

## PORSUK VOCATIONAL SCHOOL

Porsuk Vocational School offers programs in Computer Technology and Programming (normal and evening education), Highway Transportation and Traffic, Design and Printing - Publishing (normal and evening education), Radio-Television Technique (normal and evening education), Railroad Construction, Railroad Electric and Electronic Technology, Railroad Machine Technology and Railroad Transportation Management. Besides Automotive, Child Development, Electric, Furniture and Interior Design, Handcrafts, Industrial Automation, Industrial Electronics, Industrial Moulding, Mechanics, Mechanics Drawing Construction and Textile Technology programs have opened and accepted students in evening education 2002-2003 educational term. Porsuk Vocational School serves in restored building for education by University that is in Porsuk Campus on Basın Şehitleri Street. Vocational school trains well equipped, skilled technicians to serve industry. All programs consist of 4 terms of both theory and laboratory studies. Laboratories are designed to serve both technological and physical needs of each program.

Director :  
Deputy Director : Nezir KARADAYI  
Deputy Director : Dr. Lecturer Asuman KAYA  
Deputy Director : Lecturer Zeynep Nazlı ÖZTOPCU  
Secretary to the school : Hülya DİKMEN

### STAFF

#### Professors:

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#### Associate Professors:

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#### Lecturers:

Fatma Nur ALADA, Aytekin ATASOYU, Alper BAYRAKTAR, Esengül ÇAVDAR, Arzu ÇELEN ÖZER, Altan ÇETİNKAYA, Özlem Emine DOĞAN, Ali Haydar ERCAN, Fatih FIRAT, Semih GÖLCÜK, Kadir GÜNGÖR, Sinan GÜVEN, Firdevs Diğdem GÜVEN, Erol HACIOĞLU, Sezen KARADAYI, Roza KOÇKAR, Barış KÖK, Merve MUSLU, Hasan Candan ÖTEYAKA, Emre ÖZBEK, Nurcihan ÖZKAN, Zeynep Nazlı ÖZTOPCU, Hülya SÖKER, Ercan SÜNGER, Sevgi TAÇYILDIZ, Serdar TUNALIER, Yiğit TÜRE, Atakan UĞRAŞ, Aysel ULUKAN KORUL

## DEPARTMENT OF COMPUTER TECHNOLOGIES

### COMPUTER PROGRAMMING

Usage of computers at homes and in offices spread wide due to recent developments in IT technologies. Computer networks, software development for web, office and specific purposes, hardware, maintenance and back office, system administration are concepts of Computer Technology and Programming. Graduated students who will have computer technician title are well trained in theoretical and application fields.

#### PROGRAM

I.Semester				II.Semester			
BTP101	Algorithms and Introduction to Programming	3+1	5.0	BİL181	Internet Programming I	3+1	4.0
BTP103	Integrated Office	3+1	4.0	BTP102	Database and Management Systems I	3+1	4.0

ELO103	Digital Electronics	3+1	4.0	BTP104	Data Structures and Programming	3+1	4.0
İNG187 (Eng)	English I	3+0	3.0	BTP146	Python Programming I	2+1	2.0
MAT125	General Mathematics	3+1	4.0	İNG188 (Eng)	English II	3+0	3.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	İSG401	Occupational Health and Safety I	2+0	2.0
TEK107	Scientific Principles of Technology	3+1	4.0	MAT140	Vocational Mathematics	3+1	4.0
TÜR125	Turkish Language I	2+0	2.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
	<i>Seçmeli Dersler</i>	--	2.0	TÜR126	Turkish Language II	2+0	2.0
					<i>Seçmeli Dersler</i>	--	3.0
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			30.0				30.0

### III.Semester

BİL284	Object Oriented Programming	3+1	4.0
BTP203	Database and Operation Systems II	3+1	4.0
BTP211	Technical English I	1+1	2.0
BTP239	Computer Hardware	2+1	4.0
BTP241	Computer Network Systems	2+1	3.0
	<i>Mesleki Seçmeli Dersler</i>	--	13.0
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			30.0

### IV.Semester

BİL812	Visual Programming	3+1	4.0
BTP201	Operating Systems	3+1	4.0
BTP204	Microcomputer Systems and Assembler	3+1	4.0
BTP298	Internship	0+4	5.0
	<i>Mesleki Seçmeli Dersler</i>	--	13.0
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			30.0

### 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	Proje Yönetimi	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
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
ESTÜ405	Computer Programming	3+0	5.0
SAN155	Hall Dances	0+2	2.0
THU203	Community Services	0+2	3.0

### Area Elective Courses

BİL182	Internet Programming II	3+1	4.0
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BTP202	System Analysis and Design	2+2	4.0
BTP212	Technical English II	1+1	2.0
BTP215	C Programming I	3+1	4.0
BTP216	C Programming II	3+1	4.0
BTP246	Python Programming II	2+1	3.0
DJT203	Digital Electronic	3+1	4.0
ELO106	Digital Design	3+1	4.0
ELO211	Microprocessors / Microcontrollers	3+1	5.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ETK211	Professional Ethics	2+0	3.0
GRA110	Graphic and Animation	3+1	4.0
İLT105	General and Technical Communication	2+0	2.0
işL209	Business Management	2+0	2.0
işL421	Entrepreneurship	2+0	3.0
KGS104	Quality Assurance and Standards	2+0	2.0

## DEPARTMENT OF ELECTRICITY AND ENERGY

### PROGRAM IN GENERATION, TRANSMISSION AND DISTRIBUTION OF ELECTRICITY

Due to the limited energy resources in our developing and rapidly growing country, the energy problem is constantly on the agenda. Especially in industry, electrical energy is of great importance as it is easy to use, portable and has entered many areas of human life. In order to meet the need for well-trained intermediate staff to serve in the fields of electricity generation, distribution, measurement and maintenance and repair of electrical machines used in our country, theoretical and practical training is provided in the Program.

#### PROGRAM

I.Semester				II.Semester			
EEÜ204	Energy Analysis and Savings	2+0	3.0	EEÜ106	Traditional Sources of Energy	2+1	2.0
ELE103	Electrical and Electronical Measurements	3+1	5.0	EEÜ108	Renewable Sources of Energy	2+1	3.0
ELE105	Direct Current Circuit Analysis	3+1	5.0	ELE104	Alternative Current Circuit Analysis	3+1	5.0
İNG187 (Eng)	English I	3+0	3.0	ELO104	Analog Electronics	3+1	4.0
MAT125	General Mathematics	3+1	4.0	İNG188 (Eng)	English II	3+0	3.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	İSG401	Occupational Health and Safety I	2+0	2.0
TEK107	Scientific Principles of Technology	3+1	4.0	MAT140	Vocational Mathematics	3+1	4.0
TÜR125	Turkish Language I	2+0	2.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
	<i>Seçmeli Dersler</i>	--	2.0	TÜR126	Turkish Language II	2+0	2.0
					<i>Seçmeli Dersler</i>	--	3.0
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			30.0				30.0
III.Semester				IV.Semester			
EEÜ104	High Voltage Technics	1+1	2.0	EEÜ210	Contract, Exploration and Planning	2+1	3.0
ELE212	Electricity Installation Plans	3+1	4.0	EEÜ252	Workshop Applications	1+2	2.0
ELO103	Digital Electronics	3+1	4.0	EEÜ298	Internship	0+4	5.0

ELO205	Power Electronics	3+1	5.0	ELE209	Electric Generation, Transmission and Distribution	3+1	3.0
ELO211	Microprocessors / Microcontrollers	3+1	5.0	ELE227	Electrical Machines	3+1	3.0
	<i>Mesleki Seçmeli Dersler</i>	--	10.0		<i>Mesleki Seçmeli Dersler</i>	--	14.0
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			30.0				30.0

### 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	Proje Yönetimi					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
ESTÜ203	Introduction to Sociology					3+0	3.0
ESTÜ301	Science Communication					2+0	3.0
ESTÜ403	Basic Computer Utilization					3+0	4.0
ESTÜ405	Computer Programming					3+0	5.0
SAN155	Hall Dances					0+2	2.0
THU203	Community Services					0+2	3.0

### Area Elective Courses

EEÜ202	Electricity and Energy Project					2+2	4.0
EEÜ205	Energy and Environment					2+0	2.0
EEÜ232	Hydrogen Energy and Usage					3+1	3.0
EEÜ234	Solar Energy Systems					3+1	3.0
EEÜ240	Thermal Power Plant					3+1	3.0
EEÜ244	Energy Plant Management					3+1	4.0
EEÜ246 (Eng)	Technical English					3+1	3.0
EEÜ248	Fuels and Combustion Technology					3+1	3.0
ELE106	Electric Systems (Networks) and Foundations					1+1	3.0
ELE207	Electrical Maintenance and Troubleshooting					1+1	3.0
ELE215	Electromechanical Control Systems					3+1	4.0
ELE222	Related Electrical Service and Systems					1+1	3.0
ENO210	Microcontroller Based Control					3+1	4.0
ESTÜ201	Turkish Sign Language					3+0	3.0
ESTÜ401	Introduction to Professional Life					1+1	2.0
ETK211	Professional Ethics					2+0	3.0
MAK221	Computer Aided Design I					3+1	4.0
MAK251	Energy Management					3+1	4.0

## DEPARTMENT OF ELECTRONICS AND AUTOMATION

# UNMANNED AERIAL VEHICLE TECHNOLOGY AND OPERATORS PROGRAM

## PROGRAM

<b>I.Semester</b>				<b>II.Semester</b>			
ELO103	Digital Electronics	3+1	4.0	BİL129	Information and Communication Technologies	2+1	3.0
İHA101	Introduction to Unmanned Aerial Vehicle Technology and Regulations	3+0	3.5	İHA102	Unmanned Aerial Vehicle Materials	3+1	3.0
İHA103	Aviation Terminology and Ethics	3+0	4.0	İHA104	Unmanned Aerial Vehicle Propulsion Systems	2+0	2.0
İNG115 (Eng)	English Speaking Skills I	1+1	2.5	İHA106	Theory of Flight	3+0	4.5
MAT125	General Mathematics	3+1	4.0	İHA108 (Eng)	Technical English	2+0	2.0
MTR102	Measurement Techniques	1+1	2.0	İNG116 (Eng)	English Speaking Skills II	1+1	2.5
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	İSG401	Occupational Health and Safety I	2+0	2.0
TEK107	Scientific Principles of Technology	3+1	4.0	MAT140	Vocational Mathematics	3+1	4.0
TÜR125	Turkish Language I	2+0	2.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
	<i>Seçmeli Dersler</i>	--	2.0	TÜR126	Turkish Language II	2+0	2.0
					<i>Seçmeli Dersler</i>	--	3.0
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			30.0				30.0

<b>III.Semester</b>				<b>IV.Semester</b>			
ELO211	Microprocessors / Microcontrollers	3+1	5.0	ENO204	Data Addition and Control with Computers	3+1	4.0
İHA201	Unmanned Aerial Vehicle Control Methods and Simulations	3+1	4.0	İHA202	Flight Mission Planning and Programming	2+2	4.0
İHA203	Unmanned Aerial Vehicle Structures and Systems Design	3+0	3.0	İHA204	Unmanned Aerial Vehicle Manufacture and Assembly Workshop	2+2	3.0
İHA205	Aerodynamics	2+0	2.0	İHA206	Unmanned Aerial Vehicle Electrical Systems Maintenance and Repair	2+1	3.0
İHA207	Meteorology	3+0	2.0	İHA208	Unmanned Aerial Vehicle Operations, Ground Control and Communications	3+0	3.0
MTR207	Sensors and Transducers	1+1	3.0	İHA298	Internship	0+4	5.0
	<i>Mesleki Seçmeli Dersler</i>	--	11.0		<i>Mesleki Seçmeli Dersler</i>	--	8.0
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			30.0				30.0

### 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	Proje Yönetimi					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
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
ESTÜ405	Computer Programming	3+0	5.0
SAN155	Hall Dances	0+2	2.0
THU203	Community Services	0+2	3.0

#### Area Elective Courses

ELE215	Electromechanical Control Systems	3+1	4.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
FOT107	Photography	2+1	3.0
iHA209	Model Aircraft Manufacture	1+2	3.0
iHA210	Sustainable Aviation Technologies	2+0	3.0
iHA211	Unmanned Aerial Vehicle Maintenance and Reliability Management	3+0	4.0
iHA212	Computer Aided Design	2+1	4.0
iHA213	Unmanned Aerial Vehicle Communication Technologies and Cyber Security	2+2	4.0
iHA214	Composite Materials and Manufacture Methods	3+1	4.0
işL209	Business Management	2+0	2.0
işL421	Entrepreneurship	2+0	3.0
KGS104	Quality Assurance and Standards	2+0	2.0

## PROGRAM IN MECHATRONICH

Mechatronic structural elements, mechanical systems, mechanical system design, electronic systems, automation systems, informatic systems, process systems, mechatronic systems and design etc. With the Mechatronics Program, which provides training on the subjects of education, it is aimed to meet the qualified workforce need in the sector.

### PROGRAM

I.Semester				II.Semester			
iNG187 (Eng)	English I	3+0	3.0	ELO104	Analog Electronics	3+1	4.0
MAT125	General Mathematics	3+1	4.0	iNG188 (Eng)	English II	3+0	3.0
MTR101	Circuit Analysis	3+0	4.0	iSG401	Occupational Health and Safety I	2+0	2.0
MTR102	Measurement Techniques	1+1	2.0	MAK105	Production and Manufacturing Technology I	3+1	4.0
MTR105	Mechatronic System Fundamentals	3+0	3.0	MAT140	Vocational Mathematics	3+1	4.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	MEK209	Mechanics of Materials (Dynamics)	3+0	3.0
TEK107	Scientific Principles of Technology	3+1	4.0	MLZ112	Materials Knowledge	3+0	3.0

TRS104	Technical Drawing	2+2	4.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
TÜR125	Turkish Language I <i>Seçmeli Dersler</i>	2+0 --	2.0 2.0	TÜR126	Turkish Language II <i>Seçmeli Dersler</i>	2+0 --	2.0 3.0
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			30.0				30.0

### III.Semester

ELO103	Digital Electronics	3+1	4.0
ELO211	Microprocessors / Microcontrollers	3+1	5.0
MAK229	Mechanical Science and Elements	3+1	4.0
MAK263	Material and Mechanical Testing	3+1	4.0
MTR220	Process Control <i>Mesleki Seçmeli Dersler</i>	3+0 --	3.0 10.0
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			30.0

### IV.Semester

ELE228	Electrical Machines and Drivers	3+1	4.0
ENO204	Data Addition and Control with Computers	3+1	4.0
MAK240	Hydraulic and Pneumatic Systems	3+1	4.0
MTR214	Applications of Mechatronic in Industry	1+1	2.0
MTR298	Internship <i>Mesleki Seçmeli Dersler</i>	0+4 --	5.0 11.0
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			30.0

### 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	Proje Yönetimi	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
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
ESTÜ405	Computer Programming	3+0	5.0
SAN155	Hall Dances	0+2	2.0
THU203	Community Services	0+2	3.0

### Area Elective Courses

ELE215	Electromechanical Control Systems	3+1	4.0
ENO208	Robot Technology	3+1	4.0
ENO210	Microcontroller Based Control	3+1	4.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ETK211	Professional Ethics	2+0	3.0
İŞL209	Business Management	2+0	2.0
İŞL421	Entrepreneurship	2+0	3.0
KGS104	Quality Assurance and Standards	2+0	2.0
MAK221	Computer Aided Design I	3+1	4.0

MAK242	Administrating Management and Manufacturing Control	1+1	3.0
MAK251	Energy Management	3+1	4.0
MAK272	Computer Aided Design II	2+1	3.0
MAK274	Computer Aided Machine Tools	2+1	4.0
MTR204	Electro hydraulics/Electro pneumatics	2+1	4.0
MTR207	Sensors and Transducers	1+1	3.0
MTR208	Mechatronic System Design	1+1	3.0
MTR210	Technical English	2+0	3.0
MTR212	Process Measurements	3+1	3.0
MTR218	Fuzzy Logic	3+1	4.0
TER201	Thermodynamics	2+0	4.0

## PROGRAM IN RADIO AND TELEVISION TECHNOLOGY

The maintenance and application of all the electronic equipments of audio and video production and editing in radio and television studios and broadcast centres, are thought. The workshops are provided by the Open Educational Faculty Radio and TV Production Center Studios located in campus. The latest technology is applied in studios for educational purposes. Our students have an opportunity to practise their theoretic knowledge and to be integrated to business life by getting training in important enterprises about Radio and Television industry (TRT and Private Televisions). Students have to get training total 30 working days. The graduates get Radio & TV Technician title.

### PROGRAM

<b>I.Semester</b>				<b>II.Semester</b>			
ELO111	Basic Electronic	2+1	3.0	iNG188 (Eng)	English II	3+0	3.0
FOT107	Photography	2+1	3.0	iSG401	Occupational Health and Safety I	2+0	2.0
iNG187 (Eng)	English I	3+0	3.0	RTV114	General Communication	3+0	3.0
MAT125	General Mathematics	3+1	4.0	RTV116	Radyo Programming	2+2	4.0
RTV121	Measurement and Maintenance at RTV	2+1	3.0	RTV122	Camera and Lighting Technics	2+2	4.0
RTV129	Image Technique	3+1	4.0	RTV131	Radio-Television Broadcast Systems	2+2	4.0
RTV133	Audio Technique	3+1	4.0	RTV135	Studio Equipment and Usage	2+2	3.0
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
TÜR125	Turkish Language I <i>Seçmeli Dersler</i>	2+0 --	2.0 2.0	TÜR126	Turkish Language II <i>Seçmeli Dersler</i>	2+0 --	2.0 3.0
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			30.0				30.0
<b>III.Semester</b>				<b>IV.Semester</b>			
RTV247	Digital Recording and Archiving	2+2	4.0	RTV274	Interactive Television Applications	2+2	4.0
RTV249	Video Editing Technics	2+2	4.0	RTV280	TV Program Production Applications	2+3	5.0
RTV259	Television Program Production Techniques	2+2	4.0	RTV298	Internship	0+4	5.0
RTV261	Text and Scenario Writing <i>Mesleki Seçmeli Dersler</i>	2+2 --	4.0 14.0		<i>Mesleki Seçmeli Dersler</i>	--	16.0
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			30.0				30.0
<b>Elective Courses</b>							
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	Proje Yönetimi	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
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
ESTÜ405	Computer Programming	3+0	5.0
SAN155	Hall Dances	0+2	2.0
THU203	Community Services	0+2	3.0

#### Area Elective Courses

ANİ216	Graphic Animation at TV	2+1	3.0
BYT218	Visual Narration	2+1	4.0
ELO103	Digital Electronics	3+1	4.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ETK211	Professional Ethics	2+0	3.0
İŞL421	Entrepreneurship	2+0	3.0
RTV234	Working Life in Media	2+1	3.0
RTV242	Video Editing Applications	1+2	3.0
RTV243	Kamera-Lighting Applications	2+2	3.0
RTV248	Television Advertising	2+1	3.0
RTV263	Short Film	2+2	4.0
RTV265	Media Literacy	2+1	3.0
RTV267	Digital Communication Technologies	2+2	4.0
RTV269	Digital Broadcasting	2+2	4.0
RTV270	Sound Application	2+2	4.0
RTV271	Social Media Content Production and Management	2+2	4.0
RTV273	Media Management	2+2	3.0
RTV275	Web TV Broadcasting	2+2	4.0
RTV277	Digital Corporate Communication	2+1	3.0
RTV279	Digital Culture and New Media	2+1	3.0
RTV281	Digital Literacy	2+2	4.0
RTV282	News Gathering and Writing Techniques	2+2	4.0
RTV283	Radio Program Preparation and Application	2+2	4.0
RTV284	Creative Writing	2+2	4.0
RTV285	Audio Description Practices	2+2	4.0
RTV286	Announcer and Interview Techniques	2+1	3.0

## DEPARTMENT OF AUDIO-VISUAL TECHNIQUES AND MEDIA PRODUCTION

### PROGRAM IN PRINTING AND PUBLISHING TECHNOLOGIES

The printing industry, which started as one of the oldest professions in the world, continues to be up-to-date and valid in parallel with the development of information technologies. Today, rapid developments in printing technologies have increased the need for trained technical personnel. Our training program has been prepared to meet the qualified workforce needed by the sector.

