cryoplane, Model 304 hydrogen fuelled jet engine, Biodiesel; Subjects Related to Fuel Consumptions: Cost index, Continuous descent approach, Lower cruise speed, Weight effect; Environmental Effects: Emissions, Noise; Technological Subjects: New generation commercial and military aircraft, Afterburner, VSTOL, SR71.

HYO416 Reciprocating Engine Theory, Systems and Maintenance 3+0 3.0

Reciprocating engine cycles: General information, Ideal reciprocating engine cycles, Otto cycles, Diesel cycles; Engine performance calculation methods; Energy analysis of reciprocating engines; Engine Characteristics: Loss analyses, Energy balance, Effects of engine parameters on engine performance; History of Reciprocating Engines; Operational principles of reciprocating engines: Four-stroke engines, two-stroke engines, Comparison of engines, Reciprocating engines in aircrafts; Reciprocating engine systems: Lubricating systems, Fuel systems, Ignition systems, Indicating systems; Vibrations: Basic Concepts, Effects of vibrations on engine, Availability in troubleshooting; Maintenance of reciprocating engines: Categorization of maintenance, Using maintenance methods in reciprocating engines with max. 450 Hp, Troubleshooting; Engine Testing: Power measurement, Pressure measurement, Temperature measurement.

HYO417 Crew Resource Management 3+0 4.5

Fundamentals of Crew Resource Management; Components of Crew Resource Management Skills: Problem solving and decision making, Communication and interpersonal skills, Situational awareness, Leadership and teamwork, Workload management, Stress management, Critique; Threat and Error Management; Evaluation of Crew Resource Management Skills: Non-technical skills, Texas university behavioral markers system; Line Oriented Flight Training; Culture and Crew Resource Management; Case Studies.

HYO419 Modern Avionic Systems 2+0 2.5

Integrated Modular Avionics (IMA): Functions of typically integrated IMA modules and others systems: Core System; Network Components; Cabin Systems: Data/Radio communication, In-flight entertainment system; Access to Predeparture/Departure Reports; E-mail/Intranet/Internet Access; Passenger Database; Cabin Core System; In-flight Entertainment System; External Communication System; Cabin Mass Memory System; Cabin Monitoring System; Information Systems: Air Traffic and Information Management Systems and Network Server Systems; Aircraft General Information System; Flight Deck Information System; Maintenance Information System; Passenger Cabin Information System.

HYO420 Electromagnetic Environment 2+0 2.5

Electrostatic Fields: Coulomb's law, Gauss's law, Electric potential and dipole; Magnetic Fields: Ampere's law and applications, Magnetic flux density, Maxwell's equations for static EM Fields; Maxwell's Equations: Faraday's law, Maxwell's equations in final forms, Time-harmonic fields; Electromagnetic Wave Propagation: Wave propagation in lossy dielectric, Planewaves in lossy dielectric, free space and good conductors; Effects of the Following on Maintenance of Electronic System: EMC-Electromagnetic Compatibility, EMI-Electromagnetic Interference, HIRF-High Intensity Radiated Field; Lightning/Lightning Protection.

HYO421 Automatic Flight Systems 3+0 3.0

Fundamentals of Automatic Flight Control: Working principles and current terminology, Command signal processing; Modes of Operation: Roll, pitch and yaw channels; Yaw Dampers; Stability Augmentation System in Helicopters; Automatic Trim Control; Autopilot Navigation Aids Interface; Autothrottle Systems; Automatic Landing Systems: Principles and categories, Modes of operation (approach, glideslope, land, go-around), System monitors and failure conditions.

HYO422 Human Factors 3+0 3.0

Fundamentals of Aviation Safety: Concepts of risk and safety, Accidents and incidents, Measurement of safety; Factors Affecting Aviation Safety; Human Performance and Limitations; Social Psychology; Factors Affecting Performance; Physical Environment; Tasks; Communication; Human Error and Error Management Models; Hazards in the Workplace; Maintenance Resource Management; Case Studies on Aircraft Maintenance.

HYO425 Safety Management System 2+0 3.0

Safety Management System: Hazard, Risk; Safety Management Fundamentals; Safety Culture; Safety Performance Management; Safety Data Collection; Safety Analysis; State Safety Programme; Safety Management Systems: Safety management system framework, Safety policy and objectives, Safety risk management, Safety assurance, Safety promotion.

HYO428 Aviation Meteorology 3+0 3.0

Atmosphere: Temperature, Humidity, Density; Pressure: Pressure systems (low pressure, high pressure); ICAO Standard Atmosphere; Wind: Jetstream; Types of Clouds and Meteorological Events (rain, fog, etc); Visibility: Meteorological events affecting runway visibility; Air Mass and Fronts; Icing; Thunder Storms; Turbulence; Atmospheric Circulation; Meteorological Documentations and Reports (METAR, TAF, SPECI, TREND).

HYO432 Customer Relationship Management in Aviation 3+0 6.0

Definition and Scope of Customer Relationship Management; Customer Relationship Management and Marketing Approaches; Marketing Mix and Customer Relationship Management; Elements of Customer Relationship Management; Customer Relationship Management Implementation Phases; Responsibilities of Customer Relationship Management; Organizational Culture and Customer Relations; Customer Orientation; Customer Value; Service Quality in Aviation Business; Customer Services in Aviation Business; Customer Satisfaction Measurement in Aviation Business; Customer Loyalty Programs in Aviation Business; Case Studies in Aviation Business.

HYO434 Aviation Management Practices 0+6 10.0

Scientific Research and Its Characteristics; Scientific Research Methods; Rules of Academic Writing; Ethics in Scientific Research; Academic Reading; Literature Review; Selecting Research Area; Defining The Research Problem; Designing The Research; Determining Sample; Collecting Data; Analyzing Data; Reporting The Research Findings; Discussing The Research Findings; Presentation.

HYO436 Flight Controls 2+0 2.0

Overview of Control Systems; Primary Controls: Aileron, Elevator, Rudder, Spoiler; Trim Controls; Pitch Trimming; Versine Signal; Active Load Control; High Lift Devices; Lift Dump and Speed Brakes; Torque Limiting; Artificial Feel and Centering; Flutter Damping; Yaw Damper; Mach Trim; Rudder Limiter; System Operation: Manual; Gust Locks; Stall Warning and Protection Systems; Balancing and Rigging; Fly by Wire.

HYO451 General Aviation 3+0 4.5

Concept and Content of General Aviation; Development of General Aviation; Regulations in General Aviation; Practices of General Aviation in the World; General Aviation in Turkey: Training facilities, Air taxi operations, Aircraft rent, Corporate aviation, Personal and private purposes in general aviation, Sport, Demonstrational and promotional purposes in general aviation; Types of Aircraft Used in General Aviation; Future of General Aviation.

İKT151 Economics 3+0 3.0

Basic Economic Concepts; Production Process; Optimal Consumer Behavior; Demand; Supply; Equilibrium Price; Market Types; Determination of Factor Prices; National Product; Nominal and Real National Income; Introduction to Monetary Theory; Factors Determining Fluctuation and National Income: Consumption expenditures, Investment expenditures, Employment; International Economic Relations: International mobility of goods and services, International mobility of factors of production; Economic Growth and Development.

İKT151 (Eng) Economics 3+0 3.0

Basic Economic Concepts; Production Process; Optimal Consumer Behavior; Demand; Supply; Equilibrium Price; Market Types; Determination of Factor Prices; National Product; Nominal and Real National Income; Introduction to Monetary Theory; Factors Determining Fluctuation and National Income: Consumption expenditures, Investment expenditures, Employment; International Economic Relations: International mobility of goods and services, International mobility of factors of production; Economic Growth and Development.

İKT356 (Eng) Engineering Economics 3+0 4.5

Principles of Engineering Economics; Time Value of Money; Investment Problems; Capital Formation by Installments; Capital Formation; Consumer Loans; Payments with Equal Installments; Basic Evaluation Techniques: Present Worth Method; Internal Rate of Return Method; Comparison of Alternative Investment Decisions; Breakeven Analysis; Replenishment Investments.

İLT201 (Eng) Interpersonal Communication 3+0 4.5

Verbal Communication; Speaking Skills As Dimension of Interpersonal Communication; Listening Capabilities As Dimension of Interpersonal Communication; Non-Verbal Communication; Signs And Meanings; Stress And Stress Management; Group; Group Dynamics; Small Group Characteristics; Persuasion; Speaking And Listening; Time And Time Management; Interpersonal Communication; History of Communication Research.

İLT307 Communication 3+0 3.0

Communication: Description of communication, Components of communication process; Functions and Types of Communication; Introduction to Empathic Communication: Description of empty, History of empty, Difference between empty and sympathy; Transactional Analyse: Parent personality, Child personality, Adult personality; Process of Empathic Communication: Components, Skill of listening; Improved of emphatic skill; Intellectual Background of Communication: Importance of listening and understanding; Organizational Communication: Communication process in organizations; Types of Communication in Organizations: Verbal communication, Non-verbal communication, Written communication; Preparation of CV; What' s cv?, Examples of cv; Body Language.

İLT419 Body Language and Diction 2+0 5.0

Research on Body Language and Concepts of Body Language; Face-to-Face Relations; Relation between Human and Society; Relation between Body and Objects; Relation between Body and Space; Orientation Exercises; Diction Exercises: Intonation, Stress, Articulation; Use of Voice: Control of sound volume, tone color and breath; Speech Control; Movements of Head and Eyes; Facial Expressions; Use of Hands and Arms; Use of Feet and Legs; Harmony in Body Use; Relation between Speech and Body Use; Harmonious Use of Body, Space and Objects.

İNG117 (Eng) English Speaking Skills I 6+0 4.0

Listening: Identifying main ideas, Listening for details, Predicting content; Speaking: Expressing agreement or disagreement, Asking for repetition, Keeping a conversation going by adding information; Expanding Knowledge of Frequently Used Words and Phrases; Pronunciation: Recognizing and practicing consonant and vowel sounds, Studying problematic sounds; Online Practice; Grammar; Presenting new structures and tenses.

İNG118 (Eng) English Speaking Skills II 6+0 4.0

Listening: Understanding keywords to identify a topic, Listening for specific words in context to figure out their meanings; Speaking: Asking follow-up questions to keep a conversation going, Asking for clarification to make sure of correct comprehension, Conducting an interview, Role play practices; Pronunciation: Recognizing and practicing consonant and vowel sounds, Studying problematic sounds; Online Practice.

İNG125 (Eng) Aviation English I **6+0 4.0**

Introduction Radio Communication and Non-routine Situations: Pre-flight checks, Delays and problems, Local conditions; Ground Movements: Airport markings and airside vehicles, Taxiing and holding, Weather problems; Departure, Climbing and Cruising; Warning About Hazards; Encountering Traffic; En-route Events: Operational situations, Unusual events, Medical situations; Contact and Landing: Approach and landing problems, Landing, Landing incidents, Circuit joining, Landing hazards; Taxiing; Getting to the Gate; Clear Communication.

İNG127 (Eng) English I **4+0 4.0**

Introductions, a New Business; A Business Problem; Business Travel; Food and Entertaining; Buying and Selling; Buying Luxury Brands; A Family Business; Advertising on the Internet; A Joint Venture; Communication, E-mail and Overtime; Avoiding Misunderstandings; Jobs and Working Fields; Work and Leisure Activities; Where You Live and Related Problems; A Place You Know Well; Dining Etiquette; Buying a Product; Types of Colleagues; Starting a Business; Marketing a New Product; Successful Companies; Using the Internet; Plans for the Future; Company Cultures; Skills You Need for a Job.

İNG128 (Eng) English II **4+0 4.0**

A Work Day, Job Titles and Job Descriptions: Corporate culture, Describing changes in a company, Asking questions about companies and jobs; Company History; Describing Equipment, Describing Problems with Equipment; Processes and Procedures; Distribution and Delivery; Information about Orders and Deliveries; Advertising and Marketing; Planning; Transport; A Travel Anecdote; Business Travel; Out-of-Office Activities.

İNG130 (Eng) Aviation English II **6+0 4.0**

Runway Incursion; Ground Operations; Lost; Co-ordinates; Navigation; Technology; Flight Control Systems; Instrument Blackout; The Instrument Panel; Animals: Wildlife on the ground, Bird strike; Security Measures; Cargo; Saying Intentions; Gravity; Air Race; Hydraulic Loss; Maneuvering an Aircraft; Health Problems On-board: Medical Emergency; Expressing Cause and Effect; Making Suggestions.

İNG145 (Eng) Business English I **2+0 2.0**

Writing Skills: Preparing CV, Writing a cover letter, Writing a letter of intention, Writing formal e-mails for different purposes, Reply to formal e-mails, Making arrangements via e-mail, Exchanging information via e-mail, Preparing agenda/notes for a meeting; Speaking Skills: Introducing oneself, Making small talk, Keeping a conversation going, Preparing for a job interview, Talking about place of work, Introducing the city to visitors, Making phone calls to make arrangements, Making phone calls to change arrangements, Making phone calls to exchange information.

İNG146 (Eng) Business English II **2+0 2.0**

Writing Skills: Note-taking during the meetings, Reporting the meeting notes, Writing an outline for presentation, Preparing the meeting speech, Creating the meeting agenda/flow, offers and proposals for business negotiations, Preparing the text for business negotiations; Speaking Skills: Attending and speaking at a meeting, Capturing the attention of the audience and presenting an idea, Chairing a meeting, Summarizing meeting discussions and ending the meeting, Preparing for a business negotiation, Speaking during the negotiation and presenting an opposite opinion, Ending the negotiation positively/negatively.

İNG195 (Eng) English for General Purposes I **4+0 3.0**

Sentence Structures in English: Statements, interrogatives and imperatives, Subject-verb agreement; Plural Nouns; Pronouns: Subject, object and possessive pronouns; Numbers; Countries and Nationalities; Telling the Time; Adverbs of Time; Tenses: Present simple, Present continuous, Past simple and be Going to; Adjectives; Possessive Adjectives; Prepositions of Time; Comparative Adjectives; Superlative Adjectives; Can/Can't; Countable and Uncountable Nouns; Reading, Writing and Listening Activities; Communicative Activities.

İNG196 (Eng) English for General Purposes II **4+0 3.0**

Sentence Structures and Building Sentences: Interrogative, imperative and declarative sentences; Adverbs of Time: Yet, Just, Already, For, Since; Tenses: Present tense, Past tense, Perfect tense, Future tense; Prepositions of Time and Place; Passive Voice; Modals Verbs of Obligation: Have to, Must; First and Second Conditional; Reported Speech; Relative Clause; Conjunctions; Listening, Reading and Writing Practices.

İNG209 (Eng) English Language Skills III **3+0 3.0**

Listening Skills: Listening for making inferences, Listening for causes and effects, Taking notes on causes and effects, Listening for time markers, Identifying fact and opinion, Listening for numbers and amounts, Inferring a speaker's attitude, Listening for signposts; Speaking Skills: Taking conversational turns, Giving advice, Asking for and giving reasons, Giving and supporting opinions, Giving a short presentation, Leading a group discussion, Agreeing and disagreeing.

İNG210 (Eng) English Language Skills IV 3+0 3.0
Reading Skills: Developing dictionary skills, Developing note taking skills, Identifying main ideas and supporting details, Distinguishing facts from opinions, Using a graphic organiser, Using a timeline, Scanning a text, Identifying salient technical terms in texts; Writing Skills: Using descriptive adjectives, Writing descriptive paragraphs, Writing summaries, Writing a personal response, Writing an opinion essay, Writing a narrative essay, Stating reasons and giving examples, Writing cause and effect essay, Writing an argumentative essay, Producing basic texts with vocational content.

İNG219 (Eng) English Speaking Skills III 4+0 2.0
Introduction: Language and RT communications in aviation, Examples of miscommunication; Hazards on the Ground: Ground movements, Communication on the ground, Runway incursions; En route: Environmental threats, Level busts, Decision-making; Approach and Landing: Approach and landing incidents, Handling technical malfunction, Reducing approach and landing risks; Environmental threats.

İNG220 (Eng) English Speaking Skills IV 4+0 2.0
Introduction: Plain English for communication between pilots and air-traffic controllers; Weather Problems; Warning about Hazards and Risks; Runway Incursions; Flight Control Systems; Animals on the Ground and Bird Strikes; Medical Emergency; Fire Risk; Meteorology; Landing Gear and Braking; Fuel and Icing; Pressure; Unlawful Interference; Checking and Asking for an Alternative; Airport Markings and Airside Vehicles.

İNG229 (Eng) English III 4+0 3.5
Ideas about Careers, Talking about Career Plans; Deciding on a Successful Candidate for a Job; Talking about Shopping Habits; Negotiating and Reaching an Agreement; Types of Companies; Discussing Ideas; Causes of Stress and Stressful Jobs, Suggesting Ways of Reducing Stress of Staff; Corporate Entertaining; Ideas about Marketing; Planning; Qualities and Skills of a Good Manager; Managing Conflict; Public and Private Sector Companies; Discussing Favorite Products.

İNG230 (Eng) English IV 4+0 4.0
Human Resources, Staff Development and Training: Marketing, Entering the market, Launching a product, A stand at a trade fair; Entrepreneurship, Starting a Business, Financing a Start-up; Expanding into Europe, Presenting Your Business Ideas; Business Travel Abroad: Arranging business travel, Business conferences, Business meetings; Innovation Management; Customer Relations; Customer Satisfaction and Loyalty; Social Media and Business Relations; Staff and Customer Surveys.

İNG235 (Eng) Aviation English III 4+0 4.0
Fire Risks/Causes and Smoke-jumpers Vocabulary; On-board Fire; Airport Fire Fighting (ARFF) Trucks; Meteorology; Microburst; Stormy Approach; Weather Words; Airport Disruption; Landings: Touchdown, Letting down a VIP, Undercarriage; Fuel Problems: Fuel icing; Aviation and Global Warming; Pressure, Depressurization; Emergency Descent; Air Security; Air Rage; Suspicious Passengers; Unlawful Interference.

İNG307 (Eng) Aviation English I 4+0 5.0
Aviation Alphabet and Numbers; Aviation Industry; Civil Aviation Organizations and Associations; Air Transportation; Airport Design; Environmental Impacts of Airports; Aircraft Accidents; New Aircraft Design; Air Cargo Industry; Airline Marketing; In-flight Entertainment; Global Alliances; Airline Mergers.

İNG308 (Eng) Aviation English II 4+0 5.0
Air Transportation System; Social and Economic Impacts; Elements of Air Transportation: Regulatory organizations, airlines; airports, ATC services, catering and ground handling services; Liberalization and Privatization Trends in Air Transportation; International Economic Regulations; Airline Management and New Management Approaches; Airline Marketing; Airline Human Resources; Airport System and Environmental Impacts: Noise, air pollution; Air Cargo Industry; Future of Air Transportation in Turkey and in the World.

İNG309 (Eng) English Language Skills V 3+0 3.0
Listening Skills: Identifying syllable stress, Identifying sentence stress, Listening for details, Understanding bias in a speech, Listening for signal words and phrases, Understanding field-specific terms in a lecture, Understanding authentic dialogues related to the field; Speaking Skills: Speaking with syllable stress, Checking for understanding, Speaking with sentence stress, Giving presentation on vocational subjects, Taking part in a debate, Changing the topic, Linking words with vowels, Giving an impromptu speech.

İNG310 (Eng) English Language Skills VI 3+0 3.0
Reading Skills: Understanding compare and contrast organisation, Recognising bias in texts, Understanding the purpose of quoted speech, Identifying counterarguments, Identifying refutations, Understanding texts including field specific

terminology; Writing Skills: Writing a descriptive essay, Writing a compare and contrast essay, Writing a cause and effect essay about vocational subjects, Writing an opinion essay about vocational subjects, Developing counterarguments, Writing a persuasive essay, Writing a problem solution essay, Producing documents with vocational content.

İNG321 (Eng) English Speaking Skills V 4+0 2.0

Introduction: English needed to communicate in non-routine and emergency situations during flight operations; Describing a Picture of an Aviation-related Incident; Studying Vocabulary to Communicate Effectively on a Wide Variety of Familiar and Unfamiliar Topics; Near Miss; Special Flights, VIP Flights; Delays; Belly-landing; On-board Fire; Pilot Incapacitation; Ditching; Wind and Turbulence; Icing and Storms.

