

## 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 : Prof. Dr. Hüseyin KOCA  
Deputy Director : Assoc. Prof. Dr. Özlem ONAY  
Deputy Director : Lecturer Serdar TUNALIER  
Secretary of High School : Recai ÇELİK

### STAFF

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## DEPARTMENT OF AUDIO-VISUAL TECHNIQUES AND MEDIA PRODUCTION

### PROGRAM IN PRINTING AND PUBLISHING TECHNOLOGIES

Printing industry is the oldest occupation in the world and this industry developing with information technologies. Nowadays, rapidly changes are advancing qualified labour force in printing industry. The aim of this programme is to train individuals that could accomplish the operations for designing, printing, publishing, and marketing communications of these products so as to work in printing - publishing organizations. Evening education is also available.

### PROGRAM

I. SEMESTER			II. SEMESTER		
İNG 103	English I	4+0 3,0	BİL 150	Fundamentals of Information Technology	4+0 5,0
İŞL 101	Introduction to Business	3+0 4,5	İNG 104	English II	4+0 3,0
MAT 169	Mathematics I	3+0 3,0	MAT 170	Mathematics II	3+0 3,0
MLZ 107	Printing Equipment Technology	2+2 5,0	MTB 110	Techniques of General Printing	2+4 5,5
MTB 103	General Typesetting Systems Technology	3+0 5,0	MTB 112	Reproduction Technology	3+0 5,0
MTB 105	Basics of Light and Color	2+0 3,5	RAY 116	Scientific Principles of Technology II	2+0 2,0

RAY 115	Scientific Principles of Technology I	2+0	2,0	TRS 102	Technical Drawing	2+2	4,5
TÜR 151	Turkish Language I	2+0	2,0	TÜR 152	Turkish Language II	2+0	2,0
	<i>Elective Courses (1)</i>	-	2,0				
			<u>30,0</u>				<u>30,0</u>

### III. SEMESTER

GRA 207	Graphic Design	3+0	3,0
GRA 209	Packaging Technology and Design	2+2	4,0
MTB 215	Offset Printing I	2+2	4,0
MTB 217	Printing Techniques I	3+2	5,0
MTB 255	Cost Accounting in Printing Industry	2+2	3,0
TAR 165	Atatürk's Principles and History of Turkish Revolution I	0+0	2,0
	<i>Departmental Elective Courses (2)</i>	-	6,0
	<i>Elective Courses (1)</i>	-	3,0
			<u>30,0</u>

### IV. SEMESTER

BİL 236	Computerized Graphic Design	2+0	3,0
MTB 204	Quality Control	2+0	3,0
MTB 214	Binding Technology and Design	2+2	4,0
MTB 216	Offset Printing II	2+2	4,0
MTB 218	Printing Techniques II	3+2	5,0
MTB 220 (Eng)	Technical English	3+0	3,0
TAR 166	Atatürk's Principles and History of Turkish Revolution II	0+0	2,0
	<i>Departmental Elective Courses (2)</i>	-	6,0
			<u>30,0</u>

### DEPARTMENTAL ELECTIVE COURSES

MTB 219	Total Quality Management in Printing Industry	2+2	3,0
MTB 221	Desktop Publishing	2+2	3,0
MTB 223	Marketing and Advertising	2+2	3,0
MTB 225	Production Planning and Management in Printing Establishments	2+2	3,0
MTB 227	Photography Techniques in Printing Industry	2+2	3,0
MTB 251	Press Business Administration	2+2	3,0

MTB 253	Web Publishing	2+2	3,0
MTB 257	Printing Services	2+2	3,0

### ELECTIVE COURSES

BEÖ 155	Physical Education	2+0	2,0
KÜL 199	Cultural Activities	0+2	2,0
SAN 155	Hall Dances	0+2	2,0
THU 203	Community Services	0+2	3,0

## 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

BTP 101	Algorithms and Introduction to Programming	3+1	5,0
BTP 103	Integrated Office	3+1	5,0
ELO 109	Basic Electronics	3+1	5,0
İNG 103	English I	4+0	3,0
MAT 121	Mathematics I	3+1	4,0
TAR 165	Atatürk's Principles and History of Turkish Revolution I	0+0	2,0
TEK 107	Scientific Principles of Technology	3+1	4,0
TÜR 151	Turkish Language I	2+0	2,0
			<u>30,0</u>

#### II. SEMESTER

BTP 102	Database and Management Systems I	3+1	4,0
BTP 104	Data Structures and Programming	3+1	4,0
BTP 106	Computer Hardware	2+2	5,0
GRA 110	Graphic and Animation	3+1	4,0
İNG 104	English II	4+0	3,0
MAT 122	Mathematics II	3+1	4,0
TAR 166	Atatürk's Principles and History of Turkish Revolution II	0+0	2,0
TÜR 152	Turkish Language II	2+0	2,0
	<i>Elective Courses (1)</i>	-	2,0
			<u>30,0</u>