Our students graduate with the ability to bring together the necessary equipment for the design, printing and publication of all kinds of materials and turn them into products, as well as marketing and advertising. In order to train individuals who can work as managers and intermediate staff in printing-publishing businesses, the Department offers courses with experienced academic staff and up-to-date content.

## PROGRAM

<b>I.Semester</b>				<b>II.Semester</b>			
BYT101	Printing Equipment	2+1	3.0	BYT104	Reproduction and Color Theory	3+0	4.0
BYT103	Fonts and Typography	2+1	3.0	BYT106	Computerized Page Design I	2+1	4.0
BYT107	Printing and Publishing	2+1	3.0	BYT108	Printing Management and Entrepreneurship	2+0	3.0
BYT109	Visual Culture	2+2	5.0	GTS112	Illustration	2+1	3.0
EST101	Aesthetics and Design	2+1	3.0	İNG188	English II	2+0	3.0
İNG187	English I	3+0	3.0	iSG401	Occupational Health and Safety I	2+0	2.0
MAT125	General Mathematics	3+1	4.0	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	TKY102	Quality Management Systems in Production	2+1	4.0
TÜR125	Turkish Language I <i>Seçmeli Dersler</i>	2+0 --	2.0 2.0	TÜR126	Turkish Language II <i>Seçmeli Dersler</i>	2+0 --	2.0 3.0
				-----			
				30.0			

<b>III.Semester</b>				<b>IV.Semester</b>				
BYT205	Binding and Cardboard Packing Production	2+2	4.0	BYT202	Digital Printing Technology	2+2	4.0	
BYT207	Offset Printing Technology	2+2	4.0	BYT210	Other Printing Techniques	3+1	4.0	
BYT209	Cost Calculation	2+2	4.0	BYT298	Internship	0+4	5.0	
BYT211	Computerized Page Design II	2+2	4.0	GRA211	Web Design	1+1	3.0	
GTS212	Desktop Publishing	2+2	3.0	<i>Mesleki Seçmeli Dersler</i>			--	14.0
	<i>Mesleki Seçmeli Dersler</i>	--	11.0					
				-----				
				30.0				

### Elective Courses

BEÖ155	Physical Education					2+0	2.0
BYT152	Written and Verbal Communication					2+1	3.0
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	Proje Yönetimi					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
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
ESTÜ405	Computer Programming	3+0	5.0
SAN155	Hall Dances	0+2	2.0
THU203	Community Services	0+2	3.0

### Area Elective Courses

BYT201 (Eng)	Technical English	3+0	3.0
BYT213	Total Quality Management in Printing Industry	2+2	4.0
BYT214	Information Technology in Printing Industry	2+2	4.0
BYT215	Product Planning and Management in Printing Industry	2+2	4.0
BYT216	Graphic Design on TV	2+1	4.0
BYT218	Visual Narration	2+1	4.0
BYT219	Main Concepts in Media	2+1	4.0
BYT220	Artificial Intelligence and Social Media Management	2+1	4.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ETK211	Professional Ethics	2+0	3.0
FOT107	Photography	2+1	3.0
RTV245	Radio Broadcasting Systems and Applications	2+1	4.0
RTV265	Media Literacy	2+1	3.0
RTV269	Digital Broadcasting	2+2	4.0

## DEPARTMENT OF CONSTRUCTION DIVISION

### PROGRAM IN BUILDING INSPECTION

The aim of the program is to ensure that the qualified intermediate manpower needed by the construction industry in both production and after-sales service levels is trained in accordance with the quality and service philosophy that will meet the expectations of the age. Graduates will have the qualifications to meet the need for qualified personnel between the manager/engineer and the worker in the production and after-sales service sector or to open and run a business on their own behalf. The education of the building inspection technician will enable him to know the contemporary trends in advanced technology and information technologies.

#### PROGRAM

I.Semester				II.Semester			
İNG187 (Eng)	English I	3+0	3.0	BİL129	Information and Communication Technologies	2+1	3.0
MAT125	General Mathematics	3+1	4.0	İNG188 (Eng)	English II	3+0	3.0
MEK104	Statics Strength of Materials	3+0	4.5	İSG401	Occupational Health and Safety I	2+0	2.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	MAT140	Vocational Mathematics	3+1	4.0
TOP102	Surveying	2+2	4.5	ŞPL201	City Admiration and Environment	3+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
YPD101	Building Inspection	2+1	3.0	TEK107	Scientific Principles of Technology	3+1	4.0
YPD103	Structural Design I	3+1	4.0	TÜR126	Turkish Language II	2+0	2.0
YPD105	Construction and Material	3+0	3.0	YPD102	Guidelines for Earthquake Resistant Construction	2+0	2.0

				YPD108	Building Electrical Installation Knowledge	2+0	3.0
					<i>Seçmeli Dersler</i>	--	2.0
			----				----
			30.0				30.0

<b>III.Semester</b>				<b>IV.Semester</b>			
İNŞ229	Reinforced Concrete Design	2+2	4.0	İNŞ230	Soil Improvement Methods	3+0	4.0
MEK211	Soil Mechanics	3+0	4.0	MİM216	Architectural Project Analysis	2+1	3.0
YPD205	Application of Building Inspection	2+2	4.0	YPD208	Building Inspection and Legal Aspects of Reconstruction	2+1	3.0
YPD207	Introduction to Computer Aided Design	2+1	3.0	YPD298	Internship	0+4	5.0
	<i>Mesleki Seçmeli Dersler</i>	--	12.0		<i>Mesleki Seçmeli Dersler</i>	--	15.0
	<i>Seçmeli Dersler</i>	--	3.0				
			----				----
			30.0				30.0

### 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	Proje Yönetimi					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	Solfège					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
ESTÜ203	Introduction to Sociology					3+0	3.0
ESTÜ301	Science Communication					2+0	3.0
ESTÜ403	Basic Computer Utilization					3+0	4.0
ESTÜ405	Computer Programming					3+0	5.0
SAN155	Hall Dances					0+2	2.0
THU203	Community Services					0+2	3.0

### Area Elective Courses

ESTÜ201	Turkish Sign Language					3+0	3.0
ESTÜ401	Introduction to Professional Life					1+1	2.0
İLT105	General and Technical Communication					2+0	2.0
İNŞ232	Analyses of Concrete					3+0	3.0
İNŞ235	Methods of Concrete Technology					2+2	3.0
İNŞ237	Application of Geotechnics					2+1	3.0
KGS104	Quality Assurance and Standards					2+0	2.0
ŞPL202	Plans of Map and Expropriation					2+0	3.0
TRA203	Bridges and Tunnels					3+0	4.0
TRA220	Road Knowledge					2+1	3.0
TRA223	Geotechnics for Roads					2+2	4.0

YPD104	Structural Design II	2+0	2.0
YPD201	Repairs and Strengthening of Structures	2+0	2.0
YPD202	Damage in Buildings	3+0	3.0
YPD203	Technical English	2+0	2.0
YPD204	Building Site Organization	2+0	2.0
YPD206	Structures and Earthquake	2+0	3.0
YPD209	Traditional Building Materials	3+0	4.0
YPD213	Laboratory Experiments in Building Inspection I	3+1	4.0
YPD214	Laboratory Experiments in Building Inspection I	3+1	4.0
YPD215	Converting Buildings to Sustainable Green Buildings	3+0	4.0
YPD216	Alternative Building Materials	3+0	4.0
YPD217	Land Ownership and Real Estate Valuation in Building Inspection	0+0	4.0
YPD218	Urban Transformation and Urban Planning in Building Inspection	3+0	4.0
YPD220	Logic, Science and Ethics in Building Inspection	3+0	4.0
YPD222	Fundamental Disaster Knowledge in Building Inspection	3+0	4.0

## DEPARTMENT OF MACHINES AND METAL TECHNOLOGIES

### PROGRAM IN MECHANICAL DRAWING AND CONSTRUCTION

The Machinery Drawing and Construction program is one of the associate degree programs that will form the backbone of the industry in the future as it is today. The aim of the program is to give theoretical and practical information about machine training, to introduce new technologies suitable for the changing conditions of the day, to teach computer aided design and production methods, and to gain the ability to prepare a program for numerically controlled benches; to educate about work discipline, management and organization principles, production and planning techniques, to teach measurement, control techniques and destructive and non-destructive testing methods, to provide theoretical and practical information on machining and chipless manufacturing methods and machine tools, hydraulic-pneumatic control systems.

#### PROGRAM

I.Semester				II.Semester			
iNG187 (Eng)	English I	3+0	3.0	iNG188	English II	2+0	3.0
MAK105	Production and Manufacturing Technology I	3+1	4.0	iSG401	Occupational Health and Safety I	2+0	2.0
MAT125	General Mathematics	3+1	4.0	MAK106	Production and Manufacturing Technology II	3+1	3.0
MEK209	Mechanics of Materials (Dynamics)	3+0	3.0	MAK115	Mechanical Drawing I	3+1	4.0
MRK109	Basic Principles in Machine Construction	2+0	2.0	MAK134	Engineering Science	3+1	4.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	MAT140	Vocational Mathematics	3+1	4.0
TEK107	Scientific Principles of Technology	3+1	4.0	MLZ112	Materials Knowledge	3+0	3.0
TRS104	Technical Drawing	2+2	4.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
TÜR125	Turkish Language I <i>Seçmeli Dersler</i>	2+0	2.0	TÜR126	Turkish Language II <i>Seçmeli Dersler</i>	2+0	2.0
		--	2.0			--	3.0
			----				----
			30.0				30.0
III.Semester				IV.Semester			
MAK221	Computer Aided Design I	3+1	4.0	KLP220	Mold Design	2+1	3.0
MAK229	Mechanical Science and Elements	3+1	4.0	MAK240	Hydraulic and Pneumatic Systems	3+1	4.0

MAK259	Machine Drawing II	3+1	4.0	MAK272	Computer Aided Design II	2+1	3.0
MAK263	Material and Mechanical Testing	3+1	4.0	MAK274	Computer Aided Machine Tools	2+1	4.0
MRK223	Industrial Measurement Techniques	1+1	2.0	MRK222	Construction	2+1	3.0
	<i>Mesleki Seçmeli Dersler</i>	--	12.0	MRK298	Internship	0+4	5.0
					<i>Mesleki Seçmeli Dersler</i>	--	8.0
			----				----
			30.0				30.0

### 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	Proje Yönetimi					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	Solfège					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
ESTÜ203	Introduction to Sociology					3+0	3.0
ESTÜ301	Science Communication					2+0	3.0
ESTÜ403	Basic Computer Utilization					3+0	4.0
ESTÜ405	Computer Programming					3+0	5.0
SAN155	Hall Dances					0+2	2.0
THU203	Community Services					0+2	3.0

### Area Elective Courses

BTP202	System Analysis and Design					2+2	4.0
ELE102	Basics of Electricity					2+2	3.0
ESTÜ201	Turkish Sign Language					3+0	3.0
ESTÜ401	Introduction to Professional Life					1+1	2.0
ETK211	Professional Ethics					2+0	3.0
İLT105	General and Technical Communication					2+0	2.0
İŞL421	Entrepreneurship					2+0	3.0
KGS104	Quality Assurance and Standards					2+0	2.0
KLP222	Molding Practices					2+2	4.0
MAK242	Administrating Management and Manufacturing Control					1+1	3.0
MAK251	Energy Management					3+1	4.0
MAK257	Non-Destructive Testings					2+2	4.0
MAK261	Application of Engineering Science					2+2	4.0
MAK265	Machine Drawing Applications					2+2	4.0
MAK278	Heat Treatment Technology					2+2	4.0
MRK213	Technical English					3+0	3.0
MRK221	Construction Applications					2+2	4.0

## DEPARTMENT OF DESING

## GRAPHIC DESING PROGRAM

Graphic Design, reflecting the mutual interaction of consumer culture and folk culture; As a result of the development of the market economy, it is used as the most important tool in creating a body of messages that eliminates the communication gap between the producer companies and the consumers. It is determined by the effective promotion and admiration of the products we interact with in newspapers, television, and the Internet in all kinds of mass media, in other words, reaching its goal. This requires knowing and using many design criteria and graphic principles, from the selection of the appropriate target audience to the customer requests, from the slogan to the images chosen, from the color used to the composition created. With the Graphic Design program, it is aimed to meet the need for qualified workforce in the field.

### PROGRAM

<b>I.Semester</b>				<b>II.Semester</b>			
BİL129	Information and Communication Technologies	2+1	3.0	EST106	Aesthetics	2+1	2.0
FOT107	Photography	2+1	3.0	GTS110	Introduction Graphic Design	2+1	3.0
GTS111	Pattern	2+1	3.5	GTS112	Illustration	2+1	3.0
İNG187 (Eng)	English I	3+0	3.0	İNG188 (Eng)	English II	3+0	3.0
MAT125	General Mathematics	3+1	4.0	İSG401	Occupational Health and Safety I	2+0	2.0
SAN111	Fundamental Art Education I	3+0	3.0	SAN112	Fundamental Art Education II	3+0	3.0
SNT111	History of Arts I	2+0	2.0	SNT114	History of Art II	2+0	3.0
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
TİP113	Typography	2+1	2.5	TRS104	Technical Drawing	2+2	4.0
TÜR125	Turkish Language I	2+0	2.0	TÜR126	Turkish Language II	2+0	2.0
	<i>Seçmeli Dersler</i>	--	2.0		<i>Seçmeli Dersler</i>	--	3.0
			----				----
			30.0				30.0
<b>III.Semester</b>				<b>IV.Semester</b>			
ANİ225	Animation	2+1	3.0	GTS212	Desktop Publishing	2+2	3.0
GRA211	Web Design	1+1	3.0	GTS218	Computer Aided Graphic Design II	2+1	3.0
GTS217	Computer Aided Graphic Design I	2+1	3.0	GTS220	Original Printmaking II	2+2	4.0
GTS219	Original Printmaking I	2+1	3.0	GTS222	Packing Design II	2+1	3.0
GTS221	Packing Design I	2+1	3.0	GTS226	Visual Communication and Advertising	2+1	3.0
	<i>Mesleki Seçmeli Dersler</i>	--	15.0	GTS298	Internship	0+4	5.0
			----		<i>Mesleki Seçmeli Dersler</i>	--	9.0
			30.0				30.0
<b>Elective Courses</b>							
BEÖ155	Physical Education					2+0	2.0
ESTÜ101	Introduction to University Life					0+1	2.0
ESTÜ104	Academic and Life Skills					2+1	3.0
ESTÜ106	Proje Yönetimi					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
ESTÜ203	Introduction to Sociology	3+0	3.0
ESTÜ301	Science Communication	2+0	3.0
ESTÜ403	Basic Computer Utilization	3+0	4.0
ESTÜ405	Computer Programming	3+0	5.0
SAN155	Hall Dances	0+2	2.0
THU203	Community Services	0+2	3.0

### Area Elective Courses

ESTÜ103	Ceramic Design Processes	2+1	3.0
ESTÜ201	Turkish Sign Language	3+0	3.0
ESTÜ401	Introduction to Professional Life	1+1	2.0
ETK211	Professional Ethics	2+0	3.0
GTS201	Visual Communication Design	2+2	5.0
GTS205	Printing Techniques	3+0	4.0
GTS208	Technical English	3+0	3.0
GTS211	Graphic Applications	2+1	3.0
GTS213	Portfolio Design	3+0	4.0
GTS223	Plastic Arts	2+1	4.0
GTS225	Critical Thinking and Creativity	3+0	4.0
GTS232	Illustrator Graphic Applications	3+1	3.0
GTS236	3D Design	2+2	4.0
GTS238	Design Culture	3+0	4.0
GTS240	Advanced Illustrator Graphic Applications	2+1	4.0
TIP204	Typography Applications	1+1	3.0

## COURSE CONTENTS

### **ANİ216 Graphic Animation at TV 2+1 3.0**

Graphic Design: Definition, Uses, Functions; Principles of Graphic Design: Line, Color, Texture, Form, Scale, Direction; Basic Design: Motion graphic design; Language and Technologies of Graphic Narratives; Electronic Graphic Animation: Systems and Functions; Graphic Production: Pixel based, Vector based; 2D and 3D Graphic Animation; Production.

### **ANİ225 Animation 2+1 3.0**

Moving Image Design: Definition, Content, Properties, Areas of use; Basic Concepts: Resolution, Pixel, Anti-aliasing, Bitmap, etc.; Image Formats; Application Programs; Flash, 3D Max, and Other animation programs; Points to Consider in Practice; Exercises.

### **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.

### **BiL129 Information and Communication Technologies 2+1 3.0**

Basic Concepts of Information Technologies: Hardware, Software, Storage, Computer network; Information Technologies and the Society; Word Processing Programs; Image Processing Programs; Presentation Software; Use of Information Networks (the Internet, e-mail); Internet and Communication.