İNG322 (Eng) English Speaking Skills VI 4+0 2.0

Introduction: English needed to communicate in non-routine and emergency situations during flight operations; Listening Texts Involving Radiotelephony Exchanges with a Mixture of Aviation English and Plain English; Depressurization; Passenger-related Problems; Bomb Scare; Problems Deriving from Passengers; Aircraft Mechanical and Electrical Breakdown; Volcanoes; Dangerous Goods; Collisions; Airfield and Navigation Equipment Failure; Airfield Activities.

İNG329 (Eng) Aviation English IV 60+0 3.0

Near Miss Scenarios; Special Flights; VIP Flights; Delays; Belly-landings; Bird Strikes; Cargo Flights; On-board Fire Situations; Ground Movement Incidents; Forms of Runway Accidents; Pilot Incapacitation; Ditching and Floatation; Animals at the Airports; Animal Problems; Icing Problems; Wind and Turbulence; Meteorological Problems; Windshear; Microbursts; Storms and Problems.

İNG331 (Eng) Aviation English V 60+0 3.0

Pressure in the Cabin/Depressurization; Passenger Problems; Bomb Threats and Bomb Scare; Take-off Incidents; Lost Aircrafts; Aircraft Breakdown-mechanical; Aircraft Breakdown-electrical; Volcanoes; Dangerous Goods Forbidden in the Aircrafts; Collisions; Fuel Problems; Airfield Activities; Aerodrome/Airfield Environment; Airfield and Navigation Equipment Failure; Ground Services.

İNG401 (Eng) Advanced English I 4+0 3.0

Globalization: Brands, Store brands, Brand loyalty; Travel, Videoconferencing; Managing Change Successfully: Advertising, Internet advertising, Shock advertisements; Financial Reporting; Employment: Human capital planning; International Trade: International markets, Getting into new markets, Competition, Competition advantages, Competitors, Breaking up monopolies; Innovation; Organization; Money and Global Trends; Business Ethics; Business Strategies.

İNG402 (Eng) Advanced English II 4+0 3.0

Communication, Corporate Communication, Twitter; International Brands; Building Business Relationships; Successful Strategic Change; Job Satisfaction: A job satisfaction survey; Comparing Similarities and Differences Between Two Companies; Risk Management: Reputational risk; Crowdfunding; Customer Services; E-commerce; Team-building; Raising Finance; Customer Complaints; Crisis Management: Assessing risk; The Future of Management and Business.

İNG423 (Eng) English Speaking Skills VII 4+0 2.0

Pronunciation Activities: Stress, rhythm and intonation, First language and regional variation; Fluency Activities to Speak at Length with a Natural Effortless Flow; Studying Comprehension of Linguistic and Cultural Subtleties; Emergency Scenarios: Description of an emergency presented in a visual or an animation, Emergency prevention strategies, Emergency response procedures, Possible incidents.

İNG424 (Eng) English Speaking Skills VIII 4+0 2.0

Situational Awareness; Flight Preparation; Using Correct Phraseology; Understanding and Responding to International Accents; Discourse Management Strategies; Note-taking and Readback from Live ATC-Pilot Dialogues; Studying Clues of Verbal and Non-verbal Interactions Between Pilots and Air Traffic Controllers; Activities for Improving Ability to Communicate in Plain English to Make a Clear Contrast with the Phraseology Suitable for Routine Situations.

İSG401 Occupational Health and Safety I 2+0 2.0

Overview of Occupational Health and Safety: Scope, Importance, Related concepts; Workplace Accidents and Occupational Diseases: Reasons, Precautions, Costs; Occupational Health and Safety: Responsible institutions, Problems in applications, Legal basis for occupational safety, Legislation, Regulations for employers; Legal Responsibility of Employers for Workplace Accidents and Occupational Diseases: Liability concept, Regulations for employer responsibility.

İSG402 Occupational Health and Safety II 2+0 2.0

Compensation Claims for Occupational Health and Safety: Compensation types; Legislation for Employers not Abide by Occupational Health and Safety Instructions: Administrative sanctions, Criminal sanctions, Investigations for workplace

accidents; Organization in Workplace for Occupational Health and Safety: Employee representative, Obligation for constituting board for occupational health and safety, Workplace health and safety board; International Legislation for Occupational Health and Safety: International legislation, European legislation, Comparison of national and international legislation.

İSN309 Mass Media 3+0 3.0

Concept of the Mass Media; Emergence of Mass Media; Historical Development of Mass Media Research; Liberal and Critical Approaches to Mass Media; Optimistic Approach to Mass Media: Marshall McLuhan; Pessimistic Approach to Mass Media: Herbert Marcuse; Quasi Optimistic Approach to Mass Media: Alvin Toffler; Ideological Function of Mass Media; Globalization and Consumer Society; Advertising and Consumer Society; News and Reality; Myth Production in Mass Media: Advertising, TV, News; Discussions on Information Society: Internet and the Problem of Participation; Media and Women; Media and Democracy.

İSN409 Organizational Communication 3+0 4.5

Communication and Models; The Functions of Communication; Perception and Persuasive Communication; Conformity and Obedience; The Goals and Functions of Communication in Organizations; Communication Forms in Organization; The Importance of Communication in Organization; Preventative Factors Related to Effective Communications in Organization and Conflict; Effective Speaking and Listening; Public Relations as a Form of Organizational Communication; The Techniques of Writing Reports.

İSP151 (Spa) Spanish I 4+0 4.0

Introduction: Greeting, Giving information; Gender in Nouns and Adjectives; Verbs in the Present Tense; Demonstrative Adjectives and Pronouns; Plural Forms of Nouns and Adjectives; Description: House, Objects, Numbers; Asking Questions; Asking for Directions and the Time; Verbs in the Present Progressive Tense; At a Restaurant: Ordering, Asking for the Bill, Talking about Preferences; Describing People; Reflexive Verbs; Shopping: Cost, Likes and Dislikes, Quantity; Invitation: Accepting, Refusing; Gerunds; Seasons.

İSP152 (Spa) Spanish II 4+0 4.0

The Past: Near and remote past, Prepositions, Indefinite pronouns; The Future: Future plans, Making a phone call, Comparison; The Future Perfect Tense; Habits in the Past; Regular and Irregular Verbs; Senses; Some Grammar Rules: Obligation, Personal pronouns, Passive construction, conjunctions; Reading Texts: Biography, Narration, Picture stories.

İST244 (Eng) Engineering Probability 3+0 5.0

Combinatorial Analysis: Permutations, Combinations; Axioms of Probability: Sample Space and Events; Conditional Probability and Independence: Bayes' Formula, Independent Events; Discrete Random Variables: Expected Value, Variance, the Bernoulli and the Binomial Random Variables, the Poisson Random Variable, the Geometric Random Variables, Properties of the Cumulative Distribution Function; Continuous Random Variables: the Uniform Random Variable, Normal Random Variables, the Normal Approximation to the Binomial Distribution, Exponential Random Variables; Jointly Distributed Random Variables: Independent Random Variables, Sums of Independent Random Variables, Order Statistics; Conditional Expectation: Computing Probabilities by Conditioning, Conditional Variance; Conditional Expectation and Prediction; Moment Generating Functions; the Chebyshev's Inequality and the Weak Law of Large Numbers; the Central Limit Theorem; the Strong Law of Large Numbers; Other Inequalities: the One-sided Chebyshev Inequality, the Chernoff Bounds, the Jensen's Inequality; the Poisson Process; Markov Chains.

İST409 Mathematical and Statistical Methods in Decision Making 4+0 4.0

General Information on Statistics; Descriptive Statistics: Tables, Graphs, Measures, Central tendency; Measures of Dispersion; Probability; Random Variables and Probability Distributions for Random Variables; Discrete Random Variable and Probability Distributions for Discrete Random Variables; Continuous Random Variable and Probability Distributions for Continuous Random Variables; Sampling; Sampling distributions; Point Estimation; Interval Estimation; Hypothesis Testing; Correlation; Regression; Some Nonparametric Tests.

İŞL101 Introduction to Business 3+0 4.5

Concept of business: Economic systems, Production factors, Needs and wants, Demand, Goods and services, Consumption and consumer; Success criterion: Efficiency and related concepts; Characteristics of Businesses: Goals and functions of businesses, Relationships with the environment and responsibilities of businesses, Grouping of businesses; Foundation of businesses: Foundation decision, Determining plant location; Extending Businesses; Business ethics and social responsibility (Ethical and moral rules); Concept of management; Functions of management; Human resources management; Functions of human resources management; Principles of marketing.

İŞL102 Management and Organization 3+0 4.0

Management: Definition, Significance of Management for Business Enterprises; Development of Management Science: Classical, Behavioral and Modern Theories; Management Systems; Decision Making and Planning; Concepts of Authority

and Power: Characteristics of Authority and Power, Delegation of Authority; Organization: Characteristics and Principles; Comparison of Organization and Planning Processes; Departmentalization; Staffing: Fundamentals, Staffing Process; Leading: Fundamentals, Leading Process; Organizational Structures: Development and Varieties of Organizational Structures; Controlling: Fundamentals and Controlling Process.

İŞL209 Business Management 2+0 2.0

Business and Basic Concepts, Aims and Relationship with Environment of Management: Basic concepts, Business' aims, Importance in economical structure, Difference between manager and entrepreneur; Classification of Businesses: Dimension, Property, Legal structure etc.; Establishment Studies, Dimension and Capacity: Foundation stages, Location, Dimension definion, Capacity; Functions of Business: Management, Organization, Control, Planning; Organization Operation Process: Leadership and management, Strategical management, Change, Groups, Motivation.

İŞL301 Human Resources Management 3+0 4.0

Human Resources Management: Development, Goals and Principles; Functions of Human Resources Management: Human resources planning; Recruitment, Performance Appraisal, Training, Orientation and Development; Wage and Salary Administration; Career Management; International Human Resources Management; Technology in Human Resources Management.

İŞL321 Applied Entreprenneurship 3+1 5.0

Introduction to Entrepreneurship: Basic Concepts; Climate for Entrepreneurship: Economic Perspective: Opportunity Recognition and Idea Creating: Theory and practice; Feasibility Analysis; Industry and Competitive Analysis; Marketing Plan: Theory and practices; Operations Plan: Theory and practices; Management Plan: Theory and practices; Financial Plan: Theory and practices; Business Model Development; Financing and Funding for Entrepreneurial Business; Marketing Issues in Entrepreneurial Business; Franchising and Buying an Existing Business.

İŞL406 Strategic Management 3+0 4.5

Fundamental Principles of Strategic Management: Vision, Mission Strategy, Politics; Strategic Management in Corporations: Definition of strategic management, Principles of Strategic Management, Nature of Strategic Management; Fundamental Principles of Strategic Management; Strategic Management Processes; Strategic Management: Developments from 1960 to 1990; Process of Development in Strategy; Purposes of Strategy; Analysis of External Environment; Analysis of Corporate.

İŞL417 Management Information Systems 3+0 4.5

Concept of Information Systems: Elements of Information Systems, Classifications of Information Systems; Information Systems in Business Management: End User Information Systems, Office Automation Systems, Electronic Communication Systems, Teleconferance Systems, Electronic Printing Systems, Process of Image Systems; Business Information Systems: Marketing Information System, Production Information System, Human Resource Information System, Accounting Information System, Financial Information System; Decision Support Systems: Models of Decision Support Systems, Executive Information System, Artificial Intelligence and Expert Systems; Global Dimensions: Global Data, Security and Ethic Problems in Information Systems, Computer Crime.

İŞL421 Entrepreneurship 2+0 3.0

Importance and Evolution of Entrepreneurship: Entrepreneurship within the framework of Manager, Concepts of Entrepreneur, Employer, Boss and Investor; Leadership in Entrepreneurship and Importance of Management Characteristics; Characteristics of Entrepreneurship; Changing Views of Entrepreneurship; General Evaluation of Entrepreneurship in Turkey: Change and Entrepreneurship; Entrepreneurship before and after the Republic; Female Entrepreneurs.

İŞL454 (Eng) Management of Technology 3+0 4.5

Structures of Management Organizations; Organization of Project Groups; Project Management and Its Principles; Management Functions; Employee's Organization; Basic Principles in Project Management and Formation of Project Groups; Time Management; Project Planning; PERT Technique; GANTT Charts and Other Presentation Techniques; Pricing and Cost Control.

İŞL475 Techno-Entrepreneurship 3+0 4.0

Techno-Entrepreneurship: Definitions, Concepts, History; Creativity and Innovation: Concepts, Innovation types, Situation in Turkey and world; Idea to Market: Emergence and commercialization process of business idea, road maps; Entrepreneurial Marketing: Concepts, strategy and implementation; Managerial Issues: Performance, Team work, Strategic orientations; Legal Issues: Patents, Copyrights, Law and regulations; Financial Issues: Sources of funding, Sponsorships; Characteristics of Techno-Entrepreneur: Background, Education, Personality; Sustainability and Innovator's Dilemma: Concepts, Reasons of failure; Future of Techno-Entrepreneurship: Trends.

İTA255 (İta) Italian I 3+0 4.0
Sounds in Italian; Masculine and Feminine Definite Articles; Personal and Demonstrative Pronouns; Use and Conjugation of Verbs 'Essere' and 'Avere'; Introducing Oneself; Improving Reading Comprehension by means of Dialogs ; Describing People ; Days ; Months ; Years ; Asking the Time ; Ordinal and Cardinal Numbers.

İTA256 (İta) Italian II 3+0 4.0
Simple and Compound Prepositions; Past Tense and Conjugation of Verbs in this Tense; Transitive and Intransitive Verbs in Past Tense; Improving Reading Skills; Analyzing Paragraphs and Texts; Interrogatives: Asking Questions; Introduction to Italian Culture and Daily Language.

JAP301 (Jap) Japanese I 4+0 4.0
Basic Verbs; Words and Sentence Structures Used In Daily Speech; Greetings; Meeting Someone new; Introducing Oneself; Asking For Price; Time Concept; Numbers; Verbs And Words About Traveling By Train And By Bus; Likes And Dislikes; Apologizing.

JAP302 (Jap) Japanese II 4+0 4.0
Introducing Oneself And One's Family; Ordering Food And Beverages In A Restaurant Or Cafe; Asking for the Bill; Meals And Expressions Used for Ordering Meals; Making A Reservation; Talking On The Phone; Asking For Information; Quantifiers; Demonstrative Adjectives; Talking About Past And Future.

KÜL451 (Eng) History of Science and Engineering 3+0 4.5
Science and Technology in Ancient Age: Mesopotamia, Ancient Egypt, Ancient Greece and Rome, Ancient Anatolia, Ancient Chinese and Central Asian Civilizations; Science and Technology in Middle Age: Medieval Europe; Islamic World; Renaissance and Modern Science; Enlightenment Age, Industrial Revolution; Technologic Development: Steam Engine, Internal Combustion Engine, Usage of Electricity, Conversion of Electrical Energy to Mechanical Energy, Telegraph and Telephones, Wireless Communication, Radio, Television, Space Travel, Vacuum Lamb Technology, Invention of Transistor and Silicon Age, Development of Computer Technology; Information Age.

LOJ401 (Eng) Logistics Management and Models 3+0 6.0
Logistics Concept; Historical Development of Logistics; Logistics Management and Supply Chain Management: Insurance, Customs; Forecasting; Facility Location Selection; Logistic Network Design; Transportation Vehicles; Types of Transportation; Warehouse Management: Warehouse Design; Types of Consolidation; Cargo Loading; Fleet Composition; Short and Long Term Vehicle Routing Problems: Modeling and Application Examples.

MAT108 Linear Algebra and Analytic Geometry 2+0 3.0
Vectors and Applications: Inner product of vectors, Outer product of vectors, Compound product of vectors; Vector Spaces and Subspaces; Planar Coordinates and Applications: Vertical coordinate system, Parallel and polar coordinate system; Coordinate Transformation on Plane; Matrices and Matrice Applications: Determinants; Addition, subtraction and multiplication of matrices, Special Matrices; Linear Algebraic Equations; Curve Drawings and Applications; Analytic Geometry in Space; Planes and Applications.

MAT119 Mathematics I 3+1 5.0
The Rate of Change of a Function: Coordinates, Increments; Slope of a straight line and equations of a straight line; Functions and graphs; Behavior of functions; Slope of a curve; Velocity and rates; Limits: Theorems about limits, Infinity; Application of Limits; Derivatives: Polynomial functions and their derivatives; Rational functions and their derivatives; Inverse functions and their derivatives; Trigonometric functions and their derivatives; Natural logarithm and their derivatives; Exponential functions and their derivatives; Polar coordinates; Applications: Increasing or decreasing functions; Maxima and Minima theory and problems; Curve plotting; The mean value theorem; Rolle's Theorem.

MAT120 Mathematics II 3+1 4.0
Integration: The indefinite integral, Applications of indefinite integration, Integration of trigonometric functions; Area under a curve; Definite Integral: Area between two curves, Distance, Volumes, Moments and center of mass; Work; Hyperbolic functions: Definitions, Derivatives and integrals; Numerical methods for approximating definite integrals; Cylindrical and Spherical Coordinate Systems; Vector functions and their derivatives: Velocity and acceleration, Tangential vectors, Curvature and normal vectors; Infinite Series: Power series, Taylor's theorem, Application to max-min theory for functions of two independent variables.

MAT129 Mathematics I 2+0 4.0
Set Systems of Number; Exponents and Radicals; Solutions of Inequality and Equation; Functions: Special functions and graph; Mathematical Induction; Sequence and Convergence; Limit; Continuity; Derivative Power; Formula; Chain Rule and High Order Derivative; Derivative of Special Functions; Maxima, Minima and Inflections; Economic Applications of Derivative; Plotting Curve.

MAT168 Mathematics 4+2 5.5
Basic Mathematical Concepts: Fractions, Percentage, Decimals, Repeating decimals, Exponent and radical numbers; Number Sets; Ratio and Proportion: Speed and motion problems, Equation and inequalities, First and second degree equation and inequality, Solving sets of equations, Units of measurement; Geometric Shapes and Properties: Triangle, Circle, Polygons; Perimeter; Area; Volume Calculation; Function Concept: Types of function; Sequences; Limit Concept: Continuity concept.

MAT172 Mathematics II 2+0 3.0
Integration: The definite integral, Properties of definite integral, Fundamental theorem of calculus, Areas of plane regions; Techniques of Integration: Change of variables, Integration by parts, Integration of rational functions; Applications of Integration: Applications of integral in economics; Multiple Integrals: Double and triple integrals; Matrix; Determinants; System of Linear Equations.

MAT208 Differential Equations 3+0 3.5
Definition of Differential Equation: Solutions of differential equations; First Order and First Degree Differential Equations: Separable equations, Homogeneous differential equations, Linear differential equations, Exact equations; Higher Order Linear Equations With Constant Coefficients and Applications: Homogeneous equations, Non-homogeneous equations.

MAT801 Mathematics I 4+0 4.0
Arithmetic Terms and Signs: Methods of multiplication and division, Fractional and decimal numbers, Measurements and conversions, Ratio and proportion, Means and percentages; Numbers; Sets; Functions; Simple Geometric Structures; Equation / Graphs of Functions; Simple Algebraic Expressions and Calculations: Addition, Subtraction, Multiplication and Division; Use of Brackets; Simple Algebraic Fractions; Logarithms; Simple Trigonometry: Trigonometric links, Use of tables, Sequences and series, Limits and continuity; Derivatives and Derivative Applications; Drawing graphics by using derivative; Ambiguous Figures and the L'Hospital Rule; Taylor's Formula.

MAT802 Mathematics II 4+0 4.0
Integration: Definite integral, Fundamental theorem of differential and integral calculus, Areas of plane regions, Techniques of integration; Integration of Rational Functions, Trigonometric Integral, Improper Integrals, Integration Methods; Integral Applications: Volume, Arc length and Surface area; Multivariable Functions: Limits and continuity, Partial derivatives, Total derivative, Maximum and minimum; Double and Triple Integrals; Area and Volume.

MAT803 Linear Algebra 3+0 3.0
Vector Spaces; Subspaces; Linear Dependence and Linear Independence: Finite Dimensional Vector Spaces (base (base) concept), Linear Transformations; Matrices; Matrices and Linear Transformations (Matrix representation of linear transformations); Linear Equations and Their Solutions; Indices and Exponential Expressions, Fractions and Negative Indices; Simultaneous Equations and Quadratic Equations with One Unknown; Systems of Linear Equations and Solution Methods of Linear Equations.

MEK110 Mechanics for Air Traffic Control 3+0 3.0
Statics of Particles: Forces in the plane and space; Equivalent System of Forces; Equilibrium of Force Systems in a Plane; Equilibrium of Force Systems in Space; Kinematics of Particles: Linear and curvilinear motion of particles; Newton′s Laws of Motion: Newton′s 2nd law, Equations of motion, Dynamic equilibrium; Principle of Work and Energy; Principle of Impulse and Momentum; Kinematics of Rigid Bodies.

MEK112 Mechanics 3+0 3.0
Nature of Matter: Chemical elements, Structure of atoms and molecules; Chemical Compounds; States of Matter: Solid, Liquid, Gaseous; Changes Between States; Forces, Moments and Couples, Representation As Vectors; Centre of Gravity; Elements of Theory of Stress, Strain and Elasticity: Tension, Compression, Shear, Torsion; Nature and Properties of Solid, Fluid and Gas; Pressure and Buoyancy in Liquids (Barometers).

MEK216 (Eng) Engineering Mechanics: Dynamics 3+0 4.0
Newton's Laws of Motion; Unit systems, Kinetics of particles, Applying the laws of motion to Cartesian, Cylindrical and spherical coordinates, Definitions of force-mass-momentum, Work and energy, Function of forces and potential energy, Impulse-momentum, Collision, Kinematics of rigid bodies, rotation around a fixed axis and general planar motion, Mechanical vibrations, Practice and problem solutions.

MEK217 (Eng) Engineering Mechanics: Statics 3+0 5.0
Vector Algebra; Forces and Moments; Equivalent Force Systems in Rigid Bodies; Free Body Diagram; Equilibrium; Center of Gravity; Distributed Forces; Introduction to Structural Mechanics; Planar Truss Systems; Frames and Machines; Internal

Forces in Structural Members; Joint Points and Cutting Method; Shear and Bending Moment Diagrams; Moment of Inertia; Friction; Principle of Virtual Work.

MEK218 Fluid Mechanics 3+0 3.0

Definition of Fluids; Continuum Hypothesis; Properties of Fluids: Specific gravity, Density, Viscosity, Surface tension, Compressibility; Fluid Statics; Fluid Flow; Streamlines; Streaklines; Pathlines; Types of Flow (Steady, Unsteady, Laminar, Turbulent, etc.); Control Volume and System Representation; Continuity Equation; Static, Dynamic and Total Pressures; Bernoulli Equation; Venturi Tube Flow; Fluid Resistance; Laminar and Turbulent Flows; Reynolds Number; Effects of Streamlining; Viscous Flow in a Pipe; Effects of compressibility on Fluids; Mach Number; Dimensional Analysis.

MEK318 Flight Mechanics 3+0 3.0

Forces on Aircraft: Lift, Drag, Thrust, Weight; Steady State Flights and Performance: Steady level flight, Steady climbing flight, Steady descending flight, Steady gliding flight and glide ratio; Coordinated Turn Maneuver; Effects of Load Factor: Stall, Flight envelope, Maneuvering envelope and structural limitations; Lift Augmentation; Stability: Active and passive, Longitudinal stability, Lateral stability, Directional stability.

MEK323 (Eng) Fundamentals of Fluid Mechanics 4+0 6.5

Definition of Fundamental Fluid Mechanics Terms Like Pressure Viscosity etc., Stationary Fluids and Hydrostatic; Eulerian and Lagrangian flow Analysis; Bernoulli Equation and its Applications; Boundary Layer Definition; Boundary Layer Theory; Reynolds Transport Theory; Dimensional Analysis and Meaning of the Non-dimensional Parameters, Pipe Flow and its Applications; External Flow and its Applications; Open Channel Flow and its Applications; Design of Fluid Systems.

MEK406 (Eng) Mechanical Vibrations 3+0 5.0

Kinematics of Vibration, Single-degree of freedom systems, Undamped free vibrations, Determining natural frequencies via energy method, Rayleigh method, Damped free vibrations, Viscous damped vibrations, Logarithmic decrement, Forced damped vibrations, Vibration isolation, Two degree of freedom systems, Dynamic vibration absorber, Multi-degree of freedom systems, Torsional vibrations.

MFALM101 German for Engineering I 3+0 4.0 (Ger)

Articles; The Plural of Nouns; Sentence Structures and Building Sentences (interrogative, imperative and declarative sentences); Pronouns (personal, reciprocal and possessive pronouns); Numbers (ordinal, prime, fractional numbers); Telling Time; Adverbs of Time; Tenses (Present, Past, Perfect and Future Tenses); Reviewing the Current Different Bodies of Literature on Engineering; Authentic Materials for Improving Reading and Writing Skills, Exercises on Introduction to Engineering Terminology.

MFALM102 German for Engineering II 3+0 4.0 (Ger)

Adverbs of time used to indicate days of the week and time zones of the day, seasons and months; Prepostitions (Präpostition); Prepositions used with accusatives (ohne, entlang, etc.), prepositions used with datives (mit, von, bei, aus, etc.), prepositions used with genitives (wegen, während, etc.), prepositions used with both acusatives and datives (in, auf, an, neben etc.); Making sentences with prepositions, including engineering terminology; Making sentences about the field studied, including engineering terminology.

MFALM201 German for Engineering III 3+0 4.0 (Ger)

Reflexive Verbs (Reflexive Verben); Modals (Modalverben); Passive (Passiv) Sentences (man pronoun, Zustandspassiv, Vorgangspassiv, Making passive sentences using modal verbs); Conjunctions / Subordinate Clauses (Time, Reason, Condition, Sequence, Contrast-Restriction, Comparison, Intention/Wish Subordinate Clauses), Sentence Building with Engineering Terminologies.

MFALM202 German for Engineering IV 3+0 4.0 (Ger)

Relative Clauses (Relativsätze), Using Relative Clauses with the Four Cases in German (Nominativ, Akkusativ, Dativ and Genitiv), Using Relative Clauses with Prepositions; Using Relative Clauses with W-Question Words; Indirect Expression Sentences (Konjunktiv I); Probability, Wish, and Unreal State Expressions (Konjunktiv II); Use of Present and Past Tense; Use of Konjunktiv I and II in Engineering; Translation Exercises Related to the Field of Engineering.

MKM104 Computer Aided Engineering Technical Drawing 2+2 5.0 (Eng)

Introduction to Computer Aided Technical Drawing; Sketch Modeling; Assigning Geometric Constraints to Sketches; Projection Drawings; General Concepts in Three Dimensional Modeling; Creating Parts in Three Dimensional Design and

Solid Modeling; Dimensioning Principles; Arranging Models; Sectioning; Assembly Modeling; Machinery and Construction Parts; Creating Animations and Simulations.

MKM303 Heat Transfer 4+0 5.0
(Eng)
Fundamentals of Heat Transfer; Equation of Heat Conduction; Steady-state and Transient One or Multi-dimensional Heat Conduction; Numerical Methods and Applications; Laminar, Turbulent and Forced Convection and Natural Convection; Heat Transfer during Phase Transition; Heat Exchangers and Design of Heat Exchange Systems; Heat Transfer on Extended Surfaces; Heat Transfer through Radiation.

MKM304 Manufacturing Techniques 2+2 5.0
(Eng)
Introduction to Traditional and Advanced Manufacturing Processes and their Comparison; Overview, Principles and Applications of Casting and Joining Processes; Bulk Deformation Processes (Forging; Rolling and Extrusion); Sheet Metal Forming Processes, Machining, Powder Metallurgy; Surface Technologies; Coating, Classification of Non-Traditional and Micro Level Manufacturing Methods, DFX (Design for X); Engineering Economics; Engineering Metrology; Quality Engineering; Automation and Plant Layout; Computer Integrated Manufacturing; Lean Production.

MKM306 Experimental Engineering 2+2 4.0
(Eng)
Introduction to Experimental Methods; Measurement Systems and their Basic Elements; Data Collection Systems; Filters and Amplifiers; Length Measurements; Temperature Measurements; Pressure Measurements; Stress Measurements, Optical Measurements, Preparation of experimental setup and measurement chain; Introduction to Statistics; Signal Quality and Data Processes, Signal processing and Evaluation of Data Analysis, Signal processing methods; Fourier Transform and Frequency Analysis; Uncertainty Analysis.

MKM413 Engineering Applications of Finite Element Analsis 3+0 5.0
(Eng)
Introduction to ANSYS Workbench Software: Project management page, Work flow, Analysis systems, Component systems, Design tools, User interface, Basic analysis procedure; Mechanical Basics: Preliminary decisions, Pre-processing, Solving procedure, Post-processing, Menus and toolbars; General Pre-processing: Material properties, Geometry creation, Contact algorithms, Coordinate systems; Meshing Techniques: Global and local meshing controls, mesh quality check; Model Parameters: Connections, Boundary conditions, Loading conditions; Analysis Types: Static structural, Thermal analysis, Modal analysis, Explicit analysis; General Post-Processing.

MLZ216 (Eng) Mechanical Behaviour of Materials I 2+0 3.0
The Analysis of the Mechanical Behavior of Materials: Stress, Strain, Elasticity, Plasticity, Ductile versus brittle behavior; Factors Affecting Stress-Strain Relationship: Bonding types, Defects, Second phases and their effects on deformation behavior; Dislocation Theory; Strengthening Mechanisms; Mechanical Tests: Tension, Compression, Hardness, Impact; Creep: Effect of temperature on deformation.

MLZ221 (Eng) Physical Properties of Materials 2+0 2.5
Introduction to Materials Science and Engineering; Atomic Structure and Chemical Bonding; Crystal Structures; Solidification, Crystalline Imperfections and Diffusion in Solids; Mechanical Properties of Metals; Polymeric Materials; Phase Diagrams; Engineering Alloys; Ceramic Materials; Composite Materials; Corrosion; Electrical Properties of Materials; Optical Properties; Superconducting Materials; Magnetic Materials.

MLZ229 (Eng) Materials Characterization Techniques I 2+0 3.0
Importance of Characterization; Properties and Production of X-rays; Interaction between X-Rays and Solid; Bragg Law and Diffraction; The Use of X-Rays; Intensity of Diffracted Peaks; Calculation of Expected Theoretical Patterns; The Identification of Phases Obtained from Different Materials; Heat-Solid Interactions; Thermal Analysis Techniques; Properties Measured by Thermal Analysis; Thermogravimetric Analysis (TG); Differential Thermal Analysis (DTA), Differential Scanning Calorimetry (DSC) and Simultaneous Thermal Analysis; Dilatometry; Interpretation of TG, DTA, DSC and Dilatometer Curves; Parameters Effecting the Thermal Analysis Results; Quantitative Analysis.

MLZ230 (Eng) Materials Characterization Techniques II 2+0 3.5
Importance of Microstructure; Microscopic Characterization Techniques; Brief History of Microscopes; Specimen Preparation; Light-Solid Interactions and the Resulting Signals; Light Microscopes, Types of Light Microscopes and Contrast Techniques; Resolution, Aberrations and Why We Need to Use Electron Microscopes; Interactions Between Electrons and Solids; Light vs Electrons; Scanning Electron Microscopes (SEM); Imaging Techniques in SEM; Chemical Analysis Techniques for SEM; Qualitative and Quantitative Analysis; Important Parameters to Obtain Best Results; Transmission Electron Microscopy (TEM) and Imaging Techniques; Diffraction and Chemical Analysis in TEM.

MLZ232 (Eng) Introduction to Materials Science 3+0 3.5
Introduction to Materials Science; Atom and the Crystal Structure; Solid State Diffusion; Imperfections in Solids; Dislocations and Strengthening Mechanisms; Mechanical Properties of Materials and Materials Testing: Tension, Compression, Torsion, Bending, Impact, Creep testing; Ferrous and Non-ferrous Alloys; Fracture; Phase Diagrams and Iron-Carbon Phase Diagram; Polymers; Ceramics; Composite Materials.

MLZ327 (Eng) Mechanical Behaviour of Materials II 2+0 3.0
Overview of Mechanical Properties/Behaviours of Materials; ASTM Standards; Mechanical Properties/Behaviours of Metals; Elastic/Plastic Deformation; Tensile Properties; Dislocations; Strengthening Mechanisms in Metals; Hardness; Design/Safety Factors; Mechanical Properties/Behaviours and Toughening Mechanisms in Ceramics; Test Methods; Weibull Modulus; Thermal Stress/Shock Parameters; Thermal Properties/Behaviours of Materials; Mechanical Properties/Behaviours, Mechanisms of Deformation and for Strengthening of Polymers; Mechanical Properties/Behaviours and Toughening Mechanisms of Composites; Fundamentals/Principles of Fracture Mechanics; Fatigue; Creep.

MLZ453 (Eng) Advanced Materials and Composites 2+0 3.0
Introduction to Advanced Materials and Composites; Production Methods of Advanced Ceramics and Composites; Properties and Applications of Advanced Ceramics and Composites; Production Methods of Metal Matrix Composites; Properties and Applications of Metal Matrix Composites; Production Methods of Polymer Matrix Composites; Properties and Applications of Polymer Matrix Composites; Testing; Interfaces; Fibers, Whiskers and Nanotubes.

MLZ474 (Eng) Aviation Materials 2+0 3.0
Common Aviation Materials and Alloys: Stainless steels; Super Alloys, Titanium Alloys, Aluminium Alloys, Composite Materials; Material Properties under Tensile, Fatigue and Creep; Raw Material Production Methods and Effect of Production Methods on Material Properties: Ingot Production, Casting, Forging, Material production processes: Welding, Brazing, Form operations, Heat treatment, Material testing: Testing at room temperature, Testing at high temperature, Wear and corrosion; Quality control: Non-destructive and destructive testing methods, Quality insurance systems.

MLZ475 (Eng) Polymer Matrix Composites 2+0 3.0
General Aspects of Composite Materials: Fibers and fiber architecture; Matrices; Elastic Deformation of Long-Fiber Composites; Laminates and Their Elastic Behavior; Stress and Strain in Short Fiber Composites; Characterization of Interface Region Between Matrix and Fiber; Introduction to Interface Formation Mechanisms: Measurement of bonding strength; Strength and Toughness of Polymer Matrix Composites; Introduction to Processing Technologies for Polymer Matrix Composites: Hand Lay-Up; Pre-Preg; SMC (Sheet Molding Compound); RTM (Resin Transfer Molding);VARTM (Vacuum Assisted Resin Transfer Molding); Poltrusion; Filament Winding; Recent Applications of Polymer Matrix Composites.

MLZ486 (Eng) Strengthening Mechanisms in Materials 2+0 3.0
Classification of Materials; Mechanical Properties/Behaviours of Metals; Elastic/Plastic Deformation; Dislocations; Mechanical Properties/Behaviours of Ceramics; Mechanical Properties/Behaviours of Polymers; Viscoelastic Deformation; Mechanical Properties/Behaviours of Composites; Fundamentals/Principles of Fracture Mechanics; Mechanisms of Strengthening in Metals; Recovery, Recrystallization and Grain Growth; Toughening Mechanisms in Ceramics; Mechanisms of Deformation and for Strengthening of Polymers; Toughening Mechanisms in Composites; Thermo-Mechanical Properties of Materials; Thermal Stress/Shock Parameters; Thermal Properties/Behaviours of Materials.

MUH151 Introduction to Accounting 3+0 4.5
Concepts of Business and Accounting; Financial Transactions; Balance of Assets-Liabilities; Balance Sheet and Income Statement; Accounts: Concept of account, Types of accounts, Account chart; Document and Books; Accounting Process; Follow up Goods Transactions: Inventories and transactions of the purchase and sale of goods, Periodic inventory system, Perpetual inventory system; Liquid Assets: Cash, Banks, Checkups; Marketable Securities: Share certificates, Bonds; Receivables: Trade receivable, Other receivable; Long Term Assets; Liabilities; Shareholders Equity; Transactions of Income and Expenses; End of Period Transactions; Preparing Financial Statements and Closing Transactions.

MUH302 Analysis of Financial Reports 3+0 4.5
Fundamental Financial Statements: Balance sheet, Income statement; Comparative Statements Analysis Method: Preparation of statements, Analysis and interpretation; Percentage Analysis Method: Preparation of statements, Analysis and interpretation; Trend Analysis Method: Preparation of statements, Analysis and interpretation; Fund Cash Flow Analysis: Preparation of statements, Analysis and interpretation; Change in Net Working Capital Statement: Preparation of statements, Analysis and interpretation; Ratio Analysis: Analysis and interpretation of liquidity, financial structure activity and profitability ratios.

MÜH402 (Eng) Engineering Ethics 2+0 3.0

A Brief History of Ethics; Introduction to Ethical Conflicts; Values and Value Systems/History of engineering profession; Computer and Hacker Ethics/Business Ethics; Incident at Morales; Environmental Ethics/Climate Change Ethics; Case studies for engineering ethics.

MÜH404 (Eng) Innovation Management 3+0 3.0

Innovation Concept: History and Evolution of Knowledge, World of Innovation, Defining Innovation Models; Innovation and Creativity: Creativity Concept, Fostering Creativity in Organizations, Factors Fostering Creativity, Creativity to Innovation, Tools for Creativity; Innovation in Information Age: Innovation Process, Innovation Types, Barriers to Innovation, Recent Innovation Trends, Analyzing Innovation, Conditions of Information Age, Innovative Thinking, Breakthrough Innovation Process, Innovative Idea Generation, Encouraging Innovation in the Organization, Building an Innovative Organization, Measures of Innovation: Recent Measures of Innovation, Process Based Measures of Innovation; Institutionalizing Innovation: Innovation in Service, Protecting the Innovation, Commercializing the Innovation, Managing Campus-Based Innovations, Managing Innovative Activities.

MÜZ101 Evolution of Music 2+0 3.0

History of Music: Antique period, Middle Ages, Renaissance, Baroque, Music in the 17th and 19th centuries; Music in the 20th Century: Regionalism, Nationalism, Universality; Cultural Mosaic of Anatolian Music; Place of Turkish Music in the International Arena; Developing Appreciation of Music from Different Periods.History of Music: Antique period, Middle Ages, Renaissance, Baroque, Music in the 17th and 19th centuries; Music in the 20th Century: Regionalism, Nationalism, Universality; Cultural Mosaic of Anatolian Music; Place of Turkish Music in the International Arena; Developing Appreciation of Music from Different Periods.

MÜZ151 Short History of Music 2+0 3.0

Mile Stones in the History of Music; Music of the Antique Period; Music of Far East; Music of Anatolia; Music of the Middle Ages: Gregorian Chants; Music of Renaissance: Bach and Handel; Music of the Classical Age; Pianoforte in the Classical Age; Romantic Age; Nationalist Movement; Contemporary Music; Nationalism and Universality.

MÜZ155 Turkish Folk Music 2+0 2.0

Folk songs from different Regions of Turkey are Taught; Aegean Region Zeybek Folk Songs: Eklemedir koca konak, Ah bir ateş ver, Çökertme, Kütahya'nın pınarları, Çemberinde gül oya; Kars Region Azerbaijani Folk Songs: Bu gala daşlı gala, Yollarına baka baka, Dağlar gızı Reyhan, Ayrılık, Dut ağacı boyunca; Central Anatolian Region Folk Songs: Seherde bir bağa girdim, Uzun ince bir yoldayım, Güzelliğin on para etmez, Mihriban ve Acem kızı; Southeastern Anatolian Region; Urfa and Diyarbakır Folk Songs: Allı turnam, Urfanın etrafı, Mardin kapısından atlayamadım, Fırat türküsü, Evlerinin önü kuyu; Blacksea Region; Trabzon, Rize, Artvin Folk Songs: Maçka yolları taşlı, Ben giderim Batuma, Dere geliyor dere.