### **BiL181 Internet Programming I 3+1 4.0**

Fundamental Internet Concepts: Understanding the Client-server logic, TCP-IP protocol, HTTP, SMTP, DNS, FTP, TELNET; POP3, PROXY info; Introduction to Web Design: Creating Web files, Using FTP software; Introduction to HTML Language (HTML4); Concept of Cascading Style Templates (CSS3); Javascript-Introduction; Javascript-Contr of Structures; Javascript-Functions; Javascript-Sequences; Javascript-Objects; Dynamic HTML (DHTML); DHTML Object Model and Collections; DHTML-Event Model.





**BTP203 Database and Operation Systems II 3+1 4.0**  
Design Criteria: Hierarchical, Network and Relational Database Systems; Data Definition, Data Manipulation and Query Languages; Relational Algebra Operators; Relational Calculus; Examples of Relational Query Languages: Sql, Quel, Qbe; Operational Requirements: Security, Integrity, Accuracy, Concurrency and Performance.

**BTP204 Microcomputer Systems and Assembler 3+1 4.0**  
Understanding Basic Hardware Units and Structures of a Microcomputer; Processing of Microcomputer Hardware Units; Programming by Low Level Programming Languages of Microcomputer Systems; Assembler Programming Languages and Applications: Structure of assembler programming, Languages and basic concepts of assembler programming language, Statements of assembler programming language, Advantages of assembler programming language.

**BTP211 Technical English I 1+1 2.0**  
Speaking: Using To Be and Simple Present Tense (Main verb) and Adjectives and Post Modifiers; Using Have Got and Has Got and There Is and There Are; Using Would You Mind...? /Would You Mind If I...? /Would You Like Me To...? / Shall I...?; Using Sorry/ I Am Afraid.../ It's All right; Using Must/ Have To/ Have Got To /Need /Necessary; Using A Little/ Only A Little/ A Few/ Only A Few/ Much/ Many/ Two-Third/ Ten Percent; Using Imperatives/ Ordinal Numbers; Using Possible/ Impossible/ Probable/ Improbable/ Can /Can't/ Might/ Must, Listening and Understanding; Writing, Regarding and Understanding.

**BTP212 Technical English II 1+1 2.0**  
Speaking: Using Simple Present (Main verb)/Have Got/Has Got/Passive; Using Passive/There Is/There Are/Like/Alike/ Unlike/Differ From/While/As Compared With; Using Simple Present/Present Progressive; Using Simple Future/Be Going To/Future Time Expressions/Passive; Using Adverbial Clauses of Reason and Result; Using Was/Were/Simple Past/Passive/ Past Time Expressions, Listening and Understanding, Writing, Reading and Understanding.

**BTP215 C Programming I 3+1 4.0**  
Analysis of C Program: Keywords; Variables, Constants and Declaring a Function or an Array; Data Types Used in C; Operators and Precedence; Declaration of Data; Basic I/O Statements: Getchar(), Getch(), Getche(), Puchar(), Gets(), Puts(), Printf(), Scanf(); Loop Statements: For, While, Do-While; Decision Statements: If-Else-Switch-Case; Strings and Arrays: One dimensional arrays, Multidimensional arrays, Pointers, Character strings; Functions.

**BTP216 C Programming II 3+1 4.0**  
The Importance of Using Indicator Type Variable; Definition and Usage of Indicator Type Variable; Indicator Arithmetic; the Usage of Indicators Type Functions; To be able to go into the Unmistaken Graphic Environment; Adding Necessary Library Functions to the Software; Understanding and Using the Graphic Statements File Types; Common Statements and Terms About Files; Common Statements and Terms About Text and Binary Files; File Saving Operations on Text Files; The Control of Computer Ports by Using Programming Language.

**BTP239 Computer Hardware 2+1 4.0**  
Physical Structure of a Computer: Hard disc, Processor, Memory, Disc driver, Floppy disc drive;Removable Memory Units; Backup Units, CDs, Input and Output Units, Connection Points,Keyboard, Mouse, Joystick, Scanner, Digitizer, Sound Card, Graphic card, Expanding cards,Monitor, Printer, Plotter; Modem; Network cards; Categorization and Comparison of BigMedium-Small Computer Equipment

**BTP241 Computer Network Systems 2+1 3.0**  
Introduction to Computer Networks; Circuit and Packet Switching Technologies; LAN, WAN, MAN and CAN; Network Hardware; Repeater, Bridge, Hub, Switch, Managed Switch; Ethernet, Wireless Network Hardware, Access Points, Router, Hardware Set Up and Configuration; Network Standards, Network Protocols; OSI Model;TCP, IPv4, IPv6, DNS; Computer Network Planning and Design; Trouble Shooting in Computer Networks

**BTP246 Python Programming II 2+1 3.0**  
Review of the Basic Programming Concepts; Lists: Specific methods of lists; Tuples; Dictionaries: Specific methods of dictionaries; Multidimensional Lists; Modules: Math module, Sys module, Datetime module, Time module, Random module; File Input/Output methods; Classes and Data Abstractions; Python Iterators; Python Generators; Inheritance; Polymorphism; Sort Algorithms; Search Algorithms.

**BTP298 Internship 0+4 5.0**  
Information about Internship: Purpose, Method, Process, Professional Awareness: Scope of the Profession, Research-Oriented Areas, Practical-Oriented Areas, Occupation and Employability; Occupation and Career Planning; Vocational Training and Specialization: Documentation of Expertise; On-site Practice: Field Trip Technical Trips and Application



Printing Industry Terminology: Basic operations, Printing systems, Printing, Pre-and post-printing processes; Publishing Terminology; Translation of Selected Parts from the Literature on Printing and Publishing; Use of Related Instructional Computer Software and Films in the Classroom; Technical Report Writing.

**BYT202                      Digital Printing Technology                      2+2   4.0**

Digital Printing: Definition, Principles, Applications and Advantages; Methods of Digital Printing System; Interior & Exterior Printing: Uses, Points to consider in printing, Raw materials used, Inks and their properties, Post-printing procedures; Digital Printing Quality: Printing problems and their solutions; Relationship between Digital Printing and Offset Printing; Digital Printing System; Workflow and Business Models; Industrial Applications in Digital Printing System: Backing layer, Reel to reel, Short-run, Personalization, Variable data.

**BYT205                      Binding and Cardboard Packing Production                      2+2   4.0**

Binding Technology: Definition and basic concepts, Tools, equipment and machines used in bindery; Processes of Binding: Wire seam, Sting seam, Mechanical seam, Mechanical binding, Glue binding; Cardboard and Cartonnage: Definition, Production, Uses; Types of Packaging Production: Preparations, Design, Construction design and manufacturing; Blades Used in Cardboard Box Making; Cardboard box-cutting machines; Cardboard Box Gluing Techniques; Cost Calculations.

**BYT207                      Offset Printing Technology                      2+2   4.0**

Offset Printing System: Definition of offset, Printing rules, Areas of application; Workflow in Offset Printing System: Pre-printing, printing and post-printing processes; Offset Printing Materials and Their Properties; Plates and their properties, Toray waterless printing plates and their properties, Water and damp system, PH, Paper of offset printing, Ink for offset printing, Other materials, Printing solutions; Machines of Offset Printing; Machine Settings: Plate, Blanket and other settings; Quality Criteria for Offset Printing: Slur-Doubling, Dot gain, Trapping, Densitometric measuring; Problems of Offset Printing and Solutions to Problems.

**BYT209                      Cost Calculation                      2+2   4.0**

Cost Calculations in Printing: Expenses, Items causing expense, Establishing cost centres, Selection of cost calculation system, Estimated costs and real costs; Cost Control: Identifying deviations and corrections; Establishing and Operating Standard Cost System in Printing; Establishment and Operation of the Standard Cost System in Printing Companies: Determination of standards; Building a Cost System According to the Type of Printing Companies: Definition, Types and Characteristics, Points to consider in the selection of an appropriate cost system; Calculating Total Cost and Cost Per Unit of Products Printed: Calculation rules for typesetting, paper, printing, ink, binding, plate and film costs; Calculation Exercises.

**BYT210                      Other Printing Techniques                      3+1   4.0**

Production Techniques: Definition, Scope, Historical development, Artistic production systems and industrial production systems; Industrial Propagating Systems: Relationship between printing and printing systems; Basic Printing Systems: Definition and principles of letterpress, offset, screen printing and rotogravure printing, Printing materials, Plate preparation methods; Other Printing Techniques: Flexo, Tampon, Digital, Hologram, Barcode; Printing Systems: Definition and principles of letterpress, offset, screen printing and rotogravure printing, Printing materials, Plate preparation methods.

**BYT211                      Computerized Page Design II                      2+2   4.0**

Layout Software: Control toolbar and tasks, Tolls, Paragraph, Color palettes; Standard Page and Book Sizes: Structure and properties of the columns in layout, Arrangements to be made according to the characteristics of book binding; Standard Magazine Sizes and Arrangements Required by the Characteristics of Magazine Binding; Exercises: Exercises of book, magazine, newspaper layout.

**BYT213                      Total Quality Management in Printing Industry                      2+2   4.0**

Total Quality Management (TQM): Definition and Scope, Basic principles, Process tools and techniques; Elements of Total Quality Management; Data Collection and Data Analysis: Histograms, Group works, Development process, Brainstorming, Fishbone diagram, Comparison; Quality Assurance System: Quality system documentation; Total Quality Management in Printing Industry.

**BYT214                      Information Technology in Printing Industry                      2+2   4.0**

Stages of Printing: Pre-printing, printing, post-printing processes; New Developments in Printing World: Desktop publishing, Design, Machines of film output and development, Printing machines, System of binding, System of packaging, Materials and accessories of printing; Information Technology in Printing Industry; Selection, Correct use, Efficiency; Change Management in Printing Industry: Definition and scope; Public Relations in Printing Industry; Exercises.

**BYT215                      Product Planning and Management in Printing Industry                      2+2   4.0**

Product Management: Definition and scope, Production systems, Objectives, Functions; Selection of Technology: Aspects of technology, New production technologies; Layout and Material Transfer in Printing Companies: Effect of layout on



Selection of the Project; Needs Analysis; Project Design, Planning, Coding, Testing, Implementation; Debugging and Error Detection; Error Correction; Maintenance, Cost, Time and Labour Management; Problem Statement and Resolution.

**EEÜ204 Energy Analysis and Savings 2+0 3.0**

Energy Terminology; Energy Management, Measurement and Control; Basic Concepts of Thermodynamics; Thermodynamics and Energy; Industrial Energy Applications; Energy Audits in Industry; Thermal Comfort; Environmental Factors for Thermal Comfort; Human Factors for Thermal Comfort ; Energy Savings and Isolation; Heat Transfer Methods; Regulations Related to Isolation; Environmentally-Sensitive Energy-Efficient Building and Installation; Industrial Energy Saving and Environmental Impact; Energy Saving in Home Appliances and Lighting Systems; Energy Storage.

**EEÜ205 Energy and Environment 2+0 2.0**

Environment Pollution Caused By Energy Production; Environment Pollution Caused By Energy Consumption; Effect of Isolation Environment; Scientific Reasons of Global Climate Change; Effects of Global Warming on the World; Ecology and Its Importance; Basic Concepts for the Environmental Impact Assessment (EIA); Environmental Impact Assessment (EIA) Act and Its Applications.

**EEÜ210 Contract, Exploration and Planning 2+1 3.0**

Organizational Structure of an Electrical Contracting Company; Stages of Project Design; Structure and Components of a Valid Agreement; Factors Affecting Acceptance of the Agreement; Framework of Exploration Procedures; Contract Form; Exploration Summary; Specifications; Authentic and Simulated Electrical Distribution Equipment for Exploration; Framework of Planning Procedures; Determination of Critical Orbit for Electrical Wiring; Explaining the Effect of Delays in Secondary Trajectories on Critical Orbit.

**EEÜ232 Hydrojen Energy and Usage 3+1 3.0**

Fossil Fuels and Adverse Effects; Seeking an Alternative to Fossil Fuels and Energy Variables; The Nature of Hydrogen and Features; Hydrogen Production, Storage and Transport Technologies; Hydrogen Conversion and Application Systems; Hydrogen in the Quest Of Energy Requirements and Energy Problems.

**EEÜ234 Solar Energy Systems 3+1 3.0**

Solar Energy and Formation; Some Basic Calculations Associated with Solar Energy; Solar Energy Technologies; Heat Treatment Technologies; Brooms With Colector Box Solar Hot Water Systems; Planar Solar Collectors; Collector Energy Balance; Medium and High Temperature Energy Producing Technologies; Turkey is Engaged in a few Words it is in Energy Studies in some Institutions.

**EEÜ240 Thermal Power Plant 3+1 3.0**

Thermal Power Plants; Thermal Power Plants Produce Electricity Running Coal Thermal Power Plants; Working with Fuel Oil Thermal Power Plants; Working With Diesel Fuel Thermal Power Plants; Gas-Powered Thermal Power Plants; The Thermal Power Plants in our Country.

**EEÜ244 Energy Plant Management 3+1 4.0**

The Definition of Energy; Types of Energy; Classification of Energy Facilities; Fuel, oil-gas Production and Distribution Facilities; Hydro-electric Power Plants (HEPP); Gas-Cycle Power Plants, Wind Power Plants; Nuclear Power Plants and Thermal Power Plants; The Design of the Plants and the Equipment Used; EN-VER (Energy Efficiency Act) In Order to Ensure Efficiency In Power Plants Required Procedures Within the Scope of The Law; The Necessary Measures Within the Scope of the Job Security in Power Plants.

**EEÜ246 (Eng) Technical English 3+1 3.0**

Speaking: Introduction himself and others, Subjects interested with working place, Demands in formal place, Offering help, Excuse, Apology, Necessity, Obligation, Quantity, Ratio Percentages, Estimating, Instruction; Listening-Understanding: Understanding in professional subject; Writing: Taking note, Cirriculum vitae, Business letters, Passive structure usage; Reading-Understanding: Conjunctions indicate time, purpose, condition, Expressions in passive structure, Expressions indicate contrariness, Dictionary usage.

**EEÜ248 Fuels and Combustion Technology 3+1 3.0**

Introduction; Basic Concepts Related to Fuels and Combustion Technologies, Classification of Natural Fuels; Secondary Fuels; Pulverized Coal, Smokeless Fuel, Coke and Metallurgical Coke Production Process Chemistry and Technology; Liquid and Gas Fuels; Properties, Combustion Processes Chemistry and Technology; Effects of Solid and Liquid Fuels and the Reduction of Negative Environmental Impacts and Improvements. Analysis of Solid, Liquid and Gas Fuels; Combustion Processes Related to Quality Control and Digital Applications.

**EEÜ252 Workshop Applications 1+2 2.0**

Electricity Protection; Calculation Of Wire Resistance in Accordance Length and Square Field; Electrical Energy Production From Wind Energy; Electrical Energy Production From Hydrogen Energy; Serial and Parallel Connected Solar Batteries; Storage of Electricity Energy Obtained From Solar Batteries; Remote Distance High Voltage Line Model; Resistances in Identifying And Setting Up A Circuit With Breadboard; Equivalent Resistance; Voltage and Current Measurement; Kirchhoff Laws Applications; Thevenin Theorem Applications; Direct Current RC Circuit; Oscilloscope Usage and DC/AC Voltage Measurement.

**EEÜ298 Internship 0+4 5.0**

Information about Internship: Purpose, Method, Process, Professional Awareness: Scope of the Profession, Research-Oriented Areas, Practical-Oriented Areas, Occupation and Employability; Occupation and Career Planning; Vocational Training and Specialization: Documentation of Expertise; On-site Practice: Field Trip Technical Trips and Application Studies; Project Design: Determination, Planning, Analysis, Method and Equipment Selection, Application and Conclusion, Reporting and Presentation.

**ELE102 Basics of Electricity 2+2 3.0**

Formation and Properties of Electricity; Basic Electrical Laws; Direct Current and Alternative Current Sources; Electricity-Work and Electricity-Power Relations; Transformers and Electrical Installation Schemes; Operations and Connections of Electric Motors; Equipments Used in Electrical Installations; Stable Electrical Plants; Energy Sources.

**ELE103 Electrical and Electronical Measurements 3+1 5.0**

Principles of Measurement and Instruments; Direct Current Measurements: Principles of ampermeter and voltmeter in direct current; Alternative Current Measurements: Principles of ampermeter and voltmeter in alternative current; Power and Work (energy) Measurements: Power measurement in three phases of alternative current circuits, Power measurement in direct current circuits, Power factor, Principles of wattmeter; Measurements of Circuit Components and Parameters; Measurements with Oscilloscope; Industrial Measurements and Transducer; Description and Classify of System; Uprightness, Sensitivity, Symbol.

**ELE104 Alternative Current Circuit Analysis 3+1 5.0**

Alternative Current and Voltage: Maximum value, Average value, Instantaneous value, Effective value, Phase angle; Circuit Equipments AC Behaviour: Ohmic Resistance, Condenser, Current, voltage, power over inductance, R-L-C circuits; Power and Energy on AC: Power and energy on ohmic resistance, Power and energy on condenser, Power types on R-L-C circuits; AC Systems with Three Phase.

**ELE105 Direct Current Circuit Analysis 3+1 5.0**

Resistance; Ohm's Law; Work, Power and Efficiency; Kirchhoff's Laws; Electrical Supplies: Current and voltage supplies; Circuit Solution Methods: Mesh currents, Nodal analysis, Circuit theories; Thevenin, Norton, Superposition Theorems, Condensers; Electro Magnetism and Electro Magnetic Induction; Transient Analysis in Direct Current: Resistance-inductance, Resistance-capacitance time constant.

**ELE106 Electric Systems (Networks) and Foundations 1+1 3.0**

Basics Concepts About Electric System and Foundations: Phase, neutral, mean and conservation conductors, Insulation balks, Electric current and effects, Effects of electric current on human body, Avoid from electric current; Type and Safety of Low Voltages: TN network, TT network, IT network, Conservation insulation; Electric Installation Technology and Applications; Switchs and plugs, Light sources, Poor current units.

**ELE207 Electrical Maintenance and Troubleshooting 1+1 3.0**

Maintenance: General maintenance, Proactive maintenance, Periodic maintenance; Fault Finding: To use avometer in fault finding; Repairing and Service: Checking of oil in power transformer: Fault finding cause of short circuit and over load on electric networks, To replace of electric machines parts, Checking of diodes, transistors, capacitance.

**ELE209 Electric Generation, Transmission and Distribution 3+1 3.0**

Methods of Electric Generation: Electric power stations, Thermic plants, Vapour turbine plants, Gas turbine plants, Nuclear plants, Hydroelectric plants, Renewable energy sources, Cogeneration and ottoproducor; Electric Transmission and Distribution; Cross Section Calculation of Wire; Characteristics of Wire On Air Line.