MÜZ157 Traditional Turkish Art Music 2+0 2.0

Description of Traditional Art Music: Basic concepts, Characteristics, Types, Notes, Instruments; The Mode System of Traditional Turkish Art Music; The Rhythmic Pattern of Traditional Turkish Art Music; Samples from Different Modes; Samples from Different Rhythmic Patterns.

NÜM305 Quantitative Methods 3+0 4.5

System and system approxmations; Decision Making Process and Models: Structure of Decision Problem, Decision Making Process; Decision environment: Certainty, uncertainty and Risk; Decision Models in certain environment; Linear Programing, Model Formulation, Linear Programing Solving Techniques: The Graphical and Simplex Techniques; Duality and Sensitivity Analysis; Transportation and Assigment Models; Network Analysis; Inventory Models; Game Theory.

ÖMB322 Ethics of Science and Research 2+0 3.0

Science, the nature of science, its development and scientific research; the concept of ethics and ethical theories; research and publication ethics; unethical behavior and ethical violations in the research process; ethical issues related to writing and copyright; biased publication, editor, refereeing and ethics; unethical behavior in broadcast ethics and broadcasting; legal regulations and boards on research and publication ethics; Ways to be followed in detecting ethical violations; common research, publication ethics violations and methods to prevent them.

PLT113 Principles of Flight 4+0 3.5

Subsonic Aerodynamics: Laws and definitions, Basics of airflow, Aerodynamic forces and moments, Airfoil and wing terminology, 2 dimensional flow around airfoil, 3 dimensional flow around aircraft, Ground effect, Stall phenomena, Boundary layers; High Speed Aerodynamics: Mach number, Compressibility, Shock waves, Divergence drag and its reduction; Stability: Static and dynamic stability; Control: Longitudinal directional and lateral control, Operational limitations: Flight, Maneuver and gust envelopes; Propellers; Flight Mechanics: Forces on aircraft, Steady level flight, Climb, Descend, Turn.

PLT114 Aircraft General Knowledge I (Airframe and Systems) 3+0 4.0

System Design: Design concepts, Loads, Stresses, Fatigue, Corrosion; Airframe Structure: Construction and attachment methods, Materials, Wings, Empenange, Fuselage, Doors, Windows; Hydraulic: Hydraulic fluids, System components; Landing gear: Types, System components, Nose wheel steering, Brakes, Wheels, Tyres; Flight Control: Primary flight control surfaces, Secondary flight control surfaces, Fly-by-wire; Pneumatic: Pressurisation, Air conditioning system; Anti-Icing and De-Icing Systems; Fuel System: Fuels, System components, Indications; Emergency Systems: Smoke detectors, Fire protection systems, Oxygen systems.

PLT115 Safety Management System I 2+0 1.5

Main Factors in Flight Safety: Man (Human), Medium (Environment), Maintenance; Main Factors of Incident/Accident: Man, Machine, Medium, Mission, Management; Reasons of Aircraft and Ground Incidents/Accidents: Flight crew, Aircraft, Meteorology, Maintenance, Aerodrome, ATC, Others; Analysis of Incident/Accidents: Approach incident/accidents, Take-off/landing incident/accidents; Interface Between Man, Machine and Environment; Risk Factors: Human psychology/physiology, Personality and behaviors, Environment, Maintenance applications; Risk Management: Flight and ground safety cautions, Basic concepts of flight and ground safety.

PLT117 Meteorology I 4+0 4.0

Atmosphere: Temperature, Pressure, Air density, Humidity, ICAO standard atmosphere; Wind: Local winds, General circulation, Turbulence, Jetstream, Wind shear; Clouds and Precipitation; Visibility: Runway visibility; Meteorological Events (Rain, Fog, etc); Air Masses and Fronts; Pressure Systems; Climatology; Flight Hazards: Icing, Turbulence, Inversions, Thunderstorms, Windshear; Meteorological Information: Weather charts, Weather reports (METAR, TAF, SPECI, TREND).

PLT118 Meteorology II 2+0 3.0

Visibility; Clouds; Thunderstorm: Flying in the thunderstorm; Turbulence: Types of turbulence, Flying in the turbulence; Icing: Types of icing, Icing during flight; Sigmet; Vhf Volmet Broadcasts; Prognostic Charts (Swc); Meteorological Cautions; Metar Aviation Routing Weather Report; Significant Current and Deduced Weather Forecast; Speci Aviation Selected Special Weather Report; Taf Terminal Aerodrome Forecast; Taf Amd Improved Aerodrome Forecast; Constant Pressure Charts.

PLT120 Aircraft General Knowledge II (Electrics) 1+0 1.0

Definitions and Basic Applications: Static electricity, Direct current, Alternating current, Resistors, Capacitors, Inductance coil, Permanent magnets, Electromagnetism, Circuit breakers, Semiconductors and logic circuits; Batteries: Types, Characteristics and limitations; Generation: DC generation, AC generation, Constant speed generator (CSD) and integrated drive generator (IDG) systems, Transformers, Transformer rectifier unit (TRU), Static inverters.

PLT122 Flight Operations 3+0 3.0

Requirements of ICAO Annex 6; Flight Operations; Performance and Limitations; Instruments, Equipment and Flight Documents; Communication and Navigation Equipments; Flight Crew; Security; Requirements of JAR-OPS; Air Operator Certification; Operational Procedures; Requirements for All Weather Operations; Instruments and Equipment; Communication and Navigation Equipment; Navigation Requirements for Long Range Flights; Flight Management; Transoceanic and Polar Flight; MNPS Airspace; Special Procedures and Hazards: MEL; De/Anti-Icing; Bird Strike; Noise Abatement.

PLT124 Knowledge, Skills and Attitudes 4+0 5.0

ICAO Core Competencies; Core Competencies Learning Objectives; Communication, Leadership and Teamwork, Problem-solving and Decision-making, Situation Awareness, Workload Management; Additional Threat and Error Management (TEM) Related Learning Objectives; Application of Knowledge, Upset Prevention and Recovery Training (UPRT) and Resilience; Mental Maths.

PLT225 Aerodynamics 3+0 3.5

Basic Laws of Physics And Thermodynamics Related To Aerodynamics; Atmosphere; International Standard Atmosphere; Bernoulli's Principle; Airspeed Measurement; Introduction To Compressible Flow; Airfoils; Lift Theories; Boundary Layer; Drag; Wings; Aerodynamic Characteristics of The Wings; Stalls; Drag Polar; High Lift Devices; Compressibility Effects On The Aircraft Aerodynamics.

PLT239 Aircraft General Knowledge III (Aircraft Engines) 2+0 3.0

Piston Engines Principles: Engine cycles; Engine Construction; Mechanic, thermal and volumetric efficiencies; Power Calculations; Factors Affecting Performance; Classification of Piston Engines; Fuel and Fuel Systems; Start and Ignition Systems; Lubricants and Lubricating System; Engine Instruments; Gas Turbine Engine Principles: Engine Cycle; Engine Construction: Air Inlet, Compressor, Combustion chamber, Turbine, Exhaust; ; Fuel and Fuel Systems; Start and Ignition Systems; Lubricants and Lubricating System; Engine Instruments; Auxiliary Power Unit.

PLT240 Avionics I 12+0 1.5

KMA 24 / 28 Audio Nav/Comm Control Panel; KX 155/ 165 KY 196A/197 King/Nav Com System; Frequency Selection, Activating; KAP 140 Otopilot and Flight Control System; KR 87 Digital ADF: Station defining, System check; RMI Radio Magnetic Indicator Course Deviation Indicator; KT 76 A / 76C Transponder; KMD 550 MFD Multi Function Display; KN 62 A DME Distance Measuring Equipment; KCS 55 A HSI Horizontal Situation Indicator; OBS Omni Bearing Selector; KLN 89B/ 94 GPS Navigation System Indicator.

PLT242 Normal Procedures I 18+0 1.5

Familiarization to Flight; Preflight Preparation and Checks; Checklist Following and Operating Procedures; Preflight Inspections; Before Starting Engine Checks; Starting Engine Checks; Before Taxiing Checks; Taxiing Checks; On Holding Point (engine run up) Checks; Before Take-off and Take-off Checks; Climb, Cruise and Descend Checks; Traffic Circuit Pattern, Downwind and Before Landing Checks; After Landing Checks; Engine Shut-Down and Securing Procedures.

PLT244 Emergency Procedures I 18+0 1.5

Airspeed for emergency operation; Engine failures: Engine failure during takeoff roll, Engine failure immediately after takeoff, Engine failure during flight (restart procedures); Forced landing; Emergency landing with or without engine power; Fires; During start on ground or in flight, Electrical fire in flight, Cabin and wing fire; Icing: Static source blockage; Landing with a flat main or nose tire; Electrical power supply system malfunction: Ammeter's indication of accesive rate of charge, Low voltage annunciator (volts) Illumination during Flight; Vacuum system failure; Radio failure in flight; Light signals and meanings given from the tower.

PLT247 General Navigation 5+0 5.0

Basics of General Navigation: The Solar System; The Earth: Great Circle; Rhumb Line; Conversion Angle; Latitude and Latitude Differences; Longitude and Longıtude Differences; Time: Types Of Time; Conversion Of Time To Arc and Vice Versa; Directions: Kinds Of Direction; Variation; Deviation; Calculating Direction; Distance: Conversion From One Unit To Another; Finding Distance on Latitude/ Longitude; Plotting; Magnetısm And Compasses; Charts: Scale; Representive Fraction; Factors Of Dead Reckoning Navigation (DR): Track; Heading; Speed; Wind velocity And Drift Time; Using Flight Computer In-flight Navigation: Take-Off; Climb; Cruıse; Decent; Off Track Correctıons.

PLT251 Human Performance and Limitations 4+0 4.5

General Concept of Human Factors in Aviation; Human Factors in Aircraft Accidents; Aviation Physiology; Atmosphere; Respiratory and Circulatory Systems; Hypoxia and Hyperventilation; Man and Environment: Sensory System; Central and Peripheral Perception Systems; Vision; Basic Functions and Parts of Eye; Visual Problems During Day and Night; Equilibrium; Spatial Disorientation; Perception System; Nutrition; Hygiene; Health Care: Harmful effects of tobacco and alcohol in aviation; Self Imposed Stress, Incapacitation in Flight; Crew Resource Management.

PLT253 Air Traffic Communication I 2+0 4.5

Radio technics phonetic alphabet and mors codes; How to say numbers, time system abbreviations; Standard phraseology standard words and definitions; call signs, type of call signs; correction, read back - frequency change; radio check; engine start up procedures and taxi instructions; Take off clearance enroute procedures; position reports; flight level or altitude; Approach and traffic pattern procedures, runway vacating after landing; radio failure, transponder procedures; distress communications, urgency communications.

PLT255 Aircraft General Knowledge IV (Flight Instrument) 3+0 4.0

Pitot-Static Instruments: Pitot-static heads, Air speed indicator, Pressure altimeter, Vertical speed indicator, Mach-meter; Magnetism and Magnetic Compass: Magnetism, Magnetic compass, Aircraft magnetism; Gyroscopic Instruments: Gyroscopic principles Gyro types, Directional gyro, Attitude indicator, Turn and slip indicator, Turn coordinator, Slave gyro; Inertial Navigation Systems: INS, IRS; Air Data Computer; Engine Instruments: Grouping, Thrust indicators, Torque indicators, Tachometers, Temperature indicators, Pressure indicators.

PLT257 Radio Navigation I (Basic Radio Aids) 4+0 5.0

Radio Wave Theory: Frequency, Wavelength, Amplitude, Phase, Frequency bands, Modulation, Antennas, Wave propagation; VDF (VHF Direction Finder); ADF (Automatic Direction Finder); VOR (VHF Omni Range); DME (Distance Measuring Equipment); ILS (Instrument Landing System); MLS (Microwave Landing System); RADAR: Working principle, Weather radar, Radar altimeter, PSR (Primary Surveillance Radar), SSR (Secondary Surveillance Radar); GPWS (Ground Proximity Warning System); TCAS (Traffic Collision Avoidance System).

PLT260 Introduction to Aircraft Types I 24+0 3.0

General: Engine, Propeller, Fuel, Oil, Hydraulic; Limitations: Speed symbol and terminology; Emergency Procedures: Practical speed/examples; Normal Procedures: Practical speed; Standard Performance Graphics and its Use; Weight and Balance: Filling weight and balance sheet; Equipment List: Compulsory and noncompulsory equipment; Definition and

Application of Aircraft and its Systems: Wing, Fuselage, Engine, Avionics, Aircraft ground and maintenance services (Cross Country Applications).

PLT262 VFR Navigation and Flight Planning 18+0 3.0

Basic Concepts of VFR Navigation: Performance chart of cessna; Computer Use on VFR Navigation; Dead Reckoning; Fulfilling and Using Flight Log; Fulfilling VFR Flight Plan; Finding Radial by VOR and ADF; VFR Navigation Planning and Application; Control Zone and Service; Responsibilities of Pilots; Finding Direction by Radio Waves; Chart Reading Methods in Navigation; Studies of SOP in Terms of Navigation.

PLT264 Standard Operation Procedures I 30+0 2.5

Aircraft Logbook Inspection; General Fuselage Condition Checks; Analysis of Aircraft Failures; Exceptional Flight Procedures; Oil and Fuel Check; Preflight Inspection; Use of Checklist; Before Starting Engine Checks; Communication Procedures; Checks of Controls; Starting Engine and Checks; Flight Safety Precautions; Determination of Primer; Recovering from Abnormal Situations; Lazy 8; Simulated Forced Landings; Cross Country Procedures; Homing with ADF; Straight-in Approach Procedures; Radio Failure in Flight; Landing and Take-off Procedures with/without Flaps; Stop and Go Procedures.

PLT266 Safety Management System II 18+0 2.0

Stress Management; Environmental Stress Factors and Their Effects; Mental and Physical Health; Time Limitation for Mission and Flight; Behaviors of Passenger and Typical Passenger; Effects of Natural Events in Flight Safety; Vortex; Distance Clearance Between Aircraft: Suggestion of ICAO and NTSB; Runway and Hydroplaning; Slippery Runways and Accidents; Windshear/Microburst; Bird Hazard and Avoidance Techniques; High Voltage Lines; Other Environmental Factors (Electromagnetic Interference/EMI).

PLT268 Practice in Flight I 0+15 3.5

Familiarization with Flight and Aeroplane: Engine start, Taxi, Take-off, Climb, Entering to training areas, Flight controls, Communication with control tower; Training Area Procedures: Protection of training area, Air maneuvers, Emergency procedures, Leaving training area; Traffic Pattern: Downwind, Base leg, Final approach and landing; After Landing Procedures: Parking, Engine shutdown.

PLT270 Practice in Flight II 0+46 7.0

Familiarization of Flight and Aeroplane: Engine start, Taxi, Take-off, Climb, Entering to training area, Flight controls, Communication with control tower; Training Area Works: Keeping of training area, Air maneuvers, Emergency applications, Leaving training area; Traffic Pattern: Downwind, Base leg, Final approach and landing; After Landing Procedures; Traffic Pattern and Training Area Works: Dual command and solo traffic patterns, Dual command and solo air maneuvers, Flight controls, Emergency applications.

PLT272 Practice in Flight III 0+24 4.5

General Applications: Ground operations, Take-off, Climb, Leaving traffic pattern, Transition to cruise, Cruise flight, Keeping of training area, Descent, Entering traffic, Traffic pattern, Base leg/final, Missed approach, Landing, Flight controls, Outside control, Using trim tab, Radio applications, Emergency applications; Air Maneuvers: Normal and shallow bank turns, Steep turn, With/without thrust/characteristic stalls, Slow flight, Chandelle, Lazy 8, Spin prevention, Forced landing.

PLT336 Emergency Procedures II 15+0 1.5

Pitot-Static System Failure: Maximum gliding distance without engine power, Landing emergencies; Recovering from Spin; Ditching; Proposing Recovery; Alternator Failure; Communication Failure; Warning Lights from Tower; Rejecting Take-Off; Recovering from Abnormal Situation; Forced Landing; Landing gear malfunction.

PLT338 Normal Procedures II 15+0 1.5

Preflight Internal and External Inspection; Reading Checklist Procedures; Before Start-up Controls; Before Taxi Controls; Holding Point and Before Line-up Controls; Line-up; Take-off; Climbing; Setting Level Flight and Controls; Procedures of Training Areas;

PLT342 Air Traffic Communication II 12+0 1.5

IFR Communications: General operational procedures, Meanings and importance of related terms, Usages of letters and numbers, Ways of transmitting time, Techniques of radio communication, Explanation of abbreviated radio call signs, Abbreviations of Air Traffic Control, Radio communication failure procedures, Distress and urgency procedures, Fixing of radio navigation stations by their morse codes.

PLT344 Mass and Balance 30+0 4.5

Mass and Balance Considerations: Mass limitations, Centre of gravity limitations; Loading: Mass and load terms, Mass limits, Structural limitations, Performance limitations and cargo limitations, Mass calculations; Fundamentals of CG Calculations: Definition of CG, Balance, Basic calculations of CG; Mass and Balance Details of Aircraft: Contents of mass and balance documentation, Determination of aircraft empty mass and CG position by weighing, Extraction of basic empty mass and CG data from aircraft documentation.

PLT348 Performance 40+0 5.0

Performance Legislation: Airworthiness requirements, Operational regulations; Performance Theory: Stages of flight, Steady flight, Climb, Descent, Range and endurance, Take-off and landing, Influencing variables on performance; Class B Single-Engine Aeroplanes: Speed definitions, Effect of variables on single-engine aeroplane performance; Class A Aeroplanes Certificated Under CS-25; Aircraft Classification and Pavement Classification Numbers; CS-25 Speed Definitions: Take-off, Take-off distances, Accelerate-stop distance, Balanced field length concept, Unbalanced field length concept, Take-off climb..

PLT352 Basic Instrument 18+0 4.5

Blind Cockpit Check; Checklist Procedure; Climb; Cruise; Power Settings; Speed Change; Turns; Constant Rate Maneuvers; Constant Speed Maneuvers; ADF/VOR Homing; Trim Technique; Configuration Changes; Cross-Check Technique; Timed Turns; Stalls; Unusual Attitudes Exists; Partial Panel Flying; 'S' Maneuvers; A/B Patterns; Uses of Flight Instrument as Stand-by or Main.

PLT354 Radio Navigation III (FMS) 18+0 6.0

Flight Management System and General Terms: Navigation and flight management, Flight management computer, Navigation data base, Performance data base, Typical input/output data from the FMC, Determination of the FMS position of the aircraft; Typical Flight Deck Equipment Fitted on FMS Aircraft: Control display unit, EFIS instruments, Typical mode of the navigation display; Global Navigation Satellite Systems: GPS/GLONASS/GALILEO principles, Operation, Errors and factors affecting accuracy.

PLT358 Introduction to Aircraft Types II 24+0 3.0

General: Engine, Propeller, Fuel, Oil, Hydraulics; Symbols; Abbreviations and Terminology; Limits: Speed, Power plant, Weight and maneuvering limits; Emergency Procedures; Normal Procedures: Application procedures, Standards; Performance Charts: Weight and balance, Definitions, Aircraft handling services and maintenance; Day and Night IFR Equipment; Night VFR Equipment; De-icing Systems; Autopilot (KFC 150 and KAP 150); Ground Power Receptacles.

PLT360 Standard Operation Procedures II 15+0 1.5

Aircraft Logbook Inspection; External and Internal Preflight Checks; Starting Engine; Take-off and Entering Training Areas; Climb; Straight and Level Flight; Descent; Leaving Training Areas and Traffic Pattern; Missed Approach; Touch and Go; Crosswind Take-off; Landing; Configuration Changes; Speed Changes; Slow Flight; Steep Turns; Stalls; Calculation of Approach Speeds; Gear Extending in Emergency Landing; Blind Cockpit Control; Recovering from Critical Flight Attitudes.