**ELE212 Electricity Installation Plans 3+1 4.0**

Pre-study of Installation Plan: Definition of plan, Selective of materials and applications, Preparing of sketch, Legal procedure, Statutes related project; Preparing Installation Plan: Functional efficiency, Lighting, Energy and distribution of plan, Cost analysis of project, Preparing of project for approval, Finishing of installation plans and presentation; Presentation of Installation Plan.

**ELE215 Electromechanical Control Systems 3+1 4.0**

Control Input Components: Switches, Buttons, Paco switches, Mechanic limiting switches, Micro switches, Sensors, Thermostats; Control Output Components: Solenoids valves, Contactors, Coils; Protection Coil of Electric Machines; Control of Electric Machines: Speed control and breaking in three phases asynchronous machines; Control of Lift; PLC in Control Systems.

**ELE222                      Related Electrical Service and Systems                      1+1    3.0**

Water Systems in Buildings: Hot and cold water systems; Heating Systems in Buildings: Schematic diagrams and specifications for various heating systems; Air Conditioning; Lighting Systems: Typical lighting applications characteristics; Fire Alarms Systems: Smoke detectors, Temperature rise detectors, Flame detectors; Conductor Systems; Stand-by-Supply Systems.

**ELE227                      Electrical Machines                      3+1    3.0**

Magnetic Materials and Magnetic Circuits; Electromechanical Energy Conversion Principles; Transformers; Asynchronous Machines Synchronous Machines; Direct Current Machines; Introduction to Power Electronics and Motor Drives.

**ELE228                      Electrical Machines and Drivers                      3+1    4.0**

Structures of Electrical Machines and Operational Principles; Fundamental Equalities and Characteristic Curves: DC motor operation techniques, Types of DC motors, Asynchronous motors; Mono Phase AC Motor; Control Principles of Electrical Machines: Basic control principles used in electrical motors; DC Motor Driving: The structures and operational principles of various DC motors; AC Motor Driving Techniques and Circuits: The structures and operational principles of various AC motors; Step Motors and Driving Circuits: Types of step motors and driving methods.

**ELO103                      Digital Electronics                      3+1    4.0**

Digital Concept; Number System; Logic Circuit: Definition of And-Or-Nand etc. logic gates; Simplification of the Logical Expressions; Integrated Circuits : Encoder, Decoder, Seven segment decoder; Flip-Flops: Truth tables of R-S,D, T and J-K type flip flops; Counters: Synchronous, Asynchronous, Up-down counter; Registers and Handlers; Memory Units: Definition of RAM, ROM, PROM, EPROM; Algorithmic State Machines; Invertors.

**ELO104                      Analog Electronics                      3+1    4.0**

Semi-conductors and Basic Structures of PN Junction Circuit Equipments; Characteristics of Diodes, Filters, Cutters, Rectifiers, Inverter Circuits; Zener Diodes and Types of Other Diodes; BJT Transistors: Pre-voltage, Operation point, Figures of common connection and Darlington arrangement; JFET-MOSFET Transistors: Their features, Operations, Pre-voltages, Current controlling and types; Operational Amplifiers: Their characteristics, Basic circuits: Addition, Subtraction, Integration and Derivation receiving circuits; Multivibrators and Wave Formers: Their features, Operations and types.

**ELO106                      Digital Design                      3+1    4.0**

Circuit Design Using Logic Gates: 3 bit input-8 bit output decoder circuit designs, Multiplexer and demultiplexer related to circuit designs; Circuit Design Using Flip-Flop: Asynchronous and synchronous counter designs, Shift register designs, Parallel input and parallel output shift register, Parallel input and series output shift register ;Circuit Design Using Integrated Circuits: Programming EPROM, Frequency meter design, Programmable logic array design, Multiplexer design using EPROM.

**ELO111                      Basic Electronic                      2+1    3.0**

Electrical Current: Definition and comparison of direct and alternating current; Alternans, Period and Frequency; Elements of Electronic Circuit: Characteristics, Types and Uses; Passive Circuit Element: Resistance, Capacitor, Inductor; Active Circuit Elements: Diodes, Transistors; Integrated Circuit: Conductor, Insulator and Semi-conductor; Power Sources.

**ELO205                      Power Electronics                      3+1    5.0**

P?N Juncted Power Elements: Types of power diodes, transistors and thyristors; Electrical Characteristics of Thyristos: V?I characteristic of SCR, Gate characteristic of SCR; Triggering Elements: Usage, types and operation of triggering elements; Thyristor Applications: Rectifiers, Invertors, Static keys, Solid state relays; Protection of P?N Juncted Power Elements.

**ELO211                      Microprocessors / Microcontrollers                      3+1    5.0**

General Structure of Micro Computer System: Central process unit, RAM and ROM memory characteristic, Input/Output interfaces and peripheral, Micro computer system tools; Comparison of Microprocessors and Microcontroller; Installation of Microprocessors and Microcontroller System; Introduction to Programming: Assembly language structure , Instructions, Flow diagrams; Programming: Data transfer, Loop consumption, Sub programme concepts.

**ENO204                      Data Addition and Control with Computers                      3+1    4.0**

Basic Terms: Programmable logic control, Data summing with computer and basic concept related with control; "Data Summing With Computer and Control" SCADA Programmes Definitions; Similarities and Differences Among SCADA



Software; Actual SCADA Programming: Stopping and operating motors with instructions; Programmable Logic Control and SCADA Communication.

**ENO208 Robot Technology 3+1 4.0**

Structure and Operation of Robot: Purpose of robot usage, Block diagrams, Utilization areas of arm-type designed robots; Robot Sensor Units: Operation system of sensors, Robotic syncro-angular sensors, Robotic syncro-resolver sensors; Principles of Robot-Mechanic Systems; Robot Control System: Decision mechanisms, Position servo system, Concept of optimal control; Robot Applicators; Robot Programming: Flow diagram, Coordinate values.

**ENO210 Microcontroller Based Control 3+1 4.0**

Basic Terms related to Input-Output Processes: "Sink current", "Source current" concept, Parallel data transfer process; Programming to Input-Output Device; Interrupt: Definition of interrupt vector, Interrupt sub-programs; Counters-Timers: Counter-Timer units and principles of working, Step motor control with microcontroller, DC motor control with microcontroller; ADC-DAC Applications.

**EST101 Aesthetics and Design 2+1 3.0**

Concept of Aesthetics: Beauty, Beauty in Nature and Art ; the Concept of Aesthetics in Daily Use; Visual Aesthetics and Perception; Visual Expression Methods and Basic Design Principles; Design and Composition: Space-occupancy, Equilibrium, Contrast, Movement and measurement ratio in composition; Design and Color: Definition of color, Color systems, Use of color; Color-Form-Space Relations; Aesthetics and Design Relation: Analysis of design works.

**EST106 Aesthetics 2+1 2.0**

Aesthetics: What is Aesthetics? Description of Aesthetics; What is Aesthetic Subject and Object?; Aesthetic Value Analysis: Good and beautiful, Truth and beautiful, Useful and beautiful, Conceptual and substantive determination of beauty in Plato, Mimesis of Aristo; The 17th and 18th Century Thinkers and their Aesthetic Views; Contemporary Art and Aesthetic View.

**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.

**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, Concrete 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 Proje Yönetimi 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**



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, Interests, 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**

**ESTÜ125 Philosophy of Science 3+0 3.0**

**ESTÜ127 Diction 1+2 3.0**

**ESTÜ201 Turkish Sign Language 3+0 3.0**

**ESTÜ203 Introduction to Sociology 3+0 3.0**

**ESTÜ301 Science Communication 2+0 3.0**

**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.

**ESTÜ403 Basic Computer Utilization 3+0 4.0**

**ESTÜ405 Computer Programming 3+0 5.0**

**ETK211 Professional Ethics 2+0 3.0**

Concepts of Ethics and Morality: Definition, Characteristics, Distinction; Types of Ethics; Principles, Rules and Codes; Concept of Professional Values; Relationship Between Ethics and Professional Value; Need for Ethics; Principles and Rules of Professional Ethics; National and International Regulations of Ethics.

**FOT107          Photography          2+1   3.0**  
Components of Cameras; Techniques of Photography: Exposure, Equivalence laws, Exposure adjustments; Adjustments of Technical Equipment: White balance, Virtual adjustments; Compositions: Subject, Movement, Rhythm, Texture, Perspective, Light; Assistant Equipment; Tripod, Filters, Light; Ranges of Photography; Portrait, Nature, Architectural; Technological Developments: Digital photography.

**GRA110          Graphic and Animation          3+1   4.0**  
Pictures Files; Comprehension of various kinds of picture files forms and properties, Commonly used picture files picture saving files, Properties of picture files; Selecting The Most Useful Picture Forms to Be Used in Web; Opening the Existing Picture and Making Necessary Arrangements on the Picture Files to be able to Make Picture Files; Animations for Web Pages; General Properties of the Animation Creating Programmes; Necessary Drawing Object for Animation; Animation Logic; Creating Animations Using Various Methods.

**GRA211          Web Design          1+1   3.0**  
Basic Internet Terms: Server- client logic, TCP-IP Protocole, WEB based services; Introduction To Web Design: Softwares required for design and installation, FTP software; HTML: All HTML commands used in HTML; Script Using: The commands belong to script languages supporting design and flexibility while preparing web pages; Design and Planning: The design criteria needed to prepare visual and productive web pages.

**GTS110          Introduction Graphic Design          2+1   3.0**  
Basic Concepts and Theories of Visual Communication; Basic Principles of Graphic Design; Development of Problem Solving Techniques: Problem statement, Research, Organization of information; Using Various Materials and Techniques in Graphic Image; Visual Analysis.

**GTS111          Pattern          2+1   3.5**  
Pattern: Definition, Types, Tools and equipment used in patterns; Drawings of Figures and Objects, Line Values; Proportions, Balance, Movement, Composition; Introduction to Different Materials and Techniques; Exercises for the Use of the Language of Graphic Expression in Graphic Design.

**GTS112          Illustration          2+1   3.0**  
Illustration: Definition, Content, History and Areas of use; Illustration Types and Techniques; Main Materials Used in Illustration; Identification and Analysis of Works Produced by Illustrators; Production and Evaluation of Illustration Works.

**GTS201          Visual Communication Design          2+2   5.0**  
Historical development of visual communication; Non-verbal communication; Perception and explanation in visual communication; Functions and necessity of visual communication; Marks and symbols in visual communication: analyses of symbols; Components of graphic design: Typography, Photo, Colour, Contrast relations; Visual analysis in advertisements: Creativity and correct and effective usage of visual elements.

**GTS205          Printing Techniques          3+0   4.0**  
Basic Printing Techniques, offset printing, Press Letters, Gravure Printing, Printing Process: Prepress, Post press; Printing Considerations, Advertising and Publication Relations, Printing Technique Selection, Paper selection, Ink selection, Encountered In print Problems and Solutions.

**GTS208          Technical English          3+0   3.0**  
Frequently used words and terms in the field of advertising; Recognition and Use, Turkish Provisions; Translation of Selected Texts from Advertising Field Literature; Technical Report Writing.

**GTS211          Graphic Applications          2+1   3.0**  
Graphics Product Design Process: Operation steps, Relationship between graphics and printing; Graphic Production: Drawing-image processing and Page layout, Basic principles of graphic design; Graphic Production Techniques.

**GTS212          Desktop Publishing          2+2   3.0**  
Desktop Publishing; Definition, Importance, Development, Drawing Image Processing and Page Layout programs, Data Transfer Methods and Image Formats Among Desktop Publishing Programs, Graphic Design Fundamentals and Principles; Page Design Studies; Brochure and Poster Design as Research Projects in Practice.

**GTS213          Portfolio Design          3+0   4.0**

Personal Presentation: Preliminary preparation for presentation, Researching and Deciding on how to Present the Portfolio; Identifying the Target Group: Deciding on the private sector or personal aims; Presentation Techniques: Digital portfolio, Portfolio of printed works, Presentation plan.

**GTS217 Computer Aided Graphic Design I 2+1 3.0**

Design and Typesetting: Definition, Scope: Application Programs: Adobe Illustrator, Design, Photoshop, Macromedia Freehand, Corel-Draw; Image Formats in Digital Environment: EPS, TIFF, JPEG; Color Models: RGB, CMYK; Selection of Appropriate Color Modes; Exercises: Press release, Packaging, Posters, Magazine.

**GTS218 Computer Aided Graphic Design II 2+1 3.0**

Graphic Design Techniques; Design Elements; Vector-Based Drawing and Image Processing Computer Programs in Computer-Aided Design; Contemporary Graphic Designs; Studies in Visual Communication.

**GTS219 Original Printmaking I 2+1 3.0**

Printmaking: Definition, Content, Techniques, History; Terminology of Original Printmaking; Types of Printmaking; Materials and Methods Used in Printmaking; Pit and High-Print Practices: Determining an original in view of the printing method, Preparation of the original, Mold preparation, Production and evaluation of works.

**GTS220 Original Printmaking II 2+2 4.0**

Original Printmaking: Content and Types; Linoleum and Wood Printing Techniques: Materials used, Mold preparation methods, Properties of materials, Properties of inks, Image transfer; Varieties Template Printing Technique in Printmaking: Materials used, Mold preparation methods, Properties of materials under printing, Properties of inks, Image transfer; Exercises.

**GTS221 Packing Design I 2+1 3.0**

Packaging Technology: Definition, Content, Properties, Areas of use; Packaging and Graphic Design; Points to Consider in Graphic Design by Type of Packaging; Producing Graphic Design of Product Packages Used for Different Purposes: Food, Clothing, Electronic goods, Retail consumer goods, etc.

**GTS222 Packing Design II 2+1 3.0**

Relationship of Forms, Materials and Visual Communication in Packaging Design Process; Project Design in View of Brand Identity of a Product and Product Range Criteria: Analysis of successful examples on the market.

**GTS223 Plastic Arts 2+1 4.0**

Interdisciplinary Art: Art theories and interdisciplinary art studies; Interdisciplinary Art Studies: Concept, Methodological and technical relationships, Similarities and differences; Art Theory in Interdisciplinary Arts: Suggestions, Discussions; Exploration of Artistic Materials: Visual, Audial, Plastic art materials; Examination of Interdisciplinary Works of Art.

**GTS225 Critical Thinking and Creativity 3+0 4.0**

Critical Thinking, Creation and Application: Problem analysis, Alternative thinking in problem analysis, Conceptual thinking and offering solutions, Conversion of an idea into object and installation; Experimental Production: Use of different techniques and materials, Investigation of appropriate techniques in visualizing the problem, Interdisciplinary applications.

**GTS226 Visual Communication and Advertising 2+1 3.0**

Use of Principles of Visual Aesthetics and Perception to Improve Advertising Strategies; Graphic Works in Advertising Campaigns; Advertising Campaign: Definition, Surreptitious advertising, Newspaper, Radio and television, Difference of outdoor campaigns; Analysis of Advertising Campaigns.

**GTS232 Illustrator Graphic Applications 3+1 3.0**

What is Vectorial Graphics: Introduction to Adobe Illustrator and its Interface; Using the Menu: Control panel, Tools panel; Using Panels: Using workspace; Working with Documents: Creating a new document, Working with template documents; Artboard Tool: Tool-1, Tool-2, Artboard panel, Navigation; Guides and Grids: Smart guides, Guides, Grids; Selection Tools: Direct selection tool, Group selection tool, Magic wand tool, Lasso tool.

**GTS236 3D Design 2+2 4.0**

Concept of 3d Design; Designing in the Context of Functionality and Aesthetics; Modelling Practice with Dimensional Circles, Squares and Triangular Shapes; Introduction of Plan, Section and View, and their Application to Geometric Forms; Formation of Cubes, Cylinders, Cones and Prisms, and Search for Layout in the Living Space; Sketching Drafts, Transferring Sketches into 3d Spatial Forms.

**GTS238 Design Culture 3+0 4.0**

Art and Concepts related to art: Art, Artist, Spectator, Art Work; Art: Definition of art, Classification, Looking at art in historical process, Examining theory and concepts related to art; Artist: Artist's place in and relationship with society; Art Work: Necessary qualifications for a product to be an artwork, The items composing the artwork.

**GTS240                    Advanced Illustrator Graphic Applications                    2+1   4.0**

Layers; Transformational Operations: Align pane, Rotation tool, Scaling tool, Mirror tool; Object Usage Tools: Outline, Appearance, Masquerade; Basic Drawing Tools: Line, Arc, Spiral, Rectangular / Polar grid; Text Creation and Editing Tools: Character panels, Paragraph panels; Working with Colors: Gradient panel, Transparent panel; Project Work.

**GTS298                    Internship                    0+4   5.0**

Information about Internship: Purpose, Method, Process, Professional Awareness: Scope of the Profession, Research-Oriented Areas, Practical-Oriented Areas, Occupation and Employability; Occupation and Career Planning; Vocational Training and Specialization: Documentation of Expertise; On-site Practice: Field Trip Technical Trips and Application Studies; Project Design: Determination, Planning, Analysis, Method and Equipment Selection, Application and Conclusion, Reporting and Presentation.

**iHA101                    Introduction to Unmanned Aerial Vehicle Technology and Regulations                    3+0   3.5**

First Aviation Trials; Historical Development of UAVs; UAV Configurations; Rotary Wing UAVs; Fixed Wing UAVs; Flapping Winged UAVs; Airborne Light UAVs; Weight Classifications; Range and Altitude Classifications; Task Classifications; H Study in Turkey; Military UAV Studies; Civil UAV Studies; Trends in UAV Research; SHT UAV Instruction; SHT UAV Classification; SHT UAV Registration System; SHT UAV Pilot Licensing, Registration and Registration; Airspace and No-Fly Zones; Commercial and Individual License Differences in UAVs; Insurance Obligations of UAV Users.

**iHA102                    Unmanned Aerial Vehicle Materials                    3+1   3.0**

Bonds Between Atoms, Stress, Yield Strength, Tensile Strength, Hardness and Ductility; Metal Based Materials; Aluminum Alloys and Their Properties Used in UAVs, Tensile, Hardness, Fatigue and Impact Strength Tests of Aluminum Alloys; Corrosion Types; Composite materials; Fiber Materials; Matrix Materials; Wood Types Used in UAVs; Mechanical Properties of Wooden Materials; 3D Printing Thermoplastics Used in UAVs; Principle of 3D Printing Method; Thermoplastic Types; Mechanical Behavior of Thermoplastics; Corrosion Behaviors of UAV Materials; Production Methods of UAV Components; Maintenance and Repair of UAV Components.