PLT362 Practice in Flight IV 0+20 7.0

Flight Preparations: Blind cockpit control; Checklist Applications; Take-off; Climb; Transition to Straight and Level Flight; Straight and Level Flight; Power Adjustments; Airspeed Changes; Turns; Constant Rate Maneouvers; Trimming; Constant Speed Maneouvers; Level Turns; Climb and Descent Turns; ADF/VOR Homing; Configuration Transformations; Timed Turns; Crosscheck; Stalls; Unusual Attitude Recovery; Partial Panel Flying; 'S' Maneouvers; A/B Patterns; Primary and Secondary Instruments; Steep Turns; Emergency Procedures; Radio Communications; Point Designation; Alternate Aerodrome Applications.

PLT364 Safety Management System III 12+0 1.5

Crises Management; Management of Change; Safety Cultures; Planning and Organisation in SMS; The Effects of Natural Events to Flight Safety; Wing Edge Vortex; Separations Between Airplanes; Windshear/Microburst; Bird Hazard and Avoiding Procedures; High Voltage Lines; Thunderstorms and Associated Hazards; Turbulence and Clear Air Turbulence; Sandstorm; Flight Operation in Volcanic Ash; Icing; Icing Classifications and hazards.

PLT366 Radio Instrument and Radio Instrument Cross Country 30+0 4.5

Homing; Front and Back Course Interception; Reversal Procedures; Time; Fuel Calculation; Point Designation; Alternate Aerodrome Procedures; SID; Partial Panel; Circling Approach; Crossing Station; Holding, Entering; Drift and Time Correction; Intersection; RNAV; Approach; Maintaining Route to NAV Point; ASR Applications; DME Arc: Entering, Leaving; Maintaining; ILS Approach; Missed Approach.

PLT368 Simulator Application I 0+15 5.5

Ground Preparations: Blind cockpit checklist applications; Take-off; Climb; Transition to Straight and Level Flight; Straight and Level Flight; Power Adjustments; Airspeed Changes; Turns; Constant Rate Maneouvers; Trimming; Constant Speed Maneouvers; Constant Rate Maneouvers; Level Turns; Climb and Descent Turns; ADF/VOR Homing; Configuration Transformations; Timed Turns; Crosscheck; Stalls; Unusual Attitude Recovery; Partial Panel Flying; 'S' Maneouvers; A/B Patterns; Primary and Secondary Instruments; Steep Turns; Emergency Procedures; Radio Communications; Point Designation; Alternate Aerodrome Applications.

PLT370 Practice in Flight V 0+16 6.0

Ground Preparations; SID Applications; Straight and Level Flight; Bracketing-Tracking; Reciprocal Tracking; Holding Entrance; Wind Corrections; Time Corrections; VOR/DME Procedures; Circle to Land; Missed Approach; ASR Applications; Partial Panel; Time and Fuel Consumption Calculations; RNAV Applications; DME Arc Applications; ILS Procedures; Crosscheck; Instrument Approaches; Diversion Procedures.

PLT372 Simulator Application II 0+14 4.0

Ground Preparations; SID Applications; Straight and Level Flight; Bracketing-Tracking; Reciprocal Tracking: Interscepts, Time and distance, Crossing station, Holding entrance, Crosswind corrections, Time corrections, VOR, VOR/DME, ADF approach procedures, Circle to land, Missed approach, ASR applications, Partial panel, Time and fuel consumption calculations, RNAV applications, DME/ARC applications, Maintaining the ARC, ILS approach procedures, Crosscheck, Instrument approaches.

PLT374 Practice in Flight VI 0+22 6.0

Flight Preparations: Blind cockpit check, Take-off; Climb; Cruise Flight; Power Settings; Maneuvers; Speed Changes; Constant Speed Maneuvers; Constant Rate Maneuvers; Climb and Descent Turns; ADF/VOR Homing; Configuration Changes: Timed maneuvers; Ground Preparations: Signal and S/S system controls, Usage, IFR procedures before flight, ATC read-back, Take-off briefing, ASR (SID) applications, Flight log preparations, SID application, Flight controls, Point designation.

PLT387 Instrument Flight Charts 18+0 2.5

Introduction of Instrument Flight Charts; Briefing Bulletin; Chart NOTAMs; Area and Terminal NOTAMs; Enroute Procedures; Radio and Navigation Equipment; Limitations and Codes; Conversion Tables and Codes; Air Traffic Control; Entrance Requirements; Visa and Passport Procedures; Emergency Procedures; Aerodrome Guide; Airfield Information.

PLT388 Simulator Application III 0+8 2.0

Ground Preparations: Radio and navigation systems check, Air traffic communication read-back, T/O briefing, Standard instruments departure applications, Bracketing-tracking, Flight control, Point designation, Altimeter procedures, Time and fuel calculations, Descent briefing, Holding procedures, Instrument approach procedures, Missed approach, Circle to land, Radio communications.

PLT389 Radio Navigation II (Radar, RNAV) 24+0 5.5

Basic Principles of Radar; Ground Radar: Principles, Use of radar in air traffic control service; Radar Services; Radar Identification Procedures: PSR and SSR; Radar Vectoring, Speed control, Separation applications; Transponder: Principles, Mode and code, Basic monitoring; Area Navigation Procedures: RNAV: BRNAV, P-RNAV, RNP-RNAV, 2D RNAV, 3D RNAV and 4D RNAV principles; Navigations Computers.

PLT392 Flight Planning and Monitoring 52+0 7.5

Computation of Estimated Time En Route and Total Fuel Requirements Based on Such Factors Such as Power Settings: Operating altitude or flight fuel and wind; Fuel Reserve Requirements; Selection and Correct Interpretation of the Current and Applicable En Route Charts; SIDS; STARS and Instrument Approach Charts; Explaining NOTAM Information; Determining Required Performance of the Aircraft and Operating Limitations; Preparation and Filing VFR; IFR Flight Plan; Weather Information Pertinent to the Proposed Route of Flight and Destination; Rules for the Alternate Routes and Destination.

PLT422 Multi Crew Cooperation (MCC) 25+0 3.5

Definitions; Air Traffic Control and Cabin Crew Communication; Crew Resource Management Program (CRMP); Preflight Preparation; Practical Training in Cockpit; Flight Line Activities; Situation Awareness (SA); Personnel Behavior; Explanation of Situation; Perception and Reality; Loss of Consciousness; Cabin Crew Behaviors Leading to Problems; Decision Making; Types of Personality and Attitude; Flight Management; Communication Methods; Check-list Practice; PIC/PNIC Flight and Missions; Mission and Responsibilities in Applying Emergency Procedures.

PLT456 Night Flight 12+0 3.0

Prerequisites in JAR-OPS, Annexes(2,6,8) Eye's Anatomy and Physiology; Effect of Light on Eye; Main Factors for Seeing Visual Illumination Adaptation to Dark, Factors on Dark Vision; The Techniques for Good Night Vision; Illumination and Lighting System; Runway Lights System; Approach Lights System; Light Being Used on Radio Failure (Lightgun signals); General Decisions Being Held by SHYO.

PLT460 MCC Simulator Application 0+15 4.5

Before T/O Checks Including Powerplant Checks; T/O Briefing by PF; Rejected T/O; Crosswind T/O; Engine Failure After V1; Selected Emergency Procedures to Include Engine Failure and Rapid Decompression; Windshear During T/O and Landing; Emergency Descent; Incapacitation of a Flight Crew Member; Instrument Flight Procedures Including Holding Procedures; Precision Approaches Using Raw Navigation Data; Flight Director and Automatic Pilot; One Engine Simulated Inoperative Approaches; Non-precision and Circling Approaches; Approach Briefing by PF; Setting of Navigation Equipment; Call-out Procedures During Approaches; Computation of Approach and Landing Data.

PLT464 Emergency Procedures III 12+0 1.5

Emergency Airspeeds; Engine Failure: Emergency Engine Shutdown, Engine Fire on Ground, Engine Failure in Flight; Fuel System; Smoke and Fume Elimination; Cabin Door Unlocked; Emergency Descent; Glide; Electrical; Flight Controls; Environmental Systems; Emergency Exit; Spins; Avionics: Autopilot Failures, Electric Pitch Trim Inoperative, Flight Display Failure Flags, Terrain Awareness Warning System.

PLT470 Standard Operation Procedures III 18+0 3.0

Preflight Inspections; Start-up; Taxi Controls; Before Take-off Controls; Line up and Take-off; After Take-off Controls; Straight and Level Flight; Descent and Approach Controls; Traffic Pattern; Landing; Missed Approach; After Landing Controls; Engine Shut-Down; Climb: Performance setting, Turns, Airspeed restrictions, Straight and level flight, Performance settings, Use of Pilot Operation Handbook (POH); Normal and Steep Turns; Airspeed Changes; Restrictions; Descent.

PLT472 Practice in Flight VII 0+11 2.0

Preflight Preparation Check-list; Take-off; Climb; Cruise Flight; Normal Turns, Steep Turn; Series of Stalls; Speed Changes; Configuration Changes; Slow Flight; Single Engine Training; Descent; Entering Traffic Pattern; Emergency Descent; Traffic Pattern; Final Approach; Landing; Using FD and AIP; Fletner Technique; Radio Procedures; Emergency Procedures; Crew Cooperation; Using S/S System; ATC Readback; SID Procedures; ASR Procedures: Point designation, Flight planning, Calculating time/fuel, Descent briefing, Holding, Instrument approach procedures, Circle to land.

PLT475 Avionics II 12+0 4.0

Primary Flight Displays (PFD); Multifunction Flight Display (MFD); Display Control Panel (DCP); Reversionary Panel (RP); Radio Tuning Unit (RTU); Control Display Unit (CDU); Cursor Control Panel (CCP); Secondary Flight Display System (SFDS); Flight Guidance Panel (FGP); Audio Panel; WX Radar; Cockpit Voice Recorder (CVR). All systems Advisory, Warnings and Cautions messages.

PLT478 Flight Management System 28+0 5.0

Controls and Indicators; Navigation System Description; FMS (Flight Management System) Operation; Company Data Link; ATC (Air Traffic Control) Data Link; FMC (Flight Management Computer) Preflight; Take-off and Climb with Flight Management Computer; Cruise with Flight Management Computer; Descent and Approach with Flight Management Computer; Flight Management Computer Messages.

PLT480 Situational Awareness in Pilots 2+0 5.0

Introduction to Situational Awareness: Definition and Importance of Situational Awareness; Levels of Situational Awareness; Components of Situational Awareness; Factors Affecting Situational Awareness: Workload, Fatigue, Stress, Burnout, Physiological Factors, Lack of Communication, Lack of Experience/Training, Cognitive Bias, Spatial Disorientation; Measuring Situational Awareness: Tools and Methods; Cockpit Design for Situational Awareness; Accident/Incident Case Studies.

PLT482 Normal Procedures III 12+0 2.0

Airspeeds for Safe Operation; Procedures by Flight Phase: Preflight Inspections, Before Engine Starting, Engine Starting (Battery and External Power), Engine Clearing, Before Taxi and Taxi, Before Takeoff, Takeoff, Climb, Cruise, Icing Conditions, Descent, Before Landing, Normal Landing, After Landing, Shutdown and Securing; Other Procedures: Oxygen Duration, Cold Weather Procedures, Icing Flight, Traffic Alert and Collision Avoidance System, Using Ground Communications Power; Air Start; Systems; Cracked or Shattered Windshield; Crack in Any Side Window (Cockpit or Cabin); Severe Icing Conditions; Avionics.

PLT484 Introduction to Aircraft Types III 18+0 1.5

Engine Systems: Generator and electrical load limits, Temperature limits; Fuel System: Fuel system schematics, Fuel pump operation; Oil System: Types of oil used, Oil system schematics, Oil pumps and operation, Temperature limits; Starter System: Starter limits; Propeller System; Airspeeds: Straight and level flight, Climb and descent airspeeds; Maximum Weights: Maximum take-off, Landing and loading weights; Maximum Load Coefficient; Fuselage System.

PLTSJ402 Internship 0+2 5.0

Information about Internship: Purpose, Method, Process, Professional Awareness: Scope of the profession, Scope of aviation professions, Employability, Operation Management in Airline Operators: Technical reviews of airline companies operating in the field, Fleet and flight Destinations review, Airline flight scheduling; Operation Management in Airport: Ground handling management, Cargo operations management; Scope of Technical Services at Airports

PSİ102 Psychology 3+0 3.5

What is Psychology?: Theoretical developments, Major Sub-Disciplines and methodology; Growth and Development; Motivation and Defense Mechanisms; Attention and Perception; Learning: Behavioral and cognitive approaches; Verbal Learning and Memory; Language and communication; Personality; Abnormal Behavior: Causes, Types and treatment.

PZL302 Marketing Management 3+0 4.5

Concept of Marketing; Evolution of Marketing; Functions of Marketing; Environmental Conditions of Marketing; Marketing Information Systems and Marketing Research; Market Concept; Market Segmentation and Target Market Selection; Customer Behavior in Industrial Markets; Product; Price; Distribution Channels and Physical Distribution; Sales Promotions; International Marketing.

PZL410 Airline Marketing 2+0 3.0

The Marketing Concept; The Market for Air Transport Services; Airline Industry-Marketing Environment; Airline Marketing Strategy; Product Analysis for Airlines; Problems of Pricing; Distribution of Product; Selling The Airline Product; Policies of Advertising and Promotion; Total Quality Management.

REK242 Sports Aviation 1+2 3.0

Introduction to Air Sports: History of aviation; Air Sports Institutions and Organizations; Air Sports: General aviation, Acrobatics, Ultralight planes, Microlight planes, Gyrocopters, Gliders, Sky diving, Hang gliders, Hot air balloons, Paragliders, Aeromodelling; Paragliding: Paragliding history, Paraglider supplies, Paraglider aerodynamics, Paraglider controls and management, Meteorology, Paraglider safety, Paragliding air traffic rules, Paragliding emergency, First aid, Paraglider folding, Maintenance and protecting, Paragliding ground practicing.

RTV281 Digital Literacy 2+2 4.0

Internet Technology and Uses; Abbreviations on Internet Addresses; Accessing Information over the Internet; Effective Participation on the Web; Web Literacy Reading Skills and Competencies; Terms and Concepts in New Media; Social media: Social Media Literacy Components; Social Media Security Threats and Precautions: Malware on the Web, Access to Reliable, Accurate and Updated Information in the Web Environment; Misinformation and Disinfection Concepts; Information Usage and Sharing in the Web Environment; Web Ethics: Privacy and Privacy in Social Media Use.

RUS255 (Rus) Russian I 3+0 4.0

Russian Alphabet; Transcriptions of Sounds in Russian; Russian Ortography; Phonetic Perception of Sounds; Consonants and Vowels; Intonation and Stress; Nouns: Proper and Common Nouns; Masculine, Feminine and Neutral Nouns; Russian Names for Men and Women; The Use of Number with Nouns; Greeting Structures; Asking for Directions; Introducing Oneself; Asking and Telling the Time; Patterns Used in Shopping; Patterns Used in Telephone Conversations.

RUS256 (Rus) Russian II 3+0 4.0

Plural Nouns; Construction of Plural Nouns: Plural-only and Singular-only Nouns; Adjectives: Types of adjectives, Forms of Adjectives; Numbers: Different Types of Numbers; Verbs: Types of verbs; Infinitives; Tenses: Present Continuous Tense, Past Tense, Future Tenses; Action Verbs.

SAĞ102 First Aid 2+0 2.5

Social Importance of First Aid; Aims of First Aid; Precautions To Be Considered by The One Who Will Apply First Aid; Human Body; First Aid Materials; Strangulations and Supplying Respiration; Stopping Bleedings and Supplying The Blood Circulation: External and internal bleeding signs and first aid, Recognition of blackout of consciousness and first aid, Shock causes and recognition of shock related to bleeding and first aid, Coma degrees and first aid, First aid in heartbeat stopping, Applying cardiopulmonary resuscitation (CPR) and artificial respiration together; Injury Types and First Aid; Burn and Boils; Fractures, Dislocations and Spraining; Poisonings, Freezing, Hot and Electric Shocks; Communication; Preparation of Injured Person for Carrying and Carrying Types.

SAĞ401 First Aid 18+0 3.0

Description of health; General factors threatening health; Metabolism of human; How our organs work and how they get ill; Ways of protecting from illness; General information of rehabilitation and treatment; Way of the protecting from contagion and terminal illnesses; Harmful habits and their effects of health; First aid for accidents and illnesses; Description, aims and practice of first aid; Basic approaches and mission of first aid man; First aid practices of bleeding, broken (arms, legs etc.), weather worn, boiling, freezing, sunstroke, to be poisoned, choking, problems of respiratory and cardio.

SAN155 Hall Dances 0+2 2.0

Basic concepts. The ethics of dance, Dance Nights, Dance Costumes, National International Competitions and rules/grading, Basic Definitions, Classifications of Dances: Social Dances; Salsa, Cha Cha, Samba, Mambo, Jive, Rock'n Roll, Jazz, Merenge; Flamenko, Rumba, Passa -Doble, Argentina tango, Vals, Disco, Quickstep, Foxtrot, Bolero, European Tango: Ballroom Dances; Sportive Dances; Latin American Dances; Samba, Rumba, Jive, Passa-Doble, Cha Cha, Standart Dances; European Tango, Slow vals (English), Viyana vals, Slow foxtrot, Quickstep.

SHU101 Introduction to Civil Aviation 2+0 3.5

Historical Development of Civil Aviation in World: Definition of Civil Aviation; Civil Aviation Activities; International Civil Aviation System: Conventions, Organizations, Regulations, Bilateral agreements, Air traffic rights; National Civil Aviation Regulations: General and commercial aviation; National Civil Aviation System; Airports: Definition and facilities, Airside and landside, Terminal design; Air Transportation in World and Turkey: Privatization, Mergers and alliances; Definition of Civil Aviation; Historical Development of Civil Aviation; Civil Aviation Activities: Air transportation, Training, Airport and Ground Services, Air traffic control and navigational services, Aircraft manufacturing and maintenance; International Civil Aviation Organizations and Regulations: ICAO, IATA, JAA: JAR-OPS, JAR 145, JAR 66, JAR 147, JAR Maintenance, The role of JAA, The role of contracting nations? authorities; Relationship with the Other Aviation Associations; National Civil Aviation Organizations and Regulations.

SHU102 Meteorology 3+0 5.5

Atmosphere; ICAO Standard Atmosphere; Pressure: Pressure systems, QFE, QNH, QNE; Temperature; Humidity; Wind: Direction and speed units, General circulation, Monsoon cyclone; Visibility: Runway visibility; Clouds: Types of clouds, Amount of clouds, Ceiling; Meteorological Events (rain, fog, etc); METAR; Trend Type Runway Landing Forecast; SPECI; Coding Examples: TAF, AMD, Reading examples; Tropopause; Thunder Storms and Flying in Thunder Storms? Turbulence; Wind Shear; Jet Stream; Inversion; Advection, Icing and Its Effects on Aircraft; Air Mass; Front; Important Air Charts; Flight Forms.

SHU103 Flight Theory 2+0 3.5

Theory of Flight: Aerostatics, Aerodynamics; Basic Aerodynamics: Physical characteristics of air, Standard atmosphere, Airflow-airflow regions, Components of aerodynamic force, L/D ratio; Wing: Geometrical, structural and aerodynamic characteristics, Wing configurations, Flaps; Fuselage: Geometrical, structural and aerodynamic characteristics; Landing Gear: Types and components; Flight Control Surfaces: Primary flight control surfaces, Tabs; Aircraft Power plant: Reciprocating engines and propeller, Gas turbine engines.

SHU108 Air Transportation 3+0 4.5

Transportation Systems; Description And Comparison Of Transportation Subsystems; Air Transportation; Structure of Air Transportation; Economic and Social Effects and Benefits of Air Transportation; Components of Air Transportation; Airlines; Airports; Aviation Services; Legislative and Regulatory Bodies and Aviation Authorities; Customers; Regulations in Commercial Air Transportation; Economic Regulations; Technical Regulations; JAA/EASA Regulations; Regulations in Turkey; Air Transportation in the world; Air Transportation in Turkey.

SHU112 Meteorology I 3+0 6.0

The Atmosphere; Pressure and Pressure Systems: Depressions, Anticyclones; Temperature, Density and Humidity; Stability and Unstability; Winds and Upper Winds; Global Circulation; Cloud Formations and Precipitations; Thunderstorms; Turbulence; Icing; Visibility: Fog, Haze, Smog; Air Masses; Fronts: Cold fronts, Warm fronts, Occlusions, Stationary fronts; Weather Charts; Weather Documentations; METAR, TAF, TREND, SPECI.

SHU205 Management Statistics 3+0 6.0

Introduction to Statistics: Description and content of statistics, Classification and representation of data with graphics, Means, Variation measurement, Asymmetric and skewed measurements, Ratios, Fixed variable, Simple and combined indices, Concept about sampling, Sampling techniques, Estimation of sample mean and ratio confidence intervals, Estimation of sample mean and ratio difference confidence intervals; Hypothesis Testing: Null hypothesis, Alternative hypothesis, Type I error, Type II error, Hypothesis testing for one population; Small Sample Theory; Student Distribution, Chi-Square Independence and Homogeneity Tests.

SHU213 Flight Operations 3+0 4.5

Basic Flight Management Principles; AIP and Its Sections; Flight Plan; Meteorological Services for International Air Navigation; Effective Weather Events; Information and Services for Airlines and Flight Crews; Aerodrome Management Rules and Minimum Required Responsibilities; Take-off and Landing Performances; Factors Effective in Take-off and Landing; Flight Management Control, Dispatch Responsibilities; Dispatch Release and Dispatch of Flight; Fuel Planning Principles; Airport Selection and Use.

SHU217 Airport Operations and Equipment 3+0 4.0

Concept of Airport: Airside facilities and equipment; Landside Facilities and Equipment; PAT Area: PAT area of marking and lighting; Runway Pavement and Methods of Calculation; Declared Distances and Calculations; Instrumental Runways and Specifications; Obstacles: Obstacle limitation surfaces; Visual Aids to Determine Obstacles; Activities of Obstacle Control; Airport Planning: Airport master planning; Layout of Airside and Landside Facilities; Airport Operations: Airport service process; Activities for Conservation of Surface Deposition Conditions; Rescue and Firefighting; Wildlife Control and Reduction.

SHU219 Navigation and Navigation of Aids 3+0 4.0

Fundamentals of Radio Waves; VDF and ADF Systems; VOR (VHF Omnidirectional Range); DME (Distance Measuring Equipment); ILS (Instrument Landing System); MLS (Microwave Landing System); Radar Systems; GPWS (Ground Proximity Warning System; TCAS (Traffic Alert and Collision Avoidance System); GNSS (Global Navigation Satellite Systems); FMS (Flight Management System); RNAV (Area Navigation); CNS-ATM Concept; Navigation Methods; Types of Maps; Calculation of Distance Between Two Points; Estimation of Positions on Map and Reading of Map; Effect of Wind on Flight Course and Speeds Used in Aviation.

SHU221 Sustainability in Aviation 3+0 6.0

Sustainability Approach; Future Targets in Aviation: European aviation targets, American aviation targets; Green Airport; Environmental Management in Aviation; Noise and Waste Management; Influence of Aviation in Climate Change; New Generation Fuels; Emissions; Green Aircraft Engines; Environmental Sustainability Practices in Aviation; Social Sustainability Practices in Aviation.

SHU232 Air Cargo 3+0 6.0

Basic Concepts; Air Cargo and Its Importance: Cargo organizations and regulations; World Air Cargo Market and Trends; Global Trade and Air Cargo Industry; Logistics and Cargo Interaction; Cargo Types; Cargo Handling Procedures: Reservation and rules, Cargo acceptance and checking procedures; Liabilities of Sender, Cargo Agent and Shipper; Aircraft Types and Ground Support Equipment; Unit Load Devices; Loading Tables; Aircraft Loading Procedures; Special Cargo: Dangerous goods, Live animals, perishables etc. Description, Acceptance, Packing, Labeling, Marking and Handling Procedures of Special Cargo; Air Waybill Completion; Cargo Automation.

SHU234 Flight Planning and Monitoring 3+0 6.0

Flight Planning for VFR Flights; Flight Planning for IFR Flights; Fuel Planning-(Pre-flight fuel planning for commercial flights); Fuel Planning-(Specific fuel calculation procedures); Fuel Planning-(Point of Equal Time (PET) and Point of Safe Return (PSR); Pre-Flight Preparation-(NOTAM briefing); Pre Flight Preparation- (Metrological briefing); ICAO Flight Plan (ATS Flight Plan); Flight Monitoring; In-Flight Re-Planning.

SHU236 Flight Performance 2+0 3.0

Basic Definitions: Performance, Performance parameters, Mission profiles; Rules and Related Documents; Load Factors and Design Speeds; Maximum Design Weights; Weight and Range Diagrams; Take-off Limitations; Navigation Limitations; Extended Twin Engine Operations (ETOPS); Landing Limitations, Weight and Balance; Aircraft Performance Categories; General Flight Equations; Take-off, Climb, Cruise, Descent, Holding, Landing; Operation Procedures; Fuel Calculation; Flight Preparation; Flight Management; Flight Tolerances.

SHU240 Passenger Handling Services I 4+0 6.0

General Aviation Information; Aviation Alphabet; Civil Aviation Organizations: Third-party associations at the airport and service relations, Interdepartmental communications; Aviation Terminology; Airline Responsibilities; Passenger Responsibilities; Airport Aircraft Movement Areas, IATA geography, Flight analysis; Passenger Ticket/Ticket Types, Travel document check, Check-in; Luggage Acceptance; Passengers Requiring Special Services, Transfer and operation of disabled passengers; Boarding, Arrival; Irregularities; Lost & Found; SITA, ATFN; Types of Messages, VHF and radio communication principles.

SHU242 Operation and Performance I 4+0 6.0

Aircraft Masses Related to Load and Balance; Importance of Balance: Center of gravity and balance, Moment, Imaginary start lane, Center of gravity, Center of gravity of an empty aircraft; Main Aerodynamic Wing Section; Load and Balance Calculation Methods; Effects of Overloading on Aircraft Performance; Effect of Load on Back and Front Limit of Center of Gravity on Aircraft Performance; Passenger and Freight Transportation in Air Transportation: Mail, Passenger, Baggage,

Cargo regulations and limitations; Load Restrictions, Aircraft limitations; Preparation of Load and Equilibrium Form: Boeing 737, Airbus 320 examples.

SHU244 Ground Handling I 4+0 5.0

Permit Transactions: Definition of permit and legislation information; Scheduled and Scheduled Flights; Third Party Financial Liability Insurance and Aircraft Financial Liability Insurance; Scheduled and Non-Scheduled Flight Application Procedures; Tourist Flights Cargo Charter; Ground Slot Follow-up, Communication; Representative Service Operations; Passenger Services Training; Flight Operation/Ground Slot/Permission Transactions; Lost Baggage/Worldtracer Management; Travel Documents Training; Aircraft Ground Handling Services Training; Communication, Load Control and Balance Training.

SHU246 Dangerous Goods 4+0 6.0

General Philosophy; Limitations; General Requirements for Shipper; Classification, List of dangerous goods; General Packaging Requirements; Packaging Instructions, Marking and labeling; Shipper Declaration and Related Documents; Acceptance Processes, Identification of undeclared dangerous goods; Storage and Loading Procedures, Pilot information; Provisions for Passenger and Crew; Emergency Procedures; Information on Category 1, 2, 3, 4, 5 and 6; Information on Category 7, 8, 9, 10, 11 and 12.

SHU301 Production Management in Service Companies 3+0 6.0

Introduction to Operation/Production Management; Service Structures: Service Industry in Global Economy, Service types, Design and development of goods and services; Capacity Planning; Inventory Management: Material requirements planning, Inventory control; Production Process Design and Development; Quality Management; Airline Operations Management: Demand Forecasting, Network Models, Flight and crew scheduling, Revenue management and analysis; Airport Operations Management: Airport resource management, baggage management; Passenger flows and waitings.

SHU302 Airline Management 3+0 4.5

Air Transportation Systems; Airlines and Their Product: Airlines, Air transportation markets, Supply and demand; Cost Structure of Airlines; Airline Management and Organization; Functional Departments of Airlines; Air Transportation Operations of Airlines; Network Structure of Airlines: Line, Grid and Hub&Spoke Networks; Global Airline Concept; Airline Alliances; Evaluation of Airline Industry; New Management Approaches at Airlines; Airlines and E-Commerce; Air Cargo Transportation.

SHU303 Meteorology II 3+0 6.0

Aviation Routine Weather Report (METAR); Aviation Selected Special Weather Report (SPECI); Volcanic Activity Report; TREND Type Landing Forecast; Terminal Aerodrome Forecast; SIGMET Message; AIRMET Message; GAMET Area Forecast; Significant Weather Chart; Analysis of Upper-Air Charts: Temperature, Wind; Synoptic Chart: Surface pressure chart, 850 hPa, 700 hPa, 500 hPa, 300 hPa pressure charts; Volmet Broadcast.

SHU304 Air Traffic Rules and Services 3+0 6.0

Definitions; Abbreviations; Applicability of Air Rules; Explanation of Air Rules in Terms of Countries; Adaptation of Air Rules; Responsibility for Adaptation of Air Rules; Collision Avoidance; Nearness; Interception; Landing; Lights Used by Airplane; Flight Plan; Appropriateness of Flight Plan; Contents of Flight Plan; Filling Flight Plan Signalization; Rules of VFR; Rules of IFR; Minimum Flight Level; Cancellation of IFR Plan for VFR Flight; Interception of Civil Aircraft and Escort; Illegal Interference.

SHU305 Business Analytics 2+1 6.0

Business Analytics Framework and Basic Concepts: Business analytics and business intelligence, Big data, Spreadsheets; Descriptive Analytics; Predictive Analytics; Business Analytics Software; Data Preparation: Organizing data, Classifying data, Cleaning data, Inspecting data; Data Management and Analysis with Spreadsheets; Data Visualization; Descriptive Analytics with Spreadsheets; Predictive Analytics with Spreadsheets; Data Mini.

SHU308 Aviation Ethics 2+0 4.5

Concept of Ethics; Theory of Ethics: Teleological and Deontological Theories of Ethics, Ethics in Aviation Business; History of Ethics; Components of Ethics: Culture, Social Responsibility; Reasons of Non-Ethical Behaviour: Individual and Organizational Reasons; Ethics in Decision Making Processes; Effects of Non-Ethical Behaviours on Aviation Operations; Case Study in Aviation Industry from Ethical Point of View.

SHU310 Accounting Practices in Aviation Business 3+0 6.0

Aviation Companies and Accounting System: Service industry features, Financial structure in aviation companies, Financial and cost accounting systems; Recording of Aviation Revenues and Other Incomes; Recording of Airline Costs; Recording of Airport Costs; Cost Behavior and Cost Classifications; Cost-Volume-Profit Analysis in Aviation Companies; Profit

Planning and Budgeting in Aviation Companies; Purchasing and Leasing Decisions in Aviation Companies; Performance Management in Aviation Companies.

SHU311 Decision Making Techniques for Business 2+1 6.0
Fundamentals of Decision: Basic concepts, Decision types in business, Decision making approaches, Qualitative and quantitative decision methods, Decision process; Decision Making Under Uncertainty: Maximax criterion, Max-min criterion, Hurwicz criterion, Laplace criterion, Regret criterion; Decision Making Under Risk: Expected value, Maximum probability criterion; Decision Tree and Bayes Theorem; Decision Making with Additional Information: Expected value of perfect information, Expected value of sample information; Multi-Criteria Decision Making: AHP, ANP, TOPSIS; Applications with Excel.

SHU341 Passenger Handling Services II 4+0 6.0
Filling out the Property Irregularity Report (PIR) Form; AHL (Advice if Hold); Reroute; Courtesy AHL Reports and Applications; Lost Baggage; World Tracer Management; Travel Documents Training; Operation and Transfer of Disabled Passengers; Ramp Safety and Apron Rules; Airplane and Passenger Service Equipments and Operations, FOD, De-icing and application procedures; Dangerous Goods Consciousness (Category 9).

SHU343 Operation and Performance II 4+0 6.0
General Aviation Information and Information About Legislation; Load and Special Load Code and Definitions, Special loads; Documentation (Loading Form and Other Forms); Message Types, Communication; Push Back & Head Set; Equipment Used; Introduction and Classification of Vehicles and Equipment; Loading and Unloading - Inconveniences / Near-Miss Conditions; Site Control in Bulk Loads; Providing On-Site Inspection and Safety of Pallets and Containers; Load Planning and Loading; Load & Trim Sheet Preparation.

SHU345 Ground Handling II 4+0 6.0
Operation for Cargo; International Organizations; Aircraft Categories, and Structure and Departments of the Plane, Loading types; Dangerous Materials, Live animals, Deteriorated cargos; Other Special Cargos Consignment Note; Ramp Safety and Apron Rules; Dangerous Goods Awareness; Slot and Permission Training; Meteorology Training; Flight Plan Operations; Communication; Hygiene and Sanitation General Information Training; Catering Handling; Ramp Safety and Apron Rules; Operation Management.

SHU403 Finance in Aviation Companies 3+0 4.5
Importance of Finance in Aviation Companies; Financial Structure of Airlines; Financial Needs and Financial Planning in Air Transportation: Fleet and Network Effect on Financial Needs; Financial Sources for Airlines; Special Financial Problems in Air Transportation; Financial Problems of Airlines in Turkey; Financial Structure of Airports and Financial Needs; Airport Financial Sources and Financing Methods; Financial Implementations of Other Aviation Companies.

SHU404 Airport Management 3+0 4.5
Patterns of Airport Ownership and Management; Airport Privatization; Airport Infrastructure Problems; Economic Characteristics and Financial Structures of Airports; Airport Revenue and Cost Structure; Aeronautical Charges and Pricing Policies: Alternative pricing strategies; Relationship Between Airport Design and Revenue: Developing airport commercial strategies; Measuring Airport Performance; Present Situation and the Future of Airports in Management Perspective in Türkiye.

SHU405 Aviation Safety 3+0 4.5
Aviation Safety Concept; Factors Affecting Aviation Safety; Human Factors in Aviation Safety: Human performance, physiological and psychological factors, Risks, Knowledge, skills and experience, Team work; Passenger Safety; Crew Resource Management; Human Factors in Aviation Maintenance; Human Factors in Air Traffic Control; Human Factors in Airport Activities; Improving Safety Culture of Aviation Organizations; Accident Investigation; Flight Safety and Security.

SHU411 Airport Terminal Management 3+0 4.5
Concepts and Terms; Airport Terminal Functions; Types of Airport Terminal Design; Airport Operational Departments; Operational Services in Airport Terminal; Non-Aviation Services; Terminal Operational Service Standards; Aviation Alphabet; National and International Organizations Regulating Aviation; Airport Facilities; Aircraft Services; Passenger Services; Terminal Simulation Applications.

SHU412 Airline Fleet Planning 2+0 3.0
Fleet Concept and Fleet Planning in Airlines: Airlines mission, strategies, and their relationship with fleet planning, Relationship between marketing and fleet planning, Economic and environmental effects of fleet planning, Flexibility of fleet planning; Organization of Fleet Planning: Types of Aircraft characteristics, comparison of aircraft in terms of performance, operation, technology, ergonomy and point of view marketing, Evaluation for airport characteristics, flight

rules and networks; Operational Cost Analysis for Fleet Planning: Aircraft acquisition and leasing costs, Maintenance costs, Ground handling costs, Landing and navigation costs, Fuel costs, Flight crew costs, Other constraints relevant of costs.

SHU416 Aircraft Maintenance Management 2+0 3.0
Fundamentals of Aircraft Maintenance; Technical Regulations on Aircraft Maintenance; Types and Levels of Aircraft Maintenance; Tasks and Activities; Aircraft Maintenance Concepts and Primary Maintenance Process; Development of Initial Maintenance Program; Analyzing the Aircraft Maintenance Department in a Typical Airline; Major Processes in an Aircraft Maintenance Department; Documentation of Aircraft Maintenance; Outsourcing of Aircraft Maintenance Activities; Aircraft Maintenance on Financial and Operational Leasing; Aircraft Maintenance Costs.

SHU424 Aircraft Maintenance and Reliability Management 3+0 3.0
Fundamentals of Aircraft Maintenance; System Approach and Aircraft Maintenance Activities; Concept of Reliability and Aircraft Maintenance; Types and Levels of Aircraft Maintenance; Aircraft Maintenance Tasks and Activities; Aircraft Maintenance Regulations and Maintenance Methods; Reliability Centered Maintenance; Maintenance Guides; Development of Maintenance Program; Development of Customized Aircraft Maintenance Program; Aircraft Maintenance Planning; Aircraft Reliability Program; Aircraft Maintenance Costs; Human Factors on Aircraft Maintenance.

SHU426 Transportation Policies 2+0 4.5
Definition and Importance of Transportation; Transportation Industry; Transportation Policy and Inter-systems Coordination; Transportation Modes; Intermodal Transportation; Changes Affecting Transportation Industry; European Union Transportation Strategies and Policies; Analysis of Turkey's Transportation Policies; Air Transportation Industry Analysis; Impacts of Changes on Air Transportation Industry; Strategic Management in Air Transportation Industry; Analysis of internal and external environment; Investment strategies and planning; Strategic management case studies.

SHU428 Logistics Management 2+0 4.5
The Concept of Logistic; Development of Logistic Management; Logistic and Services; Consumer Services; Supply Chains; Production/Service Activity Process; Integration of Logistic Activities; Integrated Logistic; Global Logistic; Elements of Logistic; Network Design; Information Systems; Transportation; Stock Procedures; Package and Distribution; Tools and Supplies; Logistic Sources; Logistic Management Applications; Organization; Planning; Costs; Pricing; Performance Measurement and Reporting; Examples; Applications of Logistic Management in Airlines.

SHU432 Innovation Management 2+0 4.5
Introduction to Innovation Management; Innovation Management: Key Concepts; Sources of Innovation; Models of Innovation; Standards and Design; Market Entry Timing of Innovative Products and Services; Definition of Organization's Strategic Direction; Selection of Innovation Projects; Collaboration Strategies for Innovation; Protecting Innovation; Management of New Product Development Process; Management of New Product Development Teams; Innovation Examples in Aviation Industry.

SHU436 Planning and Scheduling of Airline Operations 3+0 6.0
Planning Optimization: Networks, Network flow models; Flight Scheduling: Hub and spoke, Route development and flight-scheduling process, Load factor and frequency; Fleet Assignment: Indicator definitions, Mathematical model; Aircraft Routing: Maintenance requirements, Mathematical model; Crew Scheduling: Crew pairing, Crew pairing mathematical model, Crew rostering, Crew rostering mathematical model; Airline Manpower Planning: Mathematical model; Airline Irregular Operations: Mathematical model; Fuel Management System; Airport Gate Assignment: Mathematical model; Aircraft Boarding Strategy; Runway Capacity Planning.

SHUSJ404 Internship I 0+2 2.5
General Information on Internship: Purpose, Method, Process; Professional Awareness in Aviation: Professional expertise in aviation, Scope of aviation professions, Application areas of aviation professions; Aviation Occupations and Employability; Career Planning in Aviation Management; Vocational Education and Specialization in Aviation; Sectoral Applications in Aviation; Operations Management in Aviation Businesses; Writing and Presenting Internship Report.

SHUSJ406 Internship II 0+2 2.5
General Information on Internship: Purpose, Method, Process; Professional Awareness in Aviation: Professional expertise in aviation, Scope of aviation professions, Application areas of aviation professions; Aviation Occupations and Employability; Career Planning in Aviation Management; Vocational Education and Specialization in Aviation; Sectoral Applications in Aviation; Types of Enterprises and Licensing in Aviation; Operations Management in Aviation Businesses; Writing and Presenting Internship Report.

SHUSJ408 Internship III 0+2 2.5
General Information on Internship: Purpose, Method, Process; Professional Awareness in Aviation: Professional expertise in aviation, Scope of aviation professions, Application areas of aviation professions; Aviation Occupations and

Employability; Career Planning in Aviation Management; Vocational Education and Specialization in Aviation; Sectoral Applications in Aviation; Operations Management in Aviation Businesses; Project Management in Aviation Businesses; Writing and Presenting Internship Report.