**iHA103                    Aviation Terminology and Ethics                    3+0   4.0**

UAV and General Aviation Terminology; Aviation Alphabet; Standard Terms; International Civil Aviation Organization; Civil Aviation General Directorate; Human Factor: Fatigue and lack of attention, Team management, Social pressure, Stress and trust; Things to Do Before, During and after flight; Availability for Continuous Flight; Concept of Ethics; Ethics and Its Importance in Aviation Companies; Historical Development of Ethics; Factors Forming Ethics: Culture, Social Responsibility; Causes of Unethical Behaviors: Individual and organizational reasons; Ethical Dimension of Decision Making Process; The Effect of Unethical Behavior on Aviation Activities.

**iHA104                    Unmanned Aerial Vehicle Propulsion Systems                    2+0   2.0**

Unmanned Aircraft Propulsion Configurations; Electric and Gasoline Engines; Types of Electric Motors: Brushless electric motors, Brushed electric motors; Piston Engine Types; Mini Turbojet Engines; Electronic Speed Control Circuits; Fuel Types Used in Internal Combustion UAV Engines; Fuel Emissions; Energy Storage Systems: Batteries, Supercapacitors; Alternative Energy Sources: Fuel cells, Solar panels, Biofuels; Propeller Theory; Propeller and Wings; Gear Systems.

**iHA106                    Theory of Flight                    3+0   4.5**

Atmospheric Physics: Physical properties of air; International Standard Atmosphere; Flight Theory: Aerostatic and Aerodynamic Lift; Aircraft Aerodynamics: Airflow, Boundary layer; Aerodynamic Force and Components, Aerodynamic Moment, L/D Ratio; Wing Profile; Stall, High Lift Devices; Subsonic, Transonic and Supersonic Flight; Aerodynamics of Rotary Wing Aircraft; Wings; Flight Controls, Empennage; Airframe, Landing Gear; Powerplants.

**iHA108 (Eng)                    Technical English                    2+0   2.0**

Introduction to the Course; Word Syntax; Words Showing Place; Professional Verbs and Their Conjugations; Guidelines and Procedures; Basic Sentence Structure; Physical Characteristics and Dimensions; Structures Defining Purpose; Unmanned Aerial Vehicle Structural Terms; Aerodynamics and Aviation Terms; Flight Mechanics Terms; Control and Electronics Terms; Terms Related to Operations.

**iHA201                    Unmanned Aerial Vehicle Control Methods and Simulations                    3+1   4.0**

Introduction to Automatic Control in Unmanned Aerial Vehicles: Control, Automatic control, Entry, Exit, Control and disturbance variables, Open loop control, Closed loop control; Laplace Transform; System Dynamics: Electrical and

mechanical system elements; Speed Control in Electric Motors; Transfer Function and Block Diagrams; Stability of Control Systems; Controllers and Controller Design.

**iHA202 Flight Mission Planning and Programming 2+2 4.0**

UAV Mission Planning; Military and Civilian Applications and Examples; Autonomous UAV Programming; Flight Controllers; Open Source Software Architecture; ArduPilot Project, ArduPilot Firmware, MAVLink, MAVProxy; SITL Architecture; SITL Simulator; Ready Libraries; DroneKit, Gazebo, Robot Operating System (ROS); Task Planning Software, Mission Planner, QGround Control, Script Insertion; Practice, Matlab, Python Examples and Applied Laboratory Studies.

**iHA203 Unmanned Aerial Vehicle Structures and Systems Design 3+0 3.0**

System Engineering Approach; Defining the System, System, Subsystem, Component and Part Levels in Systems Engineering Approach; UAV Subsystems; Propulsion Subsystem; Carrier Surfaces Subsystem; Control System; Communication Subsystem; Power Subsystem; Mission Subsystem; Introducing UAV Structures and Examining Their Types; Wing Component and Parts; Tail Component and Parts; Body Component and Parts; Landing Gear Component and Parts; Components and Parts of Control and Communication Subsystems; Realization of System; Subsystem; Configuration Choices and Methodology

**iHA204 Unmanned Aerial Vehicle Manufacture and Assembly Workshop 2+2 3.0**

Introduction of Unmanned Aircraft Basic and Sub-Components, Introduction of Basic Processes on Assembly Line, Techniques Used in Component Joining Processes, Adhesives, Binders, Anti-Vibration Tools, Introduction of Hand Tools, Introduction of Pneumatic and Electric Devices, Laser Cutting, Milling, Hot Wire Cutting Techniques, UAV Beneficial Load Assembly, Propeller Balance and Importance of Propeller Assembly, Transferring Matters to be Considered in the Installation of Autopilot Card and Flight Sensors, Assembly Applications; Preflight Maintenance; After Flight Maintenance; After Incident Maintenance; Case Study.

**iHA205 Aerodynamics 2+0 2.0**

Atmospheric Physics: International standard atmosphere (ISA) model, Application to aerodynamics; Airflow Around a Body: Boundary layer, Laminar and turbulent flow, Free flow, Relative air flow, Up and down flow, Vortices, Stagnation Point; Wing Profile and Wing Terminology: Camber, Chord, Average aerodynamic chord, Profile (parasite) drag, Induced drag, Pressure center, Angle of attack, Wing geometry and span ratio; Thrust; Weight; Aerodynamic Force; Lift and Drag Production: Angle of attack, Lift coefficient, Drag coefficient, Polar curve, Stall; Airfoil Distortion Caused by Ice, Snow and Icing.

**iHA206 Unmanned Aerial Vehicle Electrical Systems Maintenance and Repair 2+1 3.0**

UAV Electric Power System Problem Areas; Problems in UAV Electric Motors, Problems in UAV Batteries, UAV Battery Charging Protocols; Problems in UAV Electronic Speed Control Circuit, Problems Related to Feeding Autopilot and Flight Cards, UAV Power Distribution Circuits and Connecting to UAV Platform, Electric Power System Problems and Solutions; General UAV Cable Hardware: Cable Types and Classification, Cable Hardware Failure Methods, Electromagnetic Interference in UAV Electrical System, Solutions of Problems Caused by Electromagnetic Interaction in Aircraft; Example UAV Electric Faults and Solutions.

**iHA207 Meteorology 3+0 2.0**

Definition and History of Meteorology, Sources of Weather Report; Atmosphere; Pressure, Pressure Systems, Temperature, Inversion; Humidity, Density, Altimeter; Wind, Local Winds, General Circulation; Stability, Meteorological Factors restricting Opinion; Synoptic Cards, Clouds and Precipitation; Thunderstorm, Tropopause, Turbulence; Jet Streams, Icing; Air Masses, Fronts; Meteorological Documents for Flight; CAVOK, SKC and NSC; Meteorological Cards.

**iHA208 Unmanned Aerial Vehicle Operations, Ground Control and Communications 3+0 3.0**

UAV Operations: Civil operations, Military operations; UAV Bases in Turkey and the World; 3D Positioning; Reference Systems; UAV Control Systems: Flight sensors, Position sensors; GPS, GNSS; Errors Due to Position Sensors; UAV Ground Stations; Subsystems of Ground Stations; UAV Communication Methods; Telemetry Connections; Telemetry Ranges; Satellite Connections; Basic Map Readings; Special Maps; Airspace and No-Fly Zones; Communication with ATC; Standard Speech Procedures; Information Sharing with Other Stakeholders; Flight Plan; Operation Rules; Operation Envelope; Safe and Secure Flight; Emergency Situations; Risk Assessment.

**iHA209 Model Aircraft Manufacture 1+2 3.0**

Introduction to Modeling: Flight theory: Forces acting on the plane, Lifting force, Weight, Pull (propulsion), Drag; Flight Principles of Model Aircraft; Basic Elements of Model Aircraft: Wing, Body, Landing gear, Tail gear, Flight controls, Power group; Model Airplane Types: Free flight models, Radio controlled models; Factors Affecting Model Aircraft

Selection; Factors Affecting the Performance of Model Aircraft; Plan Reading and Model Aircraft Manufacturing Materials; Manufacturing Techniques; Flight Techniques.

**iHA210 Sustainable Aviation Technologies 2+0 3.0**

Green Airport; Studies on Design and Construction; Indoor Air Quality; Energy and Materials; Green Engine; Combustion Chamber Design; Renewable Energy Sources in Aviation; Alternative / Green Aviation Fuels; More Electric Aircraft; All Electric Aircraft; Thermal Management in Batteries; Life Cycle Design and Life Cycle Evaluation; Life Calculation of Aviation Materials; Life Cycle Calculation in Aircraft.

**iHA211 Unmanned Aerial Vehicle Maintenance and Reliability Management 3+0 4.0**

General Concepts Related to Aircraft Maintenance; System Approach and Maintenance Activities; Concept of Reliability and Aircraft Maintenance; Classification of Aircraft Maintenance Activities; Activities Forming Aircraft Maintenance; Care Regulations and Basic Care Methods; Reliability Centered Maintenance; Maintenance Routing Guides; Development of Basic Maintenance Program; Preparation of Maintenance Programs; Planning of Aircraft Maintenance Activities; Aircraft Reliability Program; Aircraft Maintenance Costs; Human Factors in Aircraft Maintenance.

**iHA212 Computer Aided Design 2+1 4.0**

Description of the Program Package: Features, Menus, Sub-menus, Design environment and menus; Correction and Query Operations: Functions of the correction and query commands, Corrections and arrangements on the created object; Image Control Operations: Function of basic image commands; Blocking Processes and Layers; Dimensioning and Scanning Operations; Printing Processes from the Printer and Plotter.

**iHA213 Unmanned Aerial Vehicle Communication Technologies and Cyber Security 2+2 4.0**

Wireless Communication Technologies: Bluetooth, Zigbee, Wi-Fi, WAVE, WiMAX and LTE; UAV-UAV and UAV-ground station data connection structures: Bandwidth, Range, Delay, Antenna structures and selection; Unmanned Aerial Vehicle Communication Security and Threats: Signal mixing, Intervention, Deception; Basic Communication Theory: Modulation, Demodulation, Analog and digital communication techniques.

**iHA214 Composite Materials and Manufacture Methods 3+1 4.0**

Composite Matrix and Fiber Structures; Fiber Fabric Types; Fiber Supplements; Carbon-Graphite and Boron Fibers; Glass and Aramid-Kevlar Fibers; Ceramic Fibers; Metal Fibers; Properties of Fabric Types; Fiber Weaving Types and Effects of Their Angles; Resin Types; Mechanical Behavior of Composites: Orthotropic and anisotropic behaviors; Composite Production Methods, Hand Lay-up, Vacuum Infusion; Production with Prepregs; Flemish Wrapping Technique; Composite Furnaces; Composite Curing Process; Surface Treatment After Curing; Paint Processes on Composite UAV Components; Corrosion of Composite Structures in Service Life: Moisture absorption, Temperature effect.

**iHA298 Internship 0+4 5.0**

Information about Internship: Purpose, Method, Process, Professional Awareness: Scope of the Profession, Research-Oriented Areas, Practical-Oriented Areas, Occupation and Employability; Occupation and Career Planning; Vocational Training and Specialization: Documentation of Expertise; On-site Practice: Field Trip Technical Trips and Application Studies; Project Design: Determination, Planning, Analysis, Method and Equipment Selection, Application and Conclusion, Reporting and Presentation.

**iLT105 General and Technical Communication 2+0 2.0**

Definition and Type of Communication: Communication and its basic concepts, Types of communication; Oral Communication: Techniques, Principles and necessity of oral communication, Its effects on daily life; Written Communication; examples of written language, The kinds of written text used for institutional communication at business Life; Applying Communication Techniques at Business Life; Graphics Communication; Purpose of using Graphic and Schemes Communication; Communication via Technological Devices; Convenience provided by Technologic Equipments.

**iNG115 (Eng) English Speaking Skills I 1+1 2.5**

Required phrases for everyday English; Greetings, Introducing, Asking for and giving directions. Social Life: giving an order and paying the bill at restaurants, pubs and bars, Making reservations, shopping. Improvement of listening skills, Pronunciation: improvement of pronunciation and understanding.

**iNG116 (Eng) English Speaking Skills II 1+1 2.5**

Daily life and social expressions at advanced level. Asking for information about transportation. Various expressions for various situations. Expressions for formal/official situations. Asking for an appointment, job applications/interview, form filling. Formal and informal telephone conversations. Dealing with various accents and register, exercises to improve speaking skills, exercises on problematic sounds and words.



**iNG187 (Eng) English I 3+0 3.0**

Using Personal Pronouns and Possessive Adjectives; Using to be in Present Tense; Using Singular and Plural Nouns; Using Basic Language Related to Food and Drink; Using "There is-there are" in sentences; Using "have got"; Asking "yes-no" Questions and Giving Short Answers to Them; Talking about Daily and Weekly Routines; Talking about Likes and Dislikes; Talking about Sports and Hobbies; Talking about Abilities by Using "can", "can't"; Using Adjectives that Describe People; Talking about Appearance, Personality and Feelings of People; Talking about Clothes and Colours; Talking about Shopping and Prices; Using Present Continuous Tense.

**iNG188 English II 2+0 3.0**

Using Simple Present Tense; Comparing Simple Present and Present Continuous Tenses; Using Prepositions of Time and Place; Giving Directions, Making Reservations; Using "to be" in Past Tense; Using Regular and Irregular Verbs in Simple Past Tense; Using Comparative and Superlative Form of Adjectives; Using Modals to Give Advice; Suggestions and Obligations; Using Future Tense: Making Sentences Using "going to" and "will"; Using If Clauses Type 0 and 1.

**iNG188 (Eng) English II 3+0 3.0**

Using Simple Present Tense; Comparing Simple Present and Present Continuous Tenses; Using Prepositions of Time and Place; Giving Directions, Making Reservations; Using "to be" in Past Tense; Using Regular and Irregular Verbs in Simple Past Tense; Using Comparative and Superlative Form of Adjectives; Using Modals to Give Advice; Suggestions and Obligations; Using Future Tense: Making Sentences Using "going to" and "will"; Using If Clauses Type 0 and 1.

**iNŞ229 Reinforced Concrete Design 2+2 4.0**

Preloading; Vertical Drains; Deep Compaction of Cohesion less Soils: Vibro floatation, Vibratory probes, Compaction piles, and Dynamic compaction, Blasting; Grouting: Permeating grouting, Compaction grouting; Chemical grouting, Jet grouting; Soil Reinforcement: Soil nailing, Micro piles, Reinforced earth, Stone columns, Lime columns, Geotextiles, Freezing, Electro-osmosis.

**iNŞ230 Soil Improvement Methods 3+0 4.0**

Preloading; Vertical Drains; Deep Compaction of Cohesion less Soils: Vibro floatation, Vibratory probes, Compaction piles, and Dynamic compaction, Blasting; Grouting: Permeating grouting, Compaction grouting; Chemical grouting, Jet grouting; Soil Reinforcement: Soil nailing, Micro piles, Reinforced earth, Stone columns, Lime columns, Geotextiles, Freezing, Electro-osmosis.

**iNŞ232 Analyses of Concrete 3+0 3.0**

Introduction; Quality Control of Concrete Structures: Types of tests applied on concrete; Strength of concrete, Standard testing, Preparation of test samples; Semi-destructive tests; Pull-out tests, Pull-off tests; Non-destructive tests; Rebound hammer test; Ultrasonic pulse velocity test; Radar imaging of concrete, X-ray diffraction on concrete materials; Porosity by mercury intrusion porosimetry; Differential scanning calorimeter tests on concrete; Maturity of concrete; Estimation of concrete strength by combined methods; Project presentations.

**iNŞ235 Methods of Concrete Technology 2+2 3.0**

Ordinary Concrete Technology: New developing concrete materials; Additive materials; Quality assurance and quality control; Special production technologies; Concrete pouring in extreme weather conditions (Hot and Cold Weather); Ready mixed concrete; Pump concrete; Shot create; Injection mortar; Vacuum concrete; Concrete under water; Heat treatment application in prefabrication; Massive concrete and Roller compacted concrete; Light weight concrete; Highway and airport concrete.

**iNŞ237 Application of Geotechnics 2+1 3.0**

Basic Principles of Geology: Rocks and minerals; Classification of rocks in terms of engineering; Deformations of rocks; Drilling and sampling; Soil Investigation; Earthquakes and earthquake regions of Turkey; Analysis of issues according to civil engineering in terms of Geology.

**iSG401 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.

**iŞL209 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 definition, Capacity; Functions of Business: Management, Organization, Control, Planning; Organization Operation Process: Leadership and management, Strategic management, Change, Groups, Motivation.

**işL421 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.

**KGS104 Quality Assurance and Standards 2+0 2.0**

Standardization: Definition, Aims and principles, TSE (Turkish Standards Institute) and its mission, Regional and internal standardization associations; Quality and Quality Concept: Quality definition and concept, Quality approach, Quality costs and risks, Concept of quality control; Quality Assurance: Quality management principles, TS-EN-ISO 9000, TS-EN-ISO 9001; TS-EN, ISO 9004, ISO 9004, ISO 19011 standards and explanations; Vocational Standards: Understanding vocational standards.

**KLP220 Mold Design 2+1 3.0**

Importance, Features and Selection of Mold Presses in Machine Construction; Studying Basic Mold Components: Mold sets, Bushes, Guide columns, Columns and abrasives, Scraper plates, Docking, Stages, Pilots; Basic Operations: Filing, Marking, Drilling, Bailing, Pinging and tapping, Centering, Detachable attachments; Machine Tools Used in Mold Making; Construction of Simple Cutting Molds; Construction Principles in Volume Molds ; Construction and Assembly of Volume Molds.

**KLP222 Molding Practices 2+2 4.0**

Mold Components: Materials used, Mechanical properties of the materials, Heat treatments, Mold components and standards; Cutting and Drilling Mold: Design, Modelling and manufacturing drawings; Bending and Drawing Molds: Design, Modelling and manufacturing drawing; Press Automation System: Design, Modelling and manufacturing drawing; Sheet-Metal Mold: Design, Manufacture and assembly; Other Molding Methods.

**MAK105 Production and Manufacturing Technology I 3+1 4.0**

Principles, Scope and Importance of Production and Manufacturing Technologies; Measurement and Control Knowledge; Traditional Manufacturing Methods: Definition, Scope, Areas of Use, Comparison with computer aided production and manufacturing methods; Analysing the Manufacturing System; Manufacturing Methods: Definition, Scope, Areas of Use, Comparison Other Manufacturing Methods.

**MAK106 Production and Manufacturing Technology II 3+1 3.0**

Manufacturing Methods: Areas of use, Advantages and disadvantages, Casting-welding-machining-plastic forming, Powder metallurgy, Special manufacturing methods; Adjustable Measuring and Control Instruments, Operations on Outer and Inner Conical Surfaces; Sheet Metal Forming; Lathes; Chip Removal Principles: Lathes, Assembly and planing machines, Grinding machines, Broaches, Chip removal with finishing cut.

**MAK115 Mechanical Drawing I 3+1 4.0**

Geometrical Drawings: Angle, Spring, Curved, Straight line, Constructs the common tangents to two circles; Projection, Drawing View: 1st angle projection, 3rd angle projection including the use of hidden detail lines; Dimensions; Identifying The Standard Symbols for Machined Surfaces; Section Views; Perspective Drawing: Spring, Curved; Standard Machine Components: Bolt, Loaf, Pin, Peg, Rivet, Welding.

**MAK134 Engineering Science 3+1 4.0**

Circular Movement: Angular moment, Angular velocity, Angular acceleration, Torque; Potential-Kinetic Energy and Momentum: Principles of conservation of momentum; Impulse, Torsional moment, Inertia moment; Potential Energy, Kinetic Energy; Simple Machines; Fluids; ; Heat Energy and its Effects: Internal energy, Entalphy, Boiling point, Melting point, Specific entalphy, Steam; Basic Gas Laws: Constant pressure, Constant volume, Constant temperature, Cycle of carnot.

**MAK221 Computer Aided Design I 3+1 4.0**

Basic CAD Applications: Commands of limits, Units, Grid, Snap, Ortho, Menu, Save, End, Quit, Screen; CAD Station Drawing Spring: Drawing sector, Drawing straight line; Coordinate Systems: Commands of zoom, Pan, Redraw, Regen Fillet, Chamfer, Break, Trim, Move, Copy, Array, Offset Murrormirttext, Rotate, Ellipse, Polygon, Rectangle, Trace, Fill, Solid, Donut, Polyline, Divide, Measure, Change Color, Linetype, Ltscale, Scale, Explode Extend, Stretch, Block, Wblock, Insert, Minsert, Layer, Hatch, Help, List, Area, Dblist, Dist, Id, Status.

**MAK229                    Mechanical Science and Elements                    3+1   4.0**  
Basic Terms: Diagram of force extension, Stress, Modulus of rigidity, Safety coefficients, Poisson's ratio; Stress: Gliding stress, Shear stress, Hardness, Bending stress, Flow tension, Extension, Elasticity, Beam, Grade, Moment of inertia, Torsional stress, Machine Components: Rivet, Welding, Solder, Bolt, Archer, Shafts, Bearing, Journal bearing, Roller bearing, Lubrication.

**MAK240                    Hydraulic and Pneumatic Systems                    3+1   4.0**  
Basic Terms of Hydraulic: Bernoulli's equation, Continuation, Flow variety, Reynold's number; Elements in Hydraulic Pneumatic: Gear pumps, Sliding pumps, Piston pumps, Screw pumps, Directional control valves, Flow control valves, Pressure control valves, Cylinders; Basic Terms in Pneumatic: Absolute temperature, Absolute pressure, Isothermal, Adiabatic, Compression; Elements in Pneumatic: Air lubrication, Compressor, Directional control valves, Flow control valves.

**MAK242                    Administrating Management and Manufacturing Control                    1+1   3.0**  
Management and Manufacturing: Preplanning, Forecasting, Planning, Organisation, Job, Batch, Flow and automatic types of production, Industrial wage, Waste of energy, Material consumption, Statistical of quality control, Production, Planning; Control Rules of Management: Quality control, Stock control, Buck keeping; Marketing; Planning, Orient and Check; Education; Turkish Work Laws; Auditing: Strike, Lockout, Syndicate.

**MAK251                    Energy Management                    3+1   4.0**  
Common Energy Situation of Turkey; Structure of Turkish Industry; Energy Direction: Importance of energy consumption; Energy Committee; Energy Manager and His Duties; Measurement Devices and Measurement Techniques; To increase Energy Efficiency in Accidents; Electrical Systems: Energy Saving in Electrical Motors, Energy saving in lightning; Economical Analysis Methods; Alternative Energy Sources; Compound Heat-Power Production Systems.

**MAK257                    Non-Destructive Testings                    2+2   4.0**  
Testing with Penetrating Sprayed Paint (Penetrant Paints); Testing with Magnetic Pieces (Magnaflux): Permanent magnets, Electromagnets, Contact current flow, Coil methods; Testing with Eddy Currents; Testing with Infrared Rays; Testing with Industrial Radiography (X and Gamma Rays); Testing with Ultrasonic Waves: Piezoelectric Calibration; Chemical Composition Analysis (Spectrograph).

**MAK259                    Machine Drawing II                    3+1   4.0**  
Tolerances and Surface Qualities: Surface process marks, Chip marks; Construction Drawings: Gear wheels, Design of a double gear wheel according to given center distance and data; Assembly Images: Basic standard screw thread profiles, Single square screw, Multi square screw, Square screw, Saw screw, Trapezoidal screw, Screw thread, Bearings, Ball bearings, Cams; Office Practice: Production drawings in accordance with Turkish standards, Production drawings, Tolerances in accordance with Turkish standards.

**MAK261                    Application of Engineering Science                    2+2   4.0**  
Engineering Systems: Definition, Fields of application; Design and Implementation of a Mechanical Part; Design and Implementation of Mechatronic Parts; Examination of Case Studies; Application Study: Investigation of the subject, Costing, Designing of the system, Application of the designed system.

**MAK263                    Material and Mechanical Testing                    3+1   4.0**  
Material Testing: Introduction, Importance, Material testing methods; Destructive Examinations: Definition and Scope, Importance, Usage objectives, Properties of materials that can be detected with destructive examinations, Classification of destructive examinations and places of use; Experiments and Analysis Techniques: Tensile, compression, torsion, hardening, impact, wear, fatigue, creep, corrosion experiments, Techniques of metallographic analysis; Destructive Examinations of Industrial Pieces and Examination Standards.

**MAK265                    Machine Drawing Applications                    2+2   4.0**  
Basic Geometric Drawings; Invisible Detail and Section Drawings; Dimensioning; Surface Treatment Marks; Production and Assembly Drawings: Drawing of basic material profiles, Drawing and dimensioning standard machine elements; National and International Standards; Drawing of Sample Material Parts: Drawing of the details and sections according to the standards, Dimensioning and evaluation.

**MAK272                    Computer Aided Design II                    2+1   3.0**  
Dimensioning: Dimension line, Extension lines, Dimension arrows, Layout of writing, Text format, Perspective drawing, Printer and printing; 3D Drawing: Features, Colors; Linear Dimensioning: Horizontal dimensioning, Vertical dimensioning, Inbuilt dimensioning, Rotated dimensioning, Basic line, Continuous dimensioning, Angular dimensioning, Radial dimensioning, Diameter dimensioning, Radius dimensioning, Ordinate dimensioning; 3 Dimensional Drawing.

**MAK274 Computer Aided Machine Tools 2+1 4.0**

Production Technologies: Traditional production methods, Numerically controlled production technologies, Comparison of production methods; Computer Aided Production and Manufacturing Methods: NC and CNC control systems; CNC Lathe: Production process in CNC lathe, CNC lathe cutters and control panels, CNC lathe maintenance; CNC Milling Machine: Production process in CNC milling machine, cutting and control panels used in CNC milling machine and maintenance of CNC milling machine.

**MAK278 Heat Treatment Technology 2+2 4.0**

Steel Structure: Crystal structure, Crystal structure errors, Solid solution, Annealing, Rapid cooling, Slow cooling; Steel Annealing: Normalization annealing, Softening annealing, Stress relieving annealing, Recrystallization temperature; Steel Hardening: Watering, Tempering, Cementation; Heat Treatment Methods Suitable for Steel; Building Steels, High-Speed Tool Steels, High-Speed Steels; Crystal Structure Errors, Jominy Experiment.

**MAT125 General Mathematics 3+1 4.0**

Basic Concepts: Sets, Number systems, Expressions with whole and rational powers, Identities, First and second degree equations; Ratio and Proportion: Definitions, Types, Problem Solving Using Proportions; Percentage and Interest Ratios: Percentage and Interest Calculations; Functions: Relation and Function Concepts, Function Operations, Linear and Second Order Functions and Their Graphical Representations, Exponential and Logarithmic Functions and Their Graphical Representations.

**MAT140 Vocational Mathematics 3+1 4.0**

Linear Equation Systems and Matrices: Equation system solution, Matrix operations, Determinant, Inverse matrix; Limit and Continuity: Limit, Limit taking, Function continuity; Derivative and Applications: Geometric and physical meaning of derivative, Taking Derivatives, Tangent equation, Finding maximum and minimum points; Integral and Applications: Integral, Taking Integral, Calculating center of gravity with area and volume; Differential Equations: Simple differential equations, Boundary conditions, Solution of differential equations; Statistics: Basic terms, Frequency distribution, Graphic representation of data, Standard and mean deviation. --

**MEK104 Statics Strength of Materials 3+0 4.5**

Introduction to Mechanics; Static of Rigid Materials; Truss Systems; Distributed Forces; Center of Gravity; Analysis of Structures; Forces in Beams and Cables; Method of Virtual Work; Friction; Mechanical Properties of Materials; Linear Elasticity; Hooke's law; Moments of Inertia; Bending Moment.

**MEK209 Mechanics of Materials (Dynamics) 3+0 3.0**

Inner and Outer Force: Static loads, Dynamic loads, Tension and stress, Strength, Factor of safety; Pulling and Pressing Strength: Hooke's law, Trimming strength, Pins and Designing; Moment of Inertia; Torsion Strength Composite Stress Strength; Tender Columns; Wearing: Repeating loads, Examining broken weary cross sections.

**MEK211 Soil Mechanics 3+0 4.0**

Physical and Index Properties of Soil: Gravity-volume relations, Viscosity limits; Classification of Soil; Water Currents on Soil: Permeability and leakage; Stress-Deformation Relation in Soil Block; Compaction; Squeezed Soil: Consolidation settling and sudden settling; Gliding Resistance of Soil; Ground Pressure; Soil Carrying Capacity for Superficial Foundation.

**MiM216 Architectural Project Analysis 2+1 3.0**

Operating Principles of CAD-based Computer Programs Used in Construction Sector; Program Commands; Exercise on Commands, Drawing of the Plan, Section and External View of an Architectural Project with CAD-based Computer Program; Modeling a Two-dimensional Project as a Three-dimensional Project together with Environmental Layout.

**MLZ112 Materials Knowledge 3+0 3.0**

Importance of Materials Science and Engineering; Atomic Structure and Bond Forces: Formation of atomic structures, Crystal structures and their types, Crystal structure errors; Solidification and Melting Behavior: Equilibrium, Phase, Liquefaction curve, Evaluation of equilibrium diagrams by examining solidification curve; Industrial Materials; Examination of Ferrous and Non-ferrous Metals: Introductions and standards; Material Selection Criteria; Application Examples.

**MRK109 Basic Principles in Machine Construction 2+0 2.0**

Lightness, Determination, Simplicity, Safety, Compliance with Standards, and Prevention of Stress Stacking in Construction; New Design in Terms of Manufacturing, Transportation and Ease of Installation; Constructive Design According to Forcing Forms; Measures to Facilitate Surface Finishing; Rules to Consider during Production Drawing; Design of the Parts to be Heat-Treated; Points to Consider in Designing the Machine Parts to be Manufactured by Casting; Modification and Improvement of the Systems Used.

**MRK213**            **Technical English**            **3+0 3.0**  
Speaking: Introduction himself and others, Subjects interested with working place, Demands in formal place, Offering help, Excuse, Apology, Necessity, Obligation, Quantity, Ratio Percentages, Estimating, Instruction; Listening-Understanding: Understanding in professional subject; Writing: Taking note, Curriculum vitae, Business letters, Passive structure usage; Reading-Understanding: Conjunctions indicate time, purpose, condition, Expressions in passive structure, Expressions indicate contrariness, Dictionary usage.

**MRK221**            **Construction Applications**            **2+2 4.0**  
Points to Consider When Designing and Drawing Machine Parts; Steel Construction Applications; Machine Construction Preparation and Application of Prefabricated Construction; Construction Drawing Applications: Drawing of parts to be produced by casting, Drawing of moving, pressuring, pushing and removing plates, Detailed drawings of extrusion and precision press molds; Drawing Negative and Positive Plastic Volume Molds.

**MRK222**            **Construction**            **2+1 3.0**  
Design and Construction: Definition, Objectives, Basic construction principles, Points to consider in the design of machine parts; Cross Section and Openings; Drawing Techniques of Standard Mold Components; Sketch Drawings; Construction Drawings: Model drawing, Modelling drawing, Molding drawing; Examples of Various Constructions: Mills, Pulleys, Conical gear wheels.

**MRK223**            **Industrial Measurement Techniques**            **1+1 2.0**  
Basic Principles of Measurement and Control: Information about the terms, Classifications, Standards used in the world; Units Used in Measurement and Control: SI unit system; Definitions and Concepts of Length and Protractors Used in a Basic Workshop; Basic Properties of Measurement: Errors of measurement, Calibration of the device; Teaches the Technique of Reading the Length and Protractors; The Rules of other measurements used in the industry: Pressure, temperature, flow, level and roughness, Working techniques of the devices used; Specialized Measurement and Control Devices; New Measurement and Control devices.

**MRK298**            **Internship**            **0+4 5.0**  
Information about Internship: Purpose, Method, Process, Professional Awareness: Scope of the Profession, Research-Oriented Areas, Practical-Oriented Areas, Occupation and Employability; Occupation and Career Planning; Vocational Training and Specialization: Documentation of Expertise; On-site Practice: Field Trip Technical Trips and Application Studies; Project Design: Determination, Planning, Analysis, Method and Equipment Selection, Application and Conclusion, Reporting and Presentation.

**MTR101**            **Circuit Analysis**            **3+0 4.0**  
Concepts of Circuit Analysis; Electric Current; DC Circuit Elements; Voltage; Energy, Power; Resistance; Capacitance; Inductance; DC Circuit Analysis; Alternating Current; Frequency; Phase; Impedance; AC Circuits Analysis; Relay Systems; Transformers; Principles of Electric Engines; Generators; Engines.

**MTR102**            **Measurement Techniques**            **1+1 2.0**  
Measurement Techniques; Importance of Measurement; The International System of Units (SI); Base units and derived units; Importance of Calibration; Accuracy, Sensitivity Concepts; Error and tolerances; Analog and Digital Measurement Devices; Measuring Current, Voltage, Power, Frequency, Phase and Electrical energy; Using Oscilloscope; Measuring Mechanical, Hydraulic and Thermodynamic Quantities: Velocity, Pressure, Temperature and Heat Measurements; Job Safety Rules for Electrical Measurements.

**MTR105**            **Mechatronic System Fundamentals**            **3+0 3.0**  
Mechatronics: Definition, Mechatronic structure components, Mechanical systems and their design, Electronic systems, Automation systems, Information systems, Process systems; Sensors and Transducers; Mechanical and Electrical Actuators; Systems Modelling: Dynamic responses of systems, Transfer functions, Frequency response, Closed loop controllers; Microprocessors: Assembly language, Input-output systems, PLC; Electricity: Reliability, Basic electrical measurements, Operation of oscillators and signal generators, Electrostatically sensitive parts.

**MTR204**            **Electro hydraulics/Electro pneumatics**            **2+1 4.0**  
Introduction to Fluid Power; Energy and Power in Hydraulic and Pneumatic Systems; Pumping Theory; Classification of Pumps; Hydraulic Cylinders and Engines; Valves and Other Control Components in Hydraulic and Pneumatic Systems; Hydraulic and Pneumatic Circuit Design and Analysis; Logical Flow Control Systems; Moving-part Logic circuits; Fluid-control of Fluid Power Systems; Electrical-control of Fluid Power Circuits; Electro Hydraulic Servo Systems; Programmable Control Systems (PLC); Applications of Electro Hydraulic, Electro Pneumatic and PLC Systems.

**MTR207**            **Sensors and Transducers**            **1+1 3.0**

Definitions of Sensors and Transducers; Differences of Sensors and Transducers; Selection of Sensors; Self Generating Sensors and Modulating Sensors; Static and Dynamic Characteristics of Sensors; Classification of Transducers: Position transducers, Force transducers, Movement transducers, Fluid transducers, Temperature transducers, Variable resistance transducers, Variable inductance transducers, Variable capacitance transducers, Light and Radiation transducers; Medical Sensors; Sensor Applications in Electronic Device Circuits.

**MTR208                    Mechatronic System Design                    1+1   3.0**

What is mechatronics?; Sensors and Transducers; Signal Conditioning; OPAMP; Filtering; Wheatstone Bridge; Data Acquisition and Representation Systems; Mechanical and Electrical Actuators, Drivers; Modeling Systems; Dynamic Responses of the Systems; Transfer Functions; Frequency Response; Closed-loop Controllers; Digital Logic; Microprocessors; Assembly Language; Input-output (I/O) Systems. Programmable Logic controllers (PLC); Realization of a Mechatronic System as a Project.

**MTR210                    Technical English                    2+0   3.0**

Speaking: Introduction of himself and others, Subjects interested with working place, Demands in formal place, Offering help, Excuse, Apology, Necessity, Obligation, Quantity, Ratio Percentages, Estimating, Instruction; Listening-Understanding: Understanding in professional subject; Writing: Taking note, Curriculum vitae, Business letters, Passive structure usage; Reading-Understanding: Conjunctions indicate time, purpose, condition, Expressions in passive structure, Expressions indicate contrariness, Dictionary usage.

**MTR212                    Process Measurements                    3+1   3.0**

Instrumentation Terms: Definition of sensor, Fluency, Transmitter; Measurement Errors; Position Instruments: The kind of limit switches and it's way of using; Pressure and Vacuum Measurements: Pressure measurement methods, Vacuum system, Manometer and its studying and using; Weight and Strength Measurements: Weight measurement at fluids; Velocity and Acceleration Measurements: Definition of velocity and acceleration.

**MTR214                    Applications of Mechatronic in Industry                    1+1   2.0**

Applications of Mechatronic; Mechanical Systems; Processing of Mechanical Components; Design of Mechanic Components; Design of Mechatronic Components; Realization of Mechatronic Components; Project Process: Project file, Functional efficiency, Organization of project, Cost analysis of project, Control of project, Presentation.

**MTR218                    Fuzzy Logic                    3+1   4.0**

Introduction to Fuzzy Logic; Fuzzy Logic Set Theory: Classical and fuzzy sets, Set operations on fuzzy logic; Fuzzy Arithmetics: Addition and subtraction of fuzzy numbers, Multiplication and division of fuzzy numbers; Fuzzy Logic Membership Functions; Fuzzy Relations; Fuzzy Logic Inference System: Mamdani fuzzy model, Sugeno and Tsukamoto models; Applications of Fuzzy Logic: Matlab fuzzy logic toolbox.

**MTR220                    Process Control                    3+0   3.0**

Automatic Control Concepts: Reference (Set Point), Error, Process (Controlled) variable, Measurement (Controlling) definitions, Maximum overshoot, Rise time, Settling time definitions; Automatic Control Symbols; Automatic Control Methods; Definitions of Open Loop and Closed Loop Control Systems; Various Control Structures; Stability in Control Systems; End Driver Components.