SNT155 History of Art 2+0 2.0

History of Civilization and Evolution of Art: Prehistory to Present; Concepts and Terminology in Art with Samples; Interrelation among Art-Religion and Society; Effects of Religion on Artistic Development; Reflections and Interpretations of Judaism, Christianity and Islam on Art; Renaissance: Emergence, Effects, Artists, Works of Art; Architecture and Plastic Arts; Art in the 19th and 20th Centuries: Relevance of the main historical events of the period.

SOS107 Behavioral Sciences 2+0 3.0

Introduction to Sociology and the Sociological Method; The Emergence of Science of Sociology and Sociological Theories; Society and Social Structure; Culture; Socialization; Social Groups; The Family; Social Stratification and Social Change; Introduction to Psychology; Psychology of Lifelong Development; Motives and Emotions; Sensation and Perception; Learning; Psychology of Personality and Personality Theories; Social Effects on Behavior; Attitudes.

SOS154 Man and Sociology 2+0 3.0

Sociology; Definition; Development of Sociology; Methods and Methodology in Social Sciences: Research procedure, Scientific method and sociology, Validity and reliability, Ethics of Social Research; Culture and Society; Family and Gender Issues; Environmental Issues and Society; Media and Communications; Stages of Industrialization; Industrial Revolution and its Consequences; Urban Life and Urbanization: Urban problems in Turkey; Social Inequalities; Social Stratification.

SOS155 Folkdance 2+0 2.0

Dance in Primitive Cultures; Dance in Earlier Civilizations; Dance in the Middle Age and Renaissance; Dance in the 18th and 19th Centuries; Dances of the 20th Century; Ballet; Turkish Dances; Emergence of Folkdance; Anatolian Folkdance: Classification, Accompanying instruments; Methods and Techniques of Collecting Folkdance; Problems in Collecting Folkdance; Teaching of Folkdance; Adapting Folkdance for Stage: Stage, Stage aesthetics and Choreography, Orientation and choreography.

SOS312 Organizational Behavior 3+0 4.5

Fundamentals of Organizational Behavior; Historical Perspective; Research Techniques; Individual Organizations and Personality; Attitudes and Job Satisfaction; Personal Differences: Biographical characteristics, Abilities, Learning; Organizational Culture; Social Groups and Group Dynamics in Organizations; Participative Management; Motivation Process and Theories of Motivation; Leadership and Leadership Theories in Organizations; Conflict in Organizations; Stress and Stress Management; Organization, Environment and Technology; Organizational Change; Organizational Development; Team Work in Organizations; Power and Politics.

TAR165 Atatürk's Principles and History of Turkish Revolution I 2+0 2.0

Reform efforts of Ottoman State, General glance to the stagnation period, Reform searching in Turkey, Tanzimat Ferman and its bringing, The Era of Constitutional Monarchy in Turkey, Policy making during the era of first Constitutional Monarchy, Europe and Turkey, 1838-1914, Europe from imperialism to World War I, Turkey from Mudros to Lausanne, Carrying out of Eastern Question, Turkish Grand National Assembly and Political construction 1920-1923, Economic developments from Ottomans to Republic, The Proclamation of New Turkish State, from Lausanne to Republic.

TAR166 Atatürk's Principles and History of Turkish Revolution II 2+0 2.0

The Restructuring Period; The Emergence of the fundamental policies in the Republic of Turkey (1923-1938 Period); Atatürk's Principles, and Studies on Language, History and Culture in the period of Atatürk; Turkish Foreign Policy and Application Principles in the period of Atatürk; Economic Developments from 1938 to 2002; 1938-2002 Period in Turkish Foreign Policy; Turkey after Atatürk's period; Social, Cultural and Artistic Changes and Developments from 1938 to Present.

TER203 Thermodynamics 4+0 4.0

Temperature: Thermometers and temperature scales, Celsius, Fahrenheit, Kelvin; Definition of Heat; Heat Capacity: Specific heat; Heat Transfer: Convection, Radiation, Conduction; Volumetric Expansion; First and Second Law of Thermodynamics; Gases: Ideal gas laws, Specific heat at constant volume and constant pressure, Expanding gas; Isothermal and Adiabatic Expansion and Compression; Entropy: Clasius inequality, Law of entropy increase; Engine Cycles: Constant volume and constant pressure refrigerators and heat pumps; Second Law Analysis in Engineering: Energy, Reversible work and irreversibility; Gas Power Cycles: Carnot cycle and its importance in engineering, Brayton cycle; Latent Heats of Fusion and Evaporation; Thermal Energy; Heat of Combustion.

THU203 Community Services 0+2 3.0
Various Community Projects: Helping young students during their study periods or after school study sessions, Aiding the elderly in nursing homes, helping disabled individuals with various tasks, helping social services and aiding children with their education etc., take part in the projects which raise environmental awareness, Integrating with the community and enabling use of knowledge accumulated in the courses.

TİY121 Introduction to Theatre 2+0 3.0
Fundamentals of Theatre; Historical Developments of Theatre; Important Periods in World Theatre; Study of Contemporary Interpretations: Plays and Actors; Application of Basic Acting Techniques; Critiquing; Evaluation; Improvisation.

TİY152 Theatre 2+0 2.5
Theatre as a Cultural Institution: Relation of culture and theatre; The Place and Importance of Theatre in Culture; Theatre as a Communication Art: Definition of theatre, Origin and evolution of theatre, Aesthetic communication; Elements of Communication in Theatre: Decor, Costume, Stage, Actor, Director; Theatre Management: Historical development, Administration and Organization; Art Sociology: Theatre and society; Reflections of Cultural Issues in Turkish Plays; Reflections of Cultural Issues in Turkish Plays.

TİY308 Republic Era Turkish Theatre 2+0 3.0
Republic Era Turkish Theatre: Political, Social, Cultural Art Life; Theatre Concepts; Western Theatre; Theatre Perception; Effects of Western Theatre on Turkish Theatre; Dramatic Types; Acting Methods, Directing, Playwriting, Dramatic Styles; Theatre Buildings; Directing Techniques; Analyzing Developments of Theatre; Theatre Education; State Theatres; Private Theatre Companies.

TKY304 Quality Assurance Systems 2+0 3.0
General: Description of quality, Quality control; Requirements of Quality Assurance System; Role of Quality Assurance System in Total Quality Management: Description of total quality management; Quality Standards; Detailed Understanding Of ISO 9000 Series; Quality Standards in Aircraft Maintenance; JAR-145: General, Maintenance records, Maintenance organization exposition, Maintenance procedures and quality system, Audits, Facility requirements, Approval and extent of approval.

TKY304 (Eng) Quality Assurance Systems 2+0 3.0
General: Description of quality, Quality control; Requirements of Quality Assurance System; Role of Quality Assurance System in Total Quality Management: Description of total quality management; Quality Standards; Detailed Understanding Of ISO 9000 Series; Quality Standards in Aircraft Maintenance; JAR-145: General, Maintenance records, Maintenance organization exposition, Maintenance procedures and quality system, Audits, Facility requirements, Approval and extent of approval.

TRS131 Technical Drawing and Standards 4+0 4.0
Introduction: Basics, Aeronautical and other applicable standards including ISO, AN, MS, NAS and MIL, Program interface (Creo Parametric); 2D Design: Creating geometries, Using 2D tools, Datum features; 3D Design: Extrude, Revolve, Rib, Sweep, Blend, Hole commands, Rounding corners, Chamfer, Creating object groups, Copying and mirroring objects, Creating patterns, Measuring and inspecting models; Assembly: Assembling with constraints, Assembling with connections, Exploding assemblies; Mechanism Design: Creating mechanism connections, Configuring motion, Mechanism analysis; Drawing: Creating layout, Views, Annotations and tolerances, Wiring and schematic diagrams.

TÜR125 Turkish Language I 2+0 2.0
Language: Characteristics of language, Relationship between language and thought and language and emotion, Theories about the origin of languages, Language types, The position of Turkish Language among world languages; Relationship Between Language and Culture; Historical Progress of the Turkish Language; Alphabets Used for Writing in Turkish; Turkish Language Studies; Turkish Language Reform; Phonetics; Morphology and Syntax; The Interaction of Turkish Language with Other Languages; Wealth of Turkish Language; Problems Facing Turkish Language; Derivation of Terms and Words; Disorders of Oral and Written Expression.

TÜR126 Turkish Language II 2+0 2.0
Composition: Written composition, Paragraph and ways of expression in paragraphs; Punctuation; Spelling Rules; Types of Written Expression and Practices I: Expository writing; Types of Written Expression and Practices II: Narrative writing; Academic Writing and Types of Correspondence; Reading and Listening: Reading, Reading comprehension strategies, Critical reading; Listening; Relationship between Listening and Reading; Oral Expression: Basic principles of effective speech; Body Language and the Role of Body Language in Oral Expression; Speech Types; Principles and Techniques of Effective Presentation; Some Articulatory Features of Oral Expression.

UCK102 (Eng) Theory of Flight 3+0 4.0

Aerodynamics Basics; Aerodynamic Forces in Flight Phases; Types of Drag; Wing Design; Stability and Control; Flight Instruments; Aircraft Structures and Systems; Flight Envelopes; Aircraft Performance; High-Speed Flight; Flight Dynamics; Human Factors in Flight; Weather and Flight; Emergencies and Abnormal Situations.

UCK202 (Eng) Circuits, Signals and Systems 3+0 4.5

Basic Components and Electric Circuits; Open Circuit and Short Circuit Concepts; Resistance and Ohm's Law: Independent and dependent voltage and current sources, Kirchoff's current and voltage law; Analysis Methods: Loop analysis, Nodal analysis, Source transformations, Superposition theorem, Thevenin and Norton equivalent circuits operational amplifiers; Capacitors and Inductors; Basic RL and RC Circuits: Natural and forced response of RL and RC circuits, The RLC circuit, Natural and forced response of RLC circuits; Laplace Transform: Definitions and properties, Circuit analysis in s-domain, Transfer function; Stability; Frequency response; Filters; Fourier Transform: Definitions and properties.

UCK301 (Eng) Flight Mechanics 3+0 5.0

Basic Definitions: Coordinate systems and axes; Wing Planforms; Relationship between Lift, Weight, Thrust and Drag; Lift Augmentation: Flaps, Leading edge slots, Slats, Boundary layer control, Slat and slotted flap combinations; Flight Controls: Aerodynamic balancing, Power operated control, Mass balance, Three-axis control, Tabs; Steady-State Flights: Steady level flight and performance characteristics; Steady climb, steady descent and gliding, Glide ratio; Basic Maneuvers: Coordinated turn, Load factor, Bank angle, Stall; Flight Envelope and Structural Limitations; V-speeds; Flight Stability: Basic concepts, Static and dynamic stability, Effects of high speed flight on stability, Longitudinal stability, Pitching moment, Lateral stability, Directional stability.

UCK303 (Eng) Aerodynamics 4+0 5.0

Introduction to Aerodynamics; Fundamentals of Fluid Mechanics; Aerodynamic Forces and Moments; Airfoil and Wing Theory; Boundary Layer Theory; Compressible Flow; Wind Tunnel Testing; Flow Visualization Techniques; Computational Fluid Dynamics (CFD); Aerodynamic Design and Optimization; High-Lift Devices and Control Surfaces; Atmospheric and Environmental Effects; Advanced Topics and Future Trends in Aerodynamics.

UCK305 (Eng) Measurement Techniques and Sensors 2+0 3.0

Introduction to Measurement Techniques: Overview of measurement systems in aerospace engineering, Importance of accurate measurements in aerospace applications, Basic principles of measurement: accuracy, precision, resolution; Sensors and Transducers: Principles and Classification: Types of sensors: mechanical, electrical, optical, thermal, and chemical, Operating principles and characteristics of sensors, Transducers: conversion of physical quantities to electrical signals; Pressure and Temperature Measurement: Pressure sensors: piezoelectric, capacitive, and strain gauge types, Temperature sensors: thermocouples, resistance temperature detectors (RTDs), thermistors, Calibration techniques for pressure and temperature sensors; Flow Measurement Techniques: Different methods for measuring fluid flow: differential pressure, electromagnetic, ultrasonic, and vortex shedding, Applications of flow measurement in aerospace systems, Calibration and accuracy considerations for flow sensors; Force, Torque, and Strain Measurement: Force and torque sensors: strain gauge, piezoelectric, and load cells, Strain measurement techniques: electrical resistance strain gauges, optical strain measurement, Applications in aerospace structures and propulsion systems; Acceleration and Inertial Measurement Units (IMUs): Accelerometers: piezoelectric, capacitive, and MEMS types, Gyroscopes: mechanical, ring laser, and fiber optic gyroscopes, Introduction to IMUs and their applications in navigation and guidance systems; Optical Measurement Techniques, Principles of optical measurement: interferometry, laser-based techniques, Fiber optic sensors: strain, temperature, and pressure sensing applications, Optical metrology in aerospace manufacturing and structural health monitoring; Electromagnetic Measurement Techniques: Principles of electromagnetic measurement: eddy current, magnetic induction, Applications of electromagnetic sensors in aerospace: position, proximity, and speed sensors, Electromagnetic compatibility (EMC) considerations in sensor design; Acoustic and Ultrasonic Measurement: Acoustic sensors: microphones, hydrophones, and sound intensity sensors, Ultrasonic sensors: principles and applications in non-destructive testing (NDT), Noise measurement and vibration analysis in aerospace environments, Remote Sensing and Imaging Techniques, Remote sensing technologies: RADAR, LIDAR, and infrared imaging, Applications of remote sensing in aerospace: environmental monitoring, weather forecasting, Image processing techniques for aerospace applications; Data Acquisition Systems and Signal Processing.

UGB105 Theory of Flight 3+0 3.5

Aeroplane Aerodynamics: Aerostatics, Aerodynamics, Wing section, Boundary layer control, Stall; Flight Control Surfaces: Aileron, Spoiler, Elevator, Stabilator, Variable incidence stabilizer, Canard, Elevon, Taileron; Rudder, Rudder limiters, Ruddervator, Tabs, Control surface bias, High lift devices (flaps, slots, slats, flaperons), Airbrakes, Ground spoiler, Aerodynamic and mass balance; High Speed Flight: Speed of sound, Subsonic, transonic and supersonic flight, Shock waves, Mach number, Critical mach number, Sweep angle, Buffet, Aerodynamic heating, Area rule, Supersonic engine inlets.

UGB202 Electronic Fundamentals I 2+1 3.5

Diodes: Diode symbols, characteristics and properties, Diodes in series and parallel, Main characteristics and use of silicon controlled rectifiers (thyristors), Light emitting diode, Photo conductive diode, Varactor (varicap), Rectifier diodes;

Functional Testing of Diodes; Transistors: Transistor symbols, Component description and orientation, Transistor characteristics and properties; Integrated Circuits; Printed Circuit Boards: Description and use of printed circuit boards; Servomechanisms: Open and closed loop systems, Feedback, Follow up, Analogue transducers; Operation Principles and Use of Synchro System Components/Features: Resolvers, Differential, Control and torque transformers, Inductance and capacitance transmitters.

UGB203 Aircraft Materials II 3+0 4.0

Introduction of Nonmetallic Materials; Classification of Composite Materials; The Selection Criteria for Aircraft Structure; Specific Examples of Aviation Application of Nonmetallic Materials; Fiber Reinforcements; Matrix Materials; Atomic and Micro Structure of Composite Materials; Mechanical Behaviors of Composite Materials; Fabrication Techniques of Composite Structures; Environmental Degradation of Composite Structures; Assembly Methods of Composite Structures; Maintenance and Repair Techniques of Composite Structures.

UGB204 Aircraft Powerplants (TEI/TUSAS) 5+9 12.0

Health of Workers and Security of Work; Technical English; Main Engine Knowledge of F-110 and F100: Air inlet, Compressors, Combustion chamber; Turbine Section: Types of turbine blades and their operating characteristics; Exhaust; Bearings and Seals; Lubricants and Fuels; Lubrication Systems; Fuel Systems; Air Systems; Starting and Ignition Systems; Engine Indication Systems; Power Increasing Systems; Baroscopic Control; Quality Control Systems; Paper Works of Engine Installation; Education of Engine Installation Workshop; Engine Test; Engine Storage and Preservation.

UGB208 Aircraft Powerplants (HUBF) 4+4 12.0

Main Engine Knowledge: Air inlet, Compressors, Combustion chamber; Turbine Section: Types of turbine blades and their operating characteristics; Exhaust; Bearings and Seals; Lubricants and Fuels; Lubrication Systems; Fuel Systems; Air Systems; Starting and Ignition Systems; Engine Indication Systems; Power Increasing Systems; Engine Test; Engine Storage and Preservation.

UGB307 Electronic Fundamentals II 2+1 4.0

Numbering Systems: Demonstration of conversions between the decimal and binary, octal and hexadecimal systems and vice versa; Data Conversion: Analogue data, Digital data, Operation and use of analogue to digital, and digital to analogue converters; Data Buses; Logic Circuits: Identification of common logic gate symbols, tables and equivalent circuits, Their use in schematic diagrams of aircraft systems, Interpretation of logic diagrams; Basic Computer Structure: Computer terminology, Computer technology used in aircraft systems; Fibre Optics: Fibre optic data bus, Fibre optic related terms, Terminations, Couplers, Control and remote terminals, Use of fibre optics in aircraft systems.

UGB315 Gas Turbine Engine Theory 3+0 4.0

Potential and Kinetic Energy; Newton's Laws of Motion, Brayton Cycle; Definition of Force, Work, Power, Energy, Velocity, Acceleration; Turbojet, Turbofan, Turboshaft, Turboprop; Convergent, Divergent and Variable Area Exhaust Nozzles; Thrust Reverser and Noise Reduction; Turboprop Engine: Reduction gears, Free turbine, Gas-coupled propeller, Propeller control, Overspeed drivers; Turboshaft: Arrangements, Drive systems, Reduction gearing, Couplings, Control systems.

UGB320 Aircraft Hardware and Applications II 3+3 4.5

Springs: Types of springs, Materials, Characteristics and applications, Inspection and testing of springs; Bearings: Purpose of bearings, Loads, Types, Material, Construction, Testing, cleaning and inspection of bearings, Lubrication requirements, Defects in bearings; Transmissions: Gear types and their application, Gear ratios, Driven and driving gears, Belts and pulleys, Chains, Inspection; Control Cables: Types of cables, Pulleys and cable system components, Bowden cables, Inspection, Aircraft flexible control systems.

UGB322 Gas Turbine Engine Systems I 4+0 4.5

Fundamentals; Engine Performance; Inlet; Compressors; Combustion Section; Turbine Section; Exhaust; Lubrication Systems: Components, Operation principle; Fuel Systems: Components, Operation principle; Air Systems: System lay-out and components; Starting and Ignition Systems: System lay-out and components; Engine Indication Systems: Exhaust gas temperature, Oil pressure and temperature, Fuel flow, Vibration, Engine speed, Engine pressure ratio; Auxiliary Power Units (APUs): Components, Oil, fuel, and starting systems, Stall protection system, Bleed system.

UGB323 Aircraft Hardware and Applications I 3+3 6.0

Safety Precautions-Aircraft and Hangar; Maintenance Practices: Maintenance of tools, Dimensions, Tolerances, Calibration of tools; Tools: Types, Precision measuring tools, Lubrication equipment; Fits and Clearances: Limits for bow, Twist and wear, Shaft and bearings checking standards; Riveting: Riveted joints; Pipes and Hoses: Installation, Inspection and testing of aircraft pipes and hoses; Material Handling: Sheet metal, Composite and non-metallic; Fasteners: Screw threads, Bolts, Studs and screws, Locking devices; Pipes and Unions: Types of rigid and flexible pipes; ATA (Air Transport Association) Definitions of Aircraft Group, System and sub-system.

UGB324 Aircraft Structure and Systems I 4+1 4.5

Structures-General Concepts: Stress analysis and loads affecting the aircraft, Safe life, Fail safe, Damage tolerance, Wing structure, Fuselage and empenage, Materials used in aircraft; Hydraulic Power: System lay-out, Hydraulic fluids, Hydraulic reservoirs and accumulators, Pressure generation, Emergency pressure generation, Filters, Indication and warning systems, Interface with other systems; Landing Gear: Construction, Shock absorbing, Extension and retraction systems, Indications and warnings, Wheels, Brakes, Tyres, Steering, Sensing; Equipment and Furnishings: Seats and belts, Equipment lay-out, Airstairs.

UGB325 Aircraft Electricity Workshop 2+2 5.0

Cables: Types, structures and characteristics, Connectors: Pins, Plugs, Sockets, Insulators, Current voltage rating, Coupling identification codes; General Test Equipment in Avionics: Operation, function and use; Electrical Wiring Interconnection System: Continuity insulation bonding and test, Crimping tools and joint test, Connector pin removal/insertion, High tension and coaxial cable installation test, Wire type identification, Inspection and damage, Wiring protection, Looming and support, Clamps, Sleeving, Shielding, EWIS installations, Maintenance and cleaning; Soldering: Methods, Inspection; Abnormal Events: Lightning strikes and HIRF penetration inspection.

UGB326 Avionic Systems 4+0 4.0

Instrument Systems; Pitot static: Altimeter; Air speed indicator, Vertical speed indicator; Gyroscopic: Artificial horizon, Attitude director, Direction indicator, Horizontal situation indicator, Turn and slip indicator, Turn coordinator; Compasses: Direct reading, Remote reading; Angle of Attack Indicators; Stall Warning Systems; Glass Cockpit; Other Aircraft Indication Systems; System Lay-outs and Operation of Avionic Systems: Auto Flight; Communications; Navigation Systems; On Board Maintenance Systems; Central Maintenance Computers; Data Loading System; Electronic Library System; Printing; Structure Monitoring (Damage Tolerance Monitoring).

UGB328 Non-destructive Inspection Methods 0+3 2.0

Non-destructive Inspection Methods: Application steps of liquid penetrant inspection method; Application Steps of Magnetic Particle Inspection Method; Application Steps of Eddy Current Inspection Method; Application Steps of Ultrasonic Inspection Method; Radiographic Inspection and Evaluation of Radiographic X-Ray Films; Visual and Optical Inspection; Boroscope Control and Discontinuities and Defects of Materials.

UGB407 Aircraft Structure and Systems II 3+0 4.0

Air Conditioning and Cabin Pressurisation: Air supply, Air conditioning system, Pressurisation systems; Safety and warning devices; Oxygen System: Flight crew oxygen system, Passenger oxygen system, Portable oxygen system; Pneumatic/Vacuum System: System lay-out, System sources, User system, Component location, Distribution, Indications and warnings; Water/Waste System: Supply, Distribution, Water heaters, Draining system, Indicators, Corrosion.

UGB409 Maintenance Practices 3+5 6.5

Welding, Brazing, Soldering and Bonding: Welding, brazing and bonding methods and inspection; Aircraft Weight and Balance; Aircraft Handling and Storage: Aircraft taxiing and towing, jaking, chocking, securing, Aircraft storage methods, Refueling/defueling procedures, De-icing/anti-icing procedures, Electrical, hydraulic and pneumatic ground supplies, Effects of environmental conditions on aircraft handling and operation, Disassembly, Inspection, Repair and Assembly Techniques; Maintenance Procedures.

UGB411 Gas Turbine Engine Systems II 4+0 5.5

Exhaust: Thrust reverser systems; Power Augmentation Systems: Operation and applications, Water injection, water methanol, Afterburner systems; Powerplant Installation: Configuration of firewalls, Cowlings, Acoustic panels, Engine mounts, Anti-vibration mounts, Hoses, pipes, feeders, connectors, wiring looms, control cables and rods, Lifting points and drains; Fire Protection Systems: Operation of detection and extinguishing systems; Engine Monitoring and Ground Operation: Procedures for starting and ground run-up, Interpretation of engine power output and parameters.

UGB412 Aircraft Structure and Systems III 3+0 4.0

Fire Protection: Fire and smoke detection and warning systems, Fire extinguishing systems, System tests, Portable fire extinguisher; Fuel Systems: System lay-out, Fuel tanks, Supply systems, Dumping, Venting and draining, Cross-feed and transfer, Indications and warnings, Refueling and defueling, Longitudinal balance fuel systems; Ice and Rain Protection: Ice formation, Classification and detection, ?Anti-Icing Systems: Electrical, Hot air and chemical, De-Icing Systems: Electrical, Hot air, Pneumatic and chemical, Rain repellent, Probe and drain heating, Wiper systems.

UGB415 Applications of Powerplant-Airframe Maintenance 0+3 3.0

Research Techniques: Basic research and applied research, Data collection techniques, Data processing; Research Methods: Subject selection, Subject restriction, Reference collection; Detailed Research on a Subject in Aircraft Structure or Power plant Maintenance: Definition of the problem or the subject in details, Definition of solution techniques or analysis methods, Researching and performing practical works, Results; Reporting: Page set up, Sentence structure, Headings, Abbreviation formats, Figure and table formats, Table of references format.

UGB417 Magnetic Particle and Ultrasonic Inspection 3+0 4.5

Magnetic Particle Inspection: Magnetization theory, Magnetic materials, Hysteresis loop, Magnetizing currents, Current requirements, Process control of magnetic particle inspection, Stationary and portable equipments, Stationary and portable magnetic particle inspection applications; Ultrasonic Inspection: Basic concepts; Velocity, Frequency, Wavelength Relationships; Transducers and Ultrasonic Generation; Sound Propagation and Properties in Different Environments; Snell's Law: Critical angles; Longitudinal-Transverse-Surface Waves; Ultrasonic Systems; Ultrasonic Test Methods; Types of Screen Displays; Ultrasonic Process Controls; Ultrasonic Control Applications.

UGB420 Propeller 3+0 4.0

Fundamentals: Basic propeller aerodynamics, Blade element theory, Angle definitions, Rotational speed, Relative airflow, Propeller slip, Aerodynamic forces, Centrifugal force, Thrust forces, Torque, Vibration and resonance; Propeller Construction: Materials, Blade definitions, Fixed/controllable pitch, Constant speeding propeller, Propeller installation, Propeller pitch/speed control, Pitch change, Feathering, Reverse pitch, Overspeed protection; Synchronising; Ice Protection; Propeller Maintenance: Balancing, Blade tracking, Blade damage, Propeller repair schemes, Propeller engine running; Propeller Storage and Preservation..

UGB422 Environmental Impact Assessment in Aviation 3+0 4.5

Environmental Impact Assessment (EIA): General information, Concepts; Environmental Damages: Human health, Ecosystem quality, Resources; Implementation and Steps of EIA: Life Cycle Assessment (LCA); Environmental Impact Assessment in Aviation: Airlines, Aircrafts, Aviation-related facilities; Application of Environmental Impact Assessment in Aircrafts: Data collection, Calculation, Evaluation of the results.

UGB424 Reciprocating Engines 1+3 4.5

Fundamentals; Operating Cycles; Mechanical, Thermal and Volumetric Efficiencies; Piston Displacement and Compression Ratio; Power Calculations; Factors Affecting Performance; Engine Classification; Engine Construction: Crankcase, Crank shaft, Cylinder and piston assemblies, Bearings; Carburetors: Types, Construction and principles of operation; Fuel Injection Systems; Starting and Ignition Systems; Lubricants and Fuels; Lubrication Systems; Supercharger/Turbocharger Systems; Engine Storage And Preservation.

UGB425 Aircraft Maintenance Practices M11 0+5 4.5

General aircraft practices: finding of inspection doors and components, replace vacuum and fuel pump, CSD / IDG, pressurization test, Electricity system practices: contactor, role, generator, magnetic compass, interior and exterior lamps, Interior practices: carpet and seats, emergency equipment, Cargo panels, door sealants, Hydraulic system practices: replace of hydraulic and component, shaft inspection, Landing gears and brake system practices: wheels, brake units, sealants, Fire warning and fire extinguishing system practices: control and inspection of engine fire extinguishing system.

UGB426 Gas Turbine Engine Workshop 0+8 5.0

Fundamentals; Engine Performance; Inlet; Compressors; Combustion Section; Turbine Section; Exhaust; Lubrication Systems; Fuel Systems; Air Systems; Starting and Ignition Systems; Engine Indication Systems; Auxiliary Power Units (APUs); Power Augmentation Systems: Water injection, Afterburner systems; Powerplant Installation: Configuration of firewalls, Cowlings, Acoustic panels, Engine mounts, Hoses, Pipes, Feeders, Connectors, Wiring looms, Control cables and rods, Lifting points and drains; Fire Protection Systems; Engine Monitoring and Ground Operation: Procedures for starting and ground run-up, Interpretation of engine power output and parameters.

UGB428 Aircraft Maintenance Practices M7 0+4 4.5

Aircraft maintenance safety: Chemical agents, Hazardous conditions, Safety precautions; Aircraft inspections: General visual inspections, Detailed visual inspections; Aircraft maintenance Practices: Aircraft part tags, Warning cards, removal of aircraft components, Installation of aircraft components, lubrication, cleaning; Aircraft maintenance documents: Aircraft maintenance manual, Illustrated part catalogue, Scheduled maintenance task cards, unscheduled maintenance cards; Basic maintenance practices: Opening and closing cabin doors, Opening and closing cargo compartment doors, Energize hydraulic system, Energize electrical system.

UGB430 Aircraft Maintenance Practices M17 0+4 3.0

Introduction of propeller: blade, leading edge, pitch and governor; Remove and installation of constant pitch propeller; Remove and installation of variable pitch propeller; Controls of new installed propellers, lubrication of propeller; Governor: remove, installation and controls; Set-up of propeller's speed; De-icing and anti-icing systems; Propeller tracking; Maintenance of propeller; Ground running-up an aircraft with propeller; Static and dynamic balance; Propeller storage.

UGB432 Vocational Training in Workplace 0+8 15.0

General aircraft practices: finding of inspection doors and components, replace vacuum and fuel pump, CSD / IDG, pressurization test, Electricity system practices: contactor, role, generator, magnetic compass, interior and exterior lamps,

Interior practices: carpet and seats, emergency equipment, Cargo panels, door sealants, Hydraulic system practices: replace of hydraulic and component, shaft inspection, Landing gears and brake system practices: wheels, brake units, sealants, Fire warning and fire extinguishing system practices: control and inspection of engine fire extinguishing system.

UGBSJ402 Internship I 0+2 5.0

Information about the Internship: Purpose, Method, Process; Introduction of Organization; Aviation Legislations; Flight Safety/Security; Occupational Health and Safety; Professional Awareness: Scope of the profession, Importance of maintenance, Aircraft maintenance and procedures; Sectoral Practices: Work experience gain, Professional skills, attitudes and behaviors observation, Maintenance/quality/R&D practices, Usage of related documents and tools, System familiarization/fault detection, Scheduled/Unscheduled maintenance, Line/Base maintenance, Analysis, Hardware selection, Implementation and concluding; Report Writing and Presentation.

UGBSJ404 Internship II 0+2 2.5

Information about the Internship: Purpose, Method, Process; Introduction of Organization; Professional Awareness: Scope of the profession, Importance of maintenance, Aircraft maintenance and procedures; Sectoral Practices: Work experience gain, Professional skills, attitudes and behaviors observation, Maintenance/quality/R&D practices, Advance usage of related documents and tools, System familiarization/fault detection, Scheduled/Unscheduled maintenance, Line/Base maintenance, Analysis, Hardware selection, Implementation and concluding; Report Writing and Presentation.

UZY101 (Eng) Introduction to Aerospace and Ethics 2+0 3.0

History of Aerospace; Ethical Considerations in Aerospace Engineering; Aircraft Design (Structure); Aircraft Design (Propulsion); Aerospace Materials and Technologies; Flight Mechanics; Introduction to Avionics; Space Exploration; Satellite Technology; Rockets; Environmental Considerations and Conditions; Safety and Regulation; Future Trends in Aerospace; International Collaboration in Aerospace.

UZY201 (Eng) Astrophysics 2+0 2.0

Introduction to Astrophysics; The Solar System; Stars and Stellar Evolution; Galaxies; Cosmology; Exoplanets and Search for Life; Black Holes and Neutron Stars; Astrobiology; Astrophysical Spectroscopy; Relativity and Astrophysics; Formation and Evolution of the Universe; Dark Matter and Dark Energy; High-Energy Astrophysics; Astrophysical Tools and Methods.

UZY202 (Eng) Thermodynamics 3+0 4.5

Introduction to Thermodynamics; Basic Concepts and Terminology; Laws of Thermodynamics; Energy Forms and Transfers; Thermodynamic Processes; Properties of Pure Substances; Equations of State; Heat Engines and Refrigerators; Entropy and the Second Law; Thermodynamic Cycles; Exergy (Availability) Analysis; Psychrometrics; Chemical Thermodynamics; Applications of Thermodynamics.

UZY204 (Eng) Astrochemistry 2+0 4.0

Introduction to Astrochemistry; The Different Types of Environments and Objects that Exist in the Interstellar Medium (ISM); Different Types of Chemical Reactions: Phenomena in the ISM, Radical reactions, Ion-reactions, Electron-induced reactions; Photochemical Processes; Gas Phase Chemistry: Surface reactions, Gas-surface interface; Star Formation; Molecular and Atomic Spectroscopy; Star Formation in the Early Universe; Dark Cloud Formation: Cloud collapse, Star and planet formation.

UZY301 (Eng) Aerospace Structures 3+0 5.0

Introduction to Aerospace Structures; Materials in Aerospace Structures; Load Analysis; Stress and Strain Analysis; Structural Components (Fuselage); Structural Components (Wings); Structural Components (Empennage); Joints and Connections; Fatigue and Fracture Mechanics; Structural Dynamics and Vibrations; Buckling and Stability; Composite Structures; Non-Destructive Testing (NDT) Methods; Modern Trends and Future Directions.

UZY302 (Eng) Propulsion Systems 3+0 5.0

Introduction to Aviation Propulsion Systems; The Basics of Jet Engines; Propeller-Driven Engines; The Evolution of Turbojet Engines; Turbofan Engines; Comparing Turboprop and Turbofan Engines; The Role of Afterburners in Military Aviation; Sustainable Aviation Fuels and Propulsion Systems; Electric Propulsion Systems for Aircraft; Scramjets and Ramjets: Propulsion at Hypersonic Speeds; Challenges in Supersonic and Hypersonic Flight Propulsion; Future Trends in Aviation Propulsion; Propulsion System Maintenance and Reliability; Case Study: The Development of the GE9X Engine.

UZY303 (Eng) Aerospace Materials 3+0 3.5

Introduction to Aerospace Materials: Overview of aerospace industry requirements, Role of materials in aerospace design and performance; Structural Materials: Metals and alloys used in aerospace, Mechanical properties and performance under aerospace conditions, Manufacturing processes for aerospace metals; Composite Materials: Types of composites, Properties and advantages in aerospace applications, Manufacturing techniques; Ceramic Materials: High-temperature ceramics for

engine components, Properties and challenges in aerospace environments, Ceramic matrix composites (CMCs) and their applications; Polymer Materials: Polymers in aerospace structural applications, Thermoplastics vs. thermosets, Performance considerations; Advanced Materials and Nanomaterials: Emerging materials for aerospace, Nanotechnology applications in aerospace materials.

UZY304 (Eng) Human Factors 2+0 2.0

Introduction to Human Factors in Aerospace Engineering: Definition and importance of human factors in aviation and aerospace, Historical perspectives and key milestones in human factors research; Human Information Processing: Sensory processes and perception in aviation, Cognitive processes: attention, memory, decision-making, Mental workload and its impact on performance; Human Factors in Cockpit and Interface Design: Cockpit layout and ergonomics, Human-machine interface (HMI) design considerations, Controls and displays usability and human-centered design principles; Human Performance and Error: Factors influencing human error in aerospace operations, Error detection and mitigation strategies, Human reliability analysis (HRA) and its applications; Crew Resource Management (CRM): Principles and evolution of CRM in aviation, Communication and teamwork in cockpit and cabin crew operations, Case studies and simulations of CRM practices; Automation and Human-Automation Interaction: Automation levels and their implications for human operators, Automation surprises and mode confusion, Designing effective automation interfaces and automation management; Fatigue, Stress, and Workload Management: Effects of fatigue and sleep deprivation on aviation safety, Stressors in aerospace environments and stress management techniques, Workload assessment and management strategies.

UZY306 (Eng) Fundamentals of Space Physics 3+0 4.0

Introduction to Astronomy: History of astronomy, How astronomers work; The Solar System: Our solar system, Motion of the planets; Satellite/Spacecraft System: Fundamentals of satellite system, Basic characteristics of satellites, Improved space platforms and launching systems, Transponder, Spacecraft and repeater, Spacecraft communications, Spacecraft antennas; Satellite/Spacecraft Communications: Advantages of satellite communication, The use of microwave frequencies, The digital transmission, Compression and routing, Cable television, Mobile satellite communications.

UZY308 (Eng) Principles of Space Environment and Effects 3+0 3.0

Overview of Satellite/Spacecraft Design and Onboard Systems; Space Environment: Sun, Magnetosphere, Radiation belts; Radiation Effects on Materials: Physical principles, Dose assessment, Tolerances; Spacecraft/Plasma Interaction; Corrosion; Micrometeorites.

UZY310 (Eng) Flight Stability and Control 3+0 5.0

Introduction: Basic definitions of flight mechanics, control and control surfaces; General Structure of Flight Control Systems; Aircraft Static and Dynamic Stability and Stability Derivatives: Nonlinear dynamic equations, Linearization of equations; Static Longitudinal and Lateral Stability: Aircraft longitudinal and lateral dynamic equations, Longitudinal and lateral transfer functions, Longitudinal modes of motion, Short and long period approximation, Transient response of aircraft dynamic; Basic Concept of Aircraft Control Systems: The types of autopilot. Autopilot design, Root locus analysis, Inner and outer loop concepts, Pitch orientational control system, Acceleration control system, Matlab Simulink simulation of aircraft autopilots.

UZY401 (Eng) Aerospace Engineering Design Project I 2+2 4.5

Determining and Planning of the Project Topic; Literature Survey and Analysis; Developing Theoretical or Experimental Models/Designs; Determination and Explanation of the Analysis Method, Experimental Method or Design Verification Method; Reporting.

UZY402 (Eng) Aerospace Engineering Design Project II 1+5 4.5

Determining and Planning of the Project Topic; Literature Survey and Analysis; Developing Theoretical or Experimental Models/Designs; Determination and Explanation of the Analysis Method, Experimental Method or Design Verification Method; Reporting.

UZY406 (Eng) Professional Practice 0+15 20.0

Introduction and Orientation: Presentation of the organization, Organization culture and ethical rules, Company policies; Occupational Health and Safety; Production Processes: Production planning, Production methods, Production management; Quality Control and Quality Assurance Processes: Quality control procedures, Quality assurance system; Project Management Processes: Project planning and management, Project risk analysis, Resource and time planning; Research and Development Processes: Project development, Design and analysis process, Prototyping and testing process; Technical Documentation; Aerospace Engineering Applications; Reporting.

UZYSJ401 (Eng) Aerospace Engineering Internship I 0+2 2.5

Gaining Work Experience; Adapting to Industrial and Business Life; Experiencing a Real Production and/or Service Environment; Observing Professional Skills, Attitudes and Behaviors; Learning Aerospace Engineering Applications in

Institutions/Organizations; Understanding and Recognizing How Theoretical Knowledge is Applied to Real Life Engineering Problems in an Industrial And Business Environment; Report Writing.

UZYSJ402 Aerospace Engineering Internship II 0+2 2.5 (Eng)

Gaining Work Experience; Adapting to Industrial and Business Life; Experiencing a Real Production and/or Service Environment; Observing Professional Skills, Attitudes and Behaviors; Learning Aerospace Engineering Applications in Institutions/Organizations; Understanding and Recognizing How Theoretical Knowledge is Applied to Real Life Engineering Problems in an Industrial And Business Environment; Report Writing.