**MTR298                    Internship                    0+4   5.0**

Information about Internship: Purpose, Method, Process, Professional Awareness: Scope of the Profession, Research-Oriented Areas, Practical-Oriented Areas, Occupation and Employability; Occupation and Career Planning; Vocational Training and Specialization: Documentation of Expertise; On-site Practice: Field Trip Technical Trips and Application Studies; Project Design: Determination, Planning, Analysis, Method and Equipment Selection, Application and Conclusion, Reporting and Presentation.

**RTV114                    General Communication                    3+0   3.0**

Definition and Concept of Communication; Elements of communication process; Culture and Communication: Definition and concept of culture, Elements of culture, Types of culture; Non-verbal Communication: Definition, Functions, Codes of non-verbal communication; Organizational Communication: Functions, Organizational culture, Formal communication channels; Communication Tools; Mass Communication: Definitions, Characteristics, Functions; Basic Communication Theories.

**RTV116                    Radyo Programming                    2+2   4.0**

Basics of Radio Programming: Concept of program, Characteristics of radio programs, Types of radio programs; Program Production Processes: Preparing proposal forms, Guests selection, Determination of music, Writing the text; Types of Broadcasting: Live and Recorded; Program Planning; Characteristics of Radio Studios.

**RTV121 Measurement and Maintenance at RTV 2+1 3.0**  
Concept and Definition of Measurement; Basic Electricity Knowledge; Wiring Specifications in System Installation; Video Signal Measurement and Maintenance; Light Level Measurement and Maintenance; Audio Level Measurement and Maintenance; Camera Maintenance and Preparations Before Shot; Maintenance of Sound Recording Devices; Maintenance of Sound Recording Hardware.

**RTV122 Camera and Lighting Technics 2+2 4.0**  
Camera History; Camera Types and Structures; F-number; Depth of Field and Variables Affecting It; Lenses and Lens Types; Equipment of Electronic Cameras; Studio Control Rooms: Mobile recording tools, Camera supports, Power sources. Lighting Concept: Light Intensity and Color Temperature; Lighting Sources; Effects of Lightinf; Psychological Effects in Lighting; Lighting Aesthetics;; Color Case and Color Control: filters; Outside Lights and Interior Lights

**RTV129 Image Technique 3+1 4.0**  
Basic Cinema Technology: Film cameras, Film formats; Basics of Television Technique: Forming image on television; TV Broadcast Standarts: Properties of PAL, SECAM and NTSC systems, Basics of PAL broadcast system; Physics of Color: Spectrum of electromagnetic waves, Color saturation, Tone of color, Type of color, Brightness, Luminance, Chrominance, Color temperature; Electronic Cameras: Working principles of cameras; Principles of Video Recording and Reading: Video recording, Video reading, Electronic editing.

**RTV131 Radio-Television Broadcast Systems 2+2 4.0**  
Historical Development of Radio; Basic Information about Radio: Radio waves and frequencies, FM and AM transmitters; Technological Equipment Necessary for Radio Broadcasting; Historical Development of Television; Basic Information about Television; Television Broadcast Techniques; Radiolinks, Sattelites, Cable broadcasting; Technological Equipment Necessary for Television Broadcasting.

**RTV133 Audio Technique 3+1 4.0**  
Formation and Definition of Sound: Sound and hearing; Physical and Perceptual Features of Sound: Frequency, Wavelength, Amplitude, Frequency and hearing, Frequency and pitch, Amplitude and intensity, Frequency and intensity, Timbre, Sound envelope; Structure of Audio Signal: Analog and digital audio signal, Mono and stereo audio signal; Audio Connection Components: Cables and connectors; Microphones: Structural and directional features of microphones, Microphone usage techniques, Microphone accessories; Audio Mixers: Audio mixers usage areas, Basic structures of audio mixers; Sound Recording Techniques on film and video cameras.

**RTV135 Studio Equipment and Usage 2+2 3.0**  
Camera control unit: definition, characteristics, and functions of the camera control unit; camera control: camera used in a studio environment control units (CCU); the key features, the camera control unit of structure and functions;remote control panels (RCP): Properties, structure, functions, basic measurement devices; and Waveform/Vectorscope to make following Router matrix of the image distribution image distribution amplifier (VDA); Converters: purpose of use, structure, properties; Monitoring Monitors and reference Monitors

**RTV234 Working Life in Media 2+1 3.0**  
The Economical and Legal Conditions for Media Personnels; Basic Concepts and Foundations Towards Working Life in Media. Media Expertise as Professional Group, Radio Broadcasting, Journalism, Television Broadcasting, Advertising; The Characteristics and Working Conditions of Media Members, Legal Regulations in Media Towards Working Life, The aim and content of Labor Laws of Press. The Radio Television Chief Committee and Their Aim, The Issues in Media Sector, The Ownership of Media and Relations with Staff, Employment; Media in Respect of Turkish Laws, Principles of Press, The Actual Situation in Turkey, The Principles of Local Television, Radio and Press.

**RTV242 Video Editing Applications 1+2 3.0**  
Aim of Editing in Video and Audio; Editing Magnetic Tapes: A-B roll editing system, Necessary software and connections for desktop editing, Differences between A-B roll editing and desktop editing, Preparations before editing in desktop editing systems; Meaning of Time Code and Editing Script; Desktop Editing: Computer and its hardware and software for desktop editing; Video and Audio Signal Transfer to Computer; Concepts of Capture and Import; Editing Orograms: Basic characteristics, Main effect groups, Exporting the projects in editing programs.

**RTV243 Kamera-Lighting Applications 2+2 3.0**  
Cameraman and Characteristics of A Cameraman; Basic Knowledge of Image And Light; Studio: Studio equipment, Lighting sources in studios and aids equipment, Studio lighting technics; Studio Equipments: Tripod, Stand, Pedestal, Jimmy jib, Crane; Studio Cameras: Structure, Body, Objectives, Visor, Connection Systems; Camera Movements; Shooting Scale; Exterior Shoots: Environments, Equipment, Lighting, Camera movements and scale; News Cameraman; Documentary Cameraman.

- RTV245 Radio Broadcasting Systems and Applications 2+1 4.0**  
 Basic Elements of Radio Broadcasting: Voice, Words, Music; Radio and Radio Listener's Features; Production Preparation and Organization; Radio Broadcasting/Studio Equipment: Radio automation systems; Oratory and Diction; Radio Program Types: Music, Documentary, Culture, Art and News; Studio Practice: Voiceover and Editing.
- RTV247 Digital Recording and Archiving 2+2 4.0**  
 Types of Audio and Video Archives; Terminology of Audio and Video Recording; Mass Communication Tools and Record Production: Institutions Providing Resources for Mass Communication and Record Production; Management of Audio and Video Records: Selection and Evaluation, Establishment of Classification, Cataloguing and Access System, Storage, Conservation and Restoration, Immigration Records, Core Benefits and Legal Problems; Bibliographic Control of Digital Resources and Metadata; Thesaurus as a Tool of Information Identification and Retrieval; Digital Archives and Production System (Cinegy) and Examples of Application.
- RTV248 Television Advertising 2+1 3.0**  
 Writing; Story Board; Shooting Board; Types of Camera Shooting; Visual Displays; Camera Movement; Production Companies and Director; Casting; Photo Shootings; Montage; Production and Post-Production.
- RTV249 Video Editing Technics 2+2 4.0**  
 Cable Systems Used in Image and Sound Transmission: Types of video and audio signals, Types of analog and digital cables and connection; Historical Development of Video Cameras; Basic Elements of Video Cameras; Types of Video Cameras; Principles of Video Cameras; Camera Objectives: Structure of objectives, Classification of objectives; Importance and Role of Lighting; Reasons of Using Lighting in Shooting; Technical reasons, Aesthetic reasons; Lighting Equipment; Lighting Methods.
- RTV259 Television Program Production Techniques 2+2 4.0**  
 Basic Concepts: TV program types, Broadcasting types and shooting types; Program Production Process; TV Program Narrative Structure and Production Elements: Audio visual narrative elements; Treatment, Scenery technics, Budget; Production Process: Planning, Shooting technics and scales, Shooting rules; Eye lines, Action lines, Continuity; Post Production: Transitions and effects.
- RTV261 Text and Scenario Writing 2+2 4.0**  
 The concept of scenario: theme, plot, character creation, plot, conflict, climax Point, storytelling; Scenario Sections: the shot, scene, Distinction, Chapter; a draft of the screenplay; Scenario Development; Scenario Segmentation; preparation of Storyboard; shooting script; and the transition method to be used in Fiction Information; the concept of Narrative and narrator in the film; the installation of the narrative Formats; the basic components of the cinematic narrative; cinematography, sound design and audio components; affecting the rhythm of the short film; Filmic time and space in the narrative, use of dialogue and scenario the use of scenario analysis.
- RTV263 Short Film 2+2 4.0**  
 Narrative theory; forms of narrative installation; creating dramatic structure; conflict in dramatic structure; creating short Film story; developing short Film story; Art Of Cinema and storytelling; Sound Design in Cinematography; use of Music In Film; image editing and continuity; storyboard narration of short film; concept of narrator in short film; character creation in short film; film analysis
- RTV265 Media Literacy 2+1 3.0**  
 Media Literacy: Concept, Definition and Importance; Historical Development, Theories and Principles; Critical Approaches; Media Enterprises: Possession and control, Regulation and policy-making, Production and Distribution; Structure of Media Message; Configuration and Interpretation of Visuals: Power, Gender in public and media, Children and advertising, Censorship, Racism and Monopolization.
- RTV267 Digital Communication Technologies 2+2 4.0**  
 Communication Technologies: Definitions, Developments and Features; Classification of Communication Technologies; Analog and Digital Communication Technologies; IT: Computers, Information Technologies; Social Networking, Network Technologies, Hybrid Technologies, Mobility, Innovation, Digital Transformation, Convergence and Globalisation. Cyber Technologies: Smart, Artificial Intelligence, Virtual Reality, Augmented Reality
- RTV269 Digital Broadcasting 2+2 4.0**  
 History of Internet Technologies; Internet and Social Media; Digital Evolution of Media; Web 1.0 and Web 2.0 Technologies; Blog Technologies; Social Sharing Sites; Podcast Broadcasting; Digital Video Broadcasting; Internet Journalism; Internet Radios; Internet Televisions (IPTV); Cable TV and Broadcasting Properties; Computer Communication Genres; Video Conference Systems and Usage Areas; GSM and Satellite Phones.



- RTV270 Sound Application 2+2 4.0**  
Physical Properties of Sound: Frequency of sound, Sound amplitude, Sound tone; Microphones: Structural properties, Dynamic and condenser microphones, Direction properties, Single and multi-directional microphones, Shotgun microphones; Sound Mixers: Broadcast sound mixers, Post-production mixers, In-line mixers; Sound Recording Equipment: Tape recorders, Digital recorders; Sound Signal Processors: Compressor and Limiter; Loudspeaker and Cabin Systems; Stereo Sound Recording: XY and MS methods.
- RTV271 Social Media Content Production and Management 2+2 4.0**  
Social Media Definition and Features; Social Media Platforms and Features: Digital Content Production: Principles of Digital Content Production. Corporate Content Production, Commercial Content Production. Visual Creation Criteria, Literary Criteria, Photo Qualities. Platform Target Audience Relationship. Platform Management and Sharing Qualities. Interaction, User Relationship Management.
- RTV273 Media Management 2+2 3.0**  
Media Companies; Qualifications of Media Companies: Radio stations, TV stations, Film studios, Newspapers and Magazines, Publishing. Production and Broadcasting Organizations: Organizational structure, workflow, job descriptions; Digital Content Producers; Structure of the Media Industry; Content Production Styles and Features; Content Publishing Strategies, Publishing Planning, Audience Analysis.
- RTV274 Interactive Television Applications 2+2 4.0**  
Interactive Television: Definition of digital TV broadcasting; Standards of Digital Communication: Transmission areas of digital broadcasts, Receiving digital television broadcasts; Interaction on Television: Interactive services on television and interaction levels; Analysing interactive TV applications, Interaction opportunities of DTV broadcasting: Semi-interaction, Full interaction; Designing Interface for Interaction: Designing interface for semi-interaction, Designing interface for full interaction.
- RTV275 Web TV Broadcasting 2+2 4.0**  
Network-based Broadcasting: Definition and Features. ; Network broadcasting: Development and Types; Internet TV, IPTV, Web TV; What is Web TV ?; Web TV System Features: Web TV Configuration: Technical features: TVE Configuration: Hybridization, Mobility; Content Features: Web TV Broadcast Planning, Content Preparation, VTR Preparation; Interactive Configuration; Web Live Broadcast; Web API Connections. Video Streaming. Channel and Social Platform Publishing: Limitations, Features, Usage and Effects.
- RTV277 Digital Corporate Communication 2+1 3.0**  
Corporate Communication and Digital Transformation: Traditional corporate communication, Digital corporate communication; Strategic Communication Management and Theoretical Infrastructure of Digital Corporate Communication; Identity- Brand- Image and Reputation Management; Digital Corporate Advertising; Institution Digitalization in Internal Communication; Digital Activism and Civil Society Organizations; Management of The Digital Corporate Communication Campaign.
- RTV279 Digital Culture and New Media 2+1 3.0**  
Global Digital Age: Self theories in the digital age, Digital culture, Media and transformation; Social Layers in Technology Usage; New Space in the Digital Age; Accessibility and Usability in the Digital Age; Definition of Content in New Media; New Media Writing and Hypertext; New Trends in Content Production: User-friendly content production; Sharing Culture and Intellectual Property.
- RTV280 TV Program Production Applications 2+3 5.0**  
TV program pre-production process: Program idea development, program proposal, Synopsis, Treatment writing, Storyboard, Budget preparation, shooting time calculation, Editing time, cost calculation, standard budget items; script writing: Technique, script writing layout, shooting numbering, showing sequences; planning: calendars, shooting planning, shooting permits; production process: shooting techniques; genres, scales, Chromakey, Basic Rules, shooting rules, realization of shooting; post-production: editing and evaluation.
- 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 Disinformation Concepts; Information Usage and Sharing in the Web Environment; Web Ethics: Privacy and Privacy in Social Media Use.
- RTV282 News Gathering and Writing Techniques 2+2 4.0**

News Description and Elements; Event Notification Criteria; 5 N-1 K Rule; News Values; Actors of the News; News Types and Types; News Gathering Methods; Importance of Photography and Visual Elements in News Gathering Process; News Feeds; Language of News and Elements to Consider in News Writing; Word Selection in News Text Writing; News Entry Types and Techniques; Interview and Interview Types; News Auditing And Verification Process; Press Professional Ethics and Principles; Problems Encountered in Journalism and Rules of Good Conduct.

**RTV283 Radio Program Preparation and Application 2+2 4.0**

Radio Language and Features; Basic Elements of Speaking on Radio; Writing and Expression Language in Radio Journalism; Considerations When Writing Radio News; Announcer and Server Features; Basic Materials Used in Radio Broadcasting; Radio Program Production Types; Program Preparation on Radio: Deciding on the Program Format and Format, Determining the Subject of the Radio Program, Research Phase, Preparation of Suggestion and Suggestion Form, Writing Radio Program Text; Formal Features of Radio Program Text; Program Identification Form; Announcer and Server Features; Preparing An Interview on Radio; Preparing an Interview on Radio.

**RTV284 Creative Writing 2+2 4.0**

Introduction to Creative Writing; Basic Competencies and Features for Creative Writing, Things to Know Before Writing, Elements that Develop and Prevent Creativity; Features of Literary Text; Basic Features of Storytelling; Basic Elements of Storytelling: Theme Selection And Topic, Conflict Types and Conflicts in the Story, Creating People and Characters, Place and Space Usage: Time in Story, Space in the Story; Dialogue and Speech in the Story; Visual Narrative Structure.

**RTV285 Audio Description Practices 2+2 4.0**

Narrative Theory; Storytelling; Accessibility: Audiovisual Media Accessibility, Audiovisual Text, Experiencing and Storying; Audio Description Definition; Methods of Audio Description; Audio Description as a Storytelling Tool; Past to Present Audiovisual Translation in Turkey; Audio Description Competencies and Training; Production in Audio Description: Audio-visual Product / Environment, Audio Description Derivatives, Qualities and Language of the Text, Text Production Time, Text Production Method, Voice of the Text, Transmission Stage in Audio Description, Consumption Stage in Audio Description.

**RTV286 Announcer and Interview Techniques 2+1 3.0**

Speaking and Listening, The Effective Use of Sound and Voice, Voiceless Communication, The Effective Use of Body Language, The Control of Breath, Voice Training and Articulation, The Usage of Period in Speaking, Sounding and Concepts, Studio Knowledge, The Usage of Microphone, Pursuing The Film and The Text From The Monitor, The Concept of Reggie, The Harmony of Casting and Voicing Artists, The Voicing of Production, Animation, Documentary and Advertising Films, The Presentership of Open Faculty, Radio and Television Programs, The Voicing of Documentary, Radio Theatre, Congress Presentation, Diction, Phonetic, Articulation, News Announcing, Sport Announcing.

**RTV298 Internship 0+4 5.0**

Information about Internship: Purpose, Method, Process, Professional Awareness: Scope of the Profession, Research-Oriented Areas, Practical-Oriented Areas, Occupation and Employability; Occupation and Career Planning; Vocational Training and Specialization: Documentation of Expertise; On-site Practice: Field Trip Technical Trips and Application Studies; Project Design: Determination, Planning, Analysis, Method and Equipment Selection, Application and Conclusion, Reporting and Presentation.

**SAN111 Fundamental Art Education I 3+0 3.0**

Goals, Content and Main Concepts of Fundamental Art Education; Design and Creativeness; Basic Plastic Elements: Paint, Line, Colour, Dimension, Shape, Surface; Material Identification; Plastic Components: Action, Rhythm, Volume, Place, Balance, Tissue; Usage Methods of Values and Applications; Light-Dark Values; Composition Setting; Form Associations: 2-D form, Adding third dimension.

**SAN112 Fundamental Art Education II 3+0 3.0**

Condition and Principles in Fundamental Art Education; Visual Record Elements; Universal Elements; Drawing Systems; Arrangement Factors; Analysing of Objects; Study Works; Derivation of Artistic Forms from Natural Forms: Getting object lineated synthesis, Migrating to new form; Material Identification; Analysing Artistic Work; Personal and Group Projects; Artistic Research Excursion.

**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; Flamenco, 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.

- SNT111 History of Arts I 2+0 2.0**  
 Definition, Content and Fundamental Concepts of History of Arts; Art Branches; Culture and Art Relation; Analysing Methods of Artistic Works: Material and technique, Theme, Figure, Shape, Specific content; Relations with Other Sciences: Philology, Palaeography, Epigraphy, Numismatic, Chronology, Archaeometry, Geography, Ethnography, Anthropology, History, Archaeology; Developed Theories About History of Arts; Reflection Theory; Pre-historical Art: Antiquity art, Middle age art, Renaissance, Baroque; Art Trends: Classicism, Romantism, Realism, Impressionism, Symbolism.
- SNT114 History of Art II 2+0 3.0**  
 Art Movements and Graphic Design; Arts and Crafts Movement; Typographic Revolutions; Font Designers; Classification of Typefaces; Art Nouveau; Art Movements That Affect Design in the Early 20th Century Art; Cubism, Futurism, Dadaism, Surrealism; Use of Posters in World War I, Russian Suprematism and Constructivism, De Stijl Movement, Bauhaus.
- ŞPL201 City Admiration and Environment 3+0 3.0**  
 Urban Management; Perception of City; Human and Environment; Globalization; Urban Culture and Identity; Environment and Participation; Industrialization and Urban Transformation; Effects of Urbanization to Environment and Ecological System; Urbanization and Environmental Problems; The Planning and Application Problems of Urban Technical and Social Services; Urban Planning and Administrative Organization; Importance of Public Participation in Urban Planning; Restructuring of Local Governments; Historical Development of Local Governments; Legal and Administrative Regulations.
- ŞPL202 Plans of Map and Expropriation 2+0 3.0**  
 Existing Maps; Types and Hierarchy of Plans; Development Plans, Regional Plans, Metropolitan Area Plans, Environment Organization Plan, City Plans: Land use plans, Detail plans; Procedures of Elaborating and Implementing city plans; Changing city plans, Expropriation: Process of Making an Expropriation Decision, Notifying the Owners; Organization of land and land subdivision control.
- 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.
- TEK107 Scientific Principles of Technology 3+1 4.0**  
 Material Properties: Chemical operations in burning and oxidation, Prevention from oxidation, Elasticity of material and Hook's Law; Static: Static balance state, Vectorial and scalar quantities, Moment, Center of gravity; Dynamics: Path, time, velocity and acceleration; Mechanic and Electromagnetic Wave Movement: Wave length, Frequency; Fluid Pressure: Pressure and its units, Absolute pressure, Relative Pressure; Electric and Magnetism: Simple circuits with serial and parallel connected resistants, Current, voltage difference and resistant problems.
- TER201 Thermodynamics 2+0 4.0**  
 Definitions and Fundamental Principles; First Law of Thermodynamics; Thermodynamic Systems; Heat and Work; Second Law of Thermodynamics; Entropy; Heat Energy; Carnot Principle and Carnot Cycle; Change of State of Gases; Heat Engine Cycles: Constant volume (Otto), Constant pressure (Diesel) and mixed cycles, Power cycles.
- 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.
- TİP113 Typography 2+1 2.5**  
 Defining Typography and its Importance in Graphic Design: Historical development of typography, Birth of writing and the first alphabets, Progress of Roman Alphabet until the Invention of Printing Press; Basic Terms of Typography; Typographical Editing Practice.

**TiP204**                **Typography Applications**    **1+1 3.0**  
Union of Typography and Image; Interaction Between Typography and Image; Using Typography and Image Together;  
Words within Images; Union of Typography and Image: Image as Letter, Letter as Image, Word as Image, Text as Image;  
Typographical Applications.

**TKY102**                **Quality Management Systems in Production**    **2+1 4.0**  
Standardization: Definition, Objectives and Principles, TSI and its functions, Regional and international standardization  
organizations; Quality and Quality Management: Definition of quality and related concepts, Quality approach, Quality costs  
and risks, Quality control concept, Total quality management; Professional Standards: Comprehending professional  
standards, Quality problems encountered by enterprises, Quality circles in printing sector; Application of Quality Control  
Methods to Printing Establishments: Reflection of quality assurance system in printing sector, Quality control stages in pre-  
printing, printing and post-printing processes.

**TOP102**                **Surveying**    **2+2 4.5**  
Concepts Related to Topography; Simple Measurement Tools and Horizontal Measurement: Application of right angles,  
Application of right angles by the help of prisms, Application of lines; Length Measurement: Calculation of Surveying and  
levelment; Calculation of Area: Calculation of area according to measurement values, Calculation of area according to  
coordinate values, Calculation of area according to Cross Method; Theodolite and Angle Measurement: Measuring  
horizontal and vertical angles, Length measuring; Drawing Maps and Plans Using The Dimensions of a Field: Calculation  
of Coordinates; Calculation of Polygons. Concepts Related to Topography; Simple Measurement Tools and Horizontal  
Measurement: Application of right angles, Application of right angles by the help of prisms, Application of lines; Length  
Measurement: Calculation of Surveying and levelment; Calculation of Area: Calculation of area according to measurement  
values, Calculation of area according to coordinate values, Calculation of area according to Cross Method; Theodolite and  
Angle Measurement: Measuring horizontal and vertical angles, Length measuring; Drawing Maps and Plans Using The  
Dimensions of a Field: Calculation of Coordinates; Calculation of Polygons.

**TRA203**                **Bridges and Tunnels**    **3+0 4.0**  
Bridges: Definition of bridges, Parts, Types; Bridge Standarts; Types of Bridges: Choosing, Factors effect on choosing;  
Road Bearing by Bridge and Complementary Parts; Computations and Solution Methods about Bridges; Bridge Project;  
Definitions about Tunnels; Aims of Tunnel Construction; Classification of Tunnels; Standarts of Tunnels; Transportation  
Tunnels; Strength Effect on Tunnels; Behavior of Tunnels under Effect; Technics of Opening Tunnels, Effect of factors on  
selection of tunnels; Machines Using on Construction of Tunnels; Tunnel Project.

**TRA220**                **Road Knowledge**    **2+1 3.0**  
History of Roads; Road Construction Methods and Inspection; Site Management in Road Construction; Classification of  
Roads: Highway, Railway, Seaway, Airway; Terms Used in Highway; Route and Survey: Preliminary project, Route  
definition, Soil, Stabilized, Asphalt and concrete road, Determination and confirmation of the final route; Profile; Road  
Materials: Bitumen, Bituminous materials, Asphalt, Asphalt cement, Liquid asphalt, Tar.

**TRA223**                **Geotechnics for Roads**    **2+2 4.0**  
Geotechnical Investigation for Road Construction; Soil Borings; Soil Compaction and Stabilization for Pavements;  
Fundamental of Drainage and Consolidation; Slope Stability and Retaining Structure Practices; Geosynthetics Design for  
Road Construction; Ground Anchors Practices for Road Construction; Road Earth Structures; Rock Mechanics for Road  
Construction.

**TRS104**                **Technical Drawing**    **2+2 4.0**  
Technical Drawing and Tools: Drawing tools, introduction, usage and care; Technical Drawing Papers: Papers used at  
drawing, Measurements of paper standarts; Scales: Applications; Standart Line: Usage areas, Line studies; Standart Writing:  
Inclined and Perpendicular writing, Writing studies; Geometrical Drawings: Angles, Setsquare, Ruler, Drawing angles by  
using compasses, Dividing to equal parts, combinations, Drawing regular polygons into a circle; Geometric Projection and  
Drawing Views; Scaling and Measuring; Cross Section Views; Perspective; Roughness of Surfaces and Surface Processing  
Signs; Tolerance and Exercises.

**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.
- YPD101 Building Inspection 2+1 3.0**  
Legal procedures in building inspection; Application Process: Building Material Standards; Control of material and laboratory tests; Application of Building: Control of steel and mold; Preparation of concrete; Compliance control of materials in projects.
- YPD102 Guidelines for Earthquake Resistant Construction 2+0 2.0**  
Causes and Characteristics of Earthquakes: Concept and definitions; Seismological assessment; Forms of ground motion; Design for earthquakes; Collecting the geological data's and evaluation; Slope stability analysis and landslides; Liquefactions; The basic design of foundation; Retaining structures; Construction on active faults; Strengthening of structures.
- YPD103 Structural Design I 3+1 4.0**  
Evolution of Concrete and Concrete Buildings: Structural Behavior of concrete elements; Structure and building loads; Design criteria for concrete framed structures; Elements of Concrete Framed Structures: Foundation, Floors, Stairs; Wall design; Exterior Wall Design: Wall types and assemblies, Metal cladding, Stud-backed walls; Drawing a Wall Section: Points to consider, Drafting guidelines; Reinforced prefabricated buildings; application systems; Assembling techniques of panel facade elements and joint analysis.
- YPD104 Structural Design II 2+0 2.0**  
Steel in Architecture: Evolution of Steel Structures, Steel- Framed Structures: Developments and achievements; Example of Steel-Framed Buildings; Principles of Design and Construction: Fundamentals of planning, Load bearing systems, Columns, Bracing, Flooring systems, Integration of building structure with building insulation; Steel stairs; External Walls: Curtain walls, Facade claddings; Internal Walls: Glass walls, suspended ceilings, raised floors; Roofs: Glass roofs; Corrosion and protection, Fire Protection; Wood in Architecture: Wood construction components; Principles of Design and Construction: Fundamentals of planning, Load bearing systems, Bracing, Floor structures, Construction of floors, Integration of building structure with building insulation, Wooden Stairs; External Walls and facade claddings; Internal walls construction; Roofs.
- YPD105 Construction and Material 3+0 3.0**  
Definition of Materials: History; Natural Stone as an Element of Construction Materials; Aggregate: Classification, Screen Analysis, Granulometry, Properties of Aggregates Used in Foundation Construction; Properties of Bitumen Aggregate; Experiments Applied to Aggregate; Plaster; Lime; Cement, Properties of Cement; Mortar and Properties; Concrete and Properties of Concrete; Mixture Ratios for Concrete Materials; Metals, Woods, Glass, Plastic Materials.
- YPD108 Building Electrical Installation Knowledge 2+0 3.0**  
Electricity Technology and Applications in Buildings; General Information About Electricity and Installations: Tools and Equipment Used in Electricity Installations; Recessed and Surface Mounted Installation and Rules; Regulations, Implementation and inspection in electrical installations; Electrical Installation Projects and Readings; Electric Motors in Construction and its their Use; Electrical Installation Panels and Hydrophoresofors; Devices Used in Heating and Natural Gas Installations.
- YPD201 Repairs and Strengthening of Structures 2+0 2.0**  
Damage Assessment in Building: Study of building survey; Non-Destructive Inspection and Destructive Inspection; Strengthening of structures. Repair and strengthening methods; Strengthening techniques of materials; Financial issues in Strengthening.
- YPD202 Damage in Buildings 3+0 3.0**  
Type of damage and causes in reinforced concrete elements; To apply basic principles to determine the damage status; Basic principles of surveying; The methodology of damage in buildings and their causes; Improvement of damages in buildings; Damages in wood, steel, concrete and reinforced concrete structures.
- YPD203 Technical English 2+0 2.0**  
Speaking: Introduction of himself and others, Subjects interested with working place, Demands in formal place, Offering help, Excuse, Apology, Necessity, Obligation, Quantity, Ratio Percentages, Estimating, Instruction; Listening-

Understanding: Understanding in Professional subject; Writing: Taking note, Curriculum vitae, Business letters, Passive structure usage; Reading-Understanding: Conjunctions indicate time, purpose, condition, Expressions in passive structure, Expressions indicate contrariness, Dictionary usage.

**YPD204 Building Site Organization 2+0 2.0**

The creation of building site; Work programmed; Manufacturing preparation building site; Manufacturing teams and their applications; Excavations works and office works; Preparation of progress payment. applications; Excavations works and office works; Preparation of progress payment.

**YPD205 Application of Building Inspection 2+2 4.0**

Regulation of building inspection; Considerations when examining projects; Application of buildings; Preparation of Concrete: Concrete casting and processing; Sampling; To check compliance with standards; Methodology of permission to use the buildings.

**YPD206 Structures and Earthquake 2+0 3.0**

Earthquake Movement: The behavior of structure element under the influence of earthquakes; Curating wall system design Structures under torsion; Design of masonry structures; Considerations in earthquake resistance structural system.

**YPD207 Introduction to Computer Aided Design 2+1 3.0**

Definition and Aim of AutoCAD 2000: Coordinate System; Command Line; Trim; Erase; Save; Save As; Command Offset; Mirror; Chamfer; Fillet; Move ; Rotate; Scale; Stretch; Lengthen; Extend; Dimension; Polygon; Circle; Rectangle; Ellipse; Point; Hatch; Explode; Inquiry; Option Properties: Make Block; Insert Block; External References; Image ; Format; Jpeg; Bmp; Export; Plot ; Plot Preview.

**YPD208 Building Inspection and Legal Aspects of Reconstruction 2+1 3.0**

Administrative Structure of Turkey: Centralized administration; Decentralized administration; Limitations of Authority in City Planning and the Reconstruction Law: Basic principles of city planning; Allotment and unification; Principles of construction, Provisions of penalty; Regulations based on reconstruction law; Regulations on the elaboration of existing maps; Regulations on elaborating and changing city plans; Regulations on land subdivision; Typical reconstruction regulation of municipalities; Regulation on parking areas; Regulation on reconstruction amnesty.

**YPD209 Traditional Building Materials 3+0 4.0**

Classification of Stone and Terracotta Products Used in Historical Periods; Raw Material Processing and Shaping Techniques; Examination of Traditional Construction Methods and Materials Used in Buildings; Development Processes; Durability Determination Methods; Reinforcement Techniques; Protection Methods. Creating Traditional Building Materials Determination of substances by XRD, XRF, DTA and SAM Analysis.

**YPD213 Laboratory Experiments in Building Inspection I 3+1 4.0**

Requirements for Construction Supervision Law No. 4708 According to TS 1900 Soil Tests; Determination of Water Content; Consistency (Atterberg) Limits; Finding Particle Diameter Distribution; Obtaining Dry Unit Volume Weight-Water Content Relation on Ground with 2.5 Kg Rammer; Obtaining Dry Unit Volume Weight-Water Content Relation on Ground with 4.5 Kg Rammer; Determination of Dry Unit Volume Weight in Ground; Determination of One-Way Consolidation Properties; Determination of Free (Uniaxial) Compressive Strength; Determination of Slip Resistance with a Cutting Box.

**YPD214 Laboratory Experiments in Building Inspection I 3+1 4.0**

Concrete Experiments According to TS 12350-TS 12390 and TS 12504 Required in the Laboratory As Per the Building Inspection Law No. 4708; Sampling in Fresh Concrete; Sample Slump Test in Fresh Concrete; Preparation and Curing of Test Samples to be Used in Strength Tests; Determination of Density of Fresh Concrete; Compressive Strength Determination of Experimental Samples in Hardened Concrete; Core Samples and Core Drilling; Non Destructive Experiments; Determination of Back Bounce Value; Determination of Density of Hardened Concrete.

**YPD215 Converting Buildings to Sustainable Green Buildings 3+0 4.0**

Sustainable Buildings; Climate Change; Global Warming and Increasing Energy Costs; Green Buildings; Benefits of Green Buildings; Green Building Certification Systems; Green Building Cost; Green Building Applications; Development of Green Building Concepts in Turkey; International Green Building Performance Evaluation Systems; LEED and BREEAM Applications. Building Performance Evaluation System and the Issues Experienced in Turkey.

**YPD216 Alternative Building Materials 3+0 4.0**

Alternative Building Materials in Parallel to the Development of Technology; Carrier Construction Materials that can be Used as an Alternative to Reinforced Concrete and Non-Carrier Protective and Detail Materials; Production Methods of

Materials; Types and Usage Areas; Comparing Advantages and Disadvantages; Determination of Substances Forming Alternative Building Materials by XRD, XRF, DTA and SAM Analysis.

**YPD217 Land Ownership and Real Estate Valuation in Building Inspection 0+0 4.0**

Land Definition in Building Inspection; Ownership; Property Types; Altitude Rights; Personal and Land Alliance Rights; Floor Altitude and Condominium Ownership; Commentary and Hostages; Land Registry and Its Applications; Real Estate Valuation; Valuation Expertise; Moral Principles; Principles that form the Basis of Real Estate Value; Elements of Real Estate Value; Issues to be Considered in Real Estate Valuation; Related Theories and Valuation Methods

**YPD218 Urban Transformation and Urban Planning in Building Inspection 3+0 4.0**

Urban Transformation and Urban Planning Legislation; The Place and Importance of Urban Transformation in Building Inspection; Urban Transformation Applications; Definition of Urbanization; Dynamics and Reasons; Urbanization Theories; Urbanization Models in the World; Present Urban Planning in Turkey in the past; Current Problems of Urbanization and Urban Transformation Process; Interdisciplinary Work in Urban Planning; Importance and Application Examples.

**YPD220 Logic, Science and Ethics in Building Inspection 3+0 4.0**

The Origin of the Word Intermediate (Technician-Technician); Sector Meaning and Types; Expert Opinion; Interim Training and Problems in Building Inspection Sector in Vocational Education; Engineer-Technician Relationship; Philosophy of Knowledge; Logic Conjunctions; Propositions; Inferences (Reasoning); Mind-Logic Matrix; Fuzzy Logic Principles; Development of Scientific Thought; Empiricism; Information and Types; Engineering Ethics and Principles.

**YPD222 Fundamental Disaster Knowledge in Building Inspection 3+0 4.0**

Disaster and Disaster Types; Structures and Disaster; Earthquake; Characteristic Properties of Earthquakes; Fault Systems and Earthquake Activity; Disaster Risk Areas in Turkey; Buffer Zone Formation; Activities Required Before and After the Earthquake; Hydro-Meteorological Disasters; Global Climate Change and Climate Risk Management; Mass Movement; Structures and Earthquake; Technological Disasters; Disaster Management and Public Organizations in Turkey: AFAD.

**YPD298 Internship 0+4 5.0**

Staj Dersi Hakkında Bilgilendirme: Amaç, Yöntem, Süreç; Mesleki Farkındalık: Mesleğin Kapsamı, Araştırmaya Dönük Alanlar, Uygulamaya Dönük Alanlar, Meslek ve İstihdam Edilebilirlik; Meslek ve Kariyer Planlaması, Mesleki Eğitim ve Uzmanlaşma: Uzmanlığın Belgelendirilmesi; Sektörel Uygulama ve İşyeri Tanıtımı: Alanda Faaliyet Gösteren İşyerlerine Yapılan Teknik Geziler ve Uygulama Çalışmaları; Proje Tasarlama: Tespit, Planlama, Analiz, Yöntem ve Donanım Seçimi, Uygulama ve Sonuçlandırma; Rapor Yazma ve Sunma.