<b>III. SEMESTER</b>			
BTP 201	Operating Systems	3+1	4,0
BTP 203	Database and Operation Systems II	3+1	4,0
BTP 205	Visual Programming I	3+1	4,0
BTP 207	Internet Programming I	3+1	4,0
BTP 209	Computer Network Systems	1+1	2,0
BTP 211	Technical English I	1+1	2,0
İLT 105	General and Technical Communication	2+0	2,0
	<i>Departmental Elective Courses (2)</i>	-	8,0
			30,0

<b>IV. SEMESTER</b>			
BTP 202	System Analysis and Design	2+2	4,0
BTP 204	Microcomputer Systems and Assembler	3+1	4,0
BTP 206	Visual Programming II	3+1	4,0
BTP 208	Internet Programming II	3+1	4,0
BTP 212	Technical English II	1+1	2,0
İŞL 209	Business Management	2+0	2,0
KGS 104	Quality Assurance and Standards	2+0	2,0
	<i>Departmental Elective Courses (1)</i>	-	4,0
	<i>Elective Courses (1)</i>	-	4,0
			30,0

#### **DEPARTMENTAL ELECTIVE COURSES**

BTP 210	Control by Computer	3+1	4,0
BTP 213	Delphi Programming I	3+1	4,0
BTP 214	Delphi Programming II	3+1	4,0
BTP 215	C Programming I	3+1	4,0
BTP 216	C Programming II	3+1	4,0
BTP 217	Visual Basic Programming I	3+1	4,0
BTP 218	Visual Basic Programming II	3+1	4,0
BTP 219	Computer Aided Design and Modeling	3+1	4,0
BTP 220	Research Techniques and Seminar	1+1	2,0
BTP 221	Project	0+4	2,0
BTP 242	Statistics Practices at Computer	3+1	4,0

BTP 244	Electronic Commerce and Marketing Techniques on the Internet	3+1	4,0
İŞL 421	Entrepreneurship	2+0	3,0
MUH 233	Accounting Techniques and Commercial Software I	1+1	2,0
MUH 234	Accounting Techniques and Commercial Software II	1+1	2,0

#### **ELECTIVE COURSES**

BEÖ 155	Physical Education	2+0	2,0
KÜL 199	Cultural Activities	0+2	2,0
SAN 155	Hall Dances	0+2	2,0
THU 205	Community Services	0+2	4,0

## **DEPARTMENT OF DESING**

### **GRAPHIC DESING PROGRAM**

#### **PROGRAM**

<b>I. SEMESTER</b>			
GTS 101	Written and Oral Communication	2+0	3,0
GTS 103	Basic Advertising Information	3+0	3,0
İNG 103	English I	4+0	3,0
İŞL 101	Introduction to Business	3+0	4,5
MAT 125	General Mathematics	3+1	4,0
MTB 105	Basics of Light and Color	2+0	3,5
PZL 103	Introduction to Marketing	3+0	3,0
SAN 119	Fundamental Art Education	2+0	2,0
TÜR 151	Turkish Language I	2+0	2,0
	<i>Elective Courses (1)</i>	-	2,0
			30,0

<b>II. SEMESTER</b>			
BİL 150	Fundamentals of Information Technology	4+0	5,0
GTS 102	Advertising and Consumption	2+0	2,0
GTS 104	Design Applications	2+2	3,0
GTS 106	Technologic Developments in Advertising Field	2+0	2,0
İNG 104	English II	4+0	3,0
PZL 106	Marketing Communication	2+0	2,0
PZL 108	Consumer Behaviour	2+1	2,5
TEK 107	Scientific Principles of Technology	3+1	4,0
TRS 102	Technical Drawing	2+2	4,5
TÜR 152	Turkish Language II	2+0	2,0
			30,0

<b>III. SEMESTER</b>			
BİL 236	Computerized Graphic Design	2+0	3,0
FOT 211	Advertising Photography	2+1	3,0
GTS 201	Visual Communication Design	2+2	5,0

<b>IV. SEMESTER</b>			
GTS 202	International Advertising	2+0	3,0
GTS 204	Advertising Campaign Design and Applications	2+2	5,0

GTS 203	Advertisement Writing	2+1	3,5
GTS 205	Printing Techniques	3+0	3,5
PZL 237	Brand and Brand Strategy	2+1	4,0
TAR 165	Atatürk's Principles and History of Turkish Revolution I	0+0	2,0
	<i>Departmental Elective Courses (1)</i>	-	3,0
	<i>Elective Courses (1)</i>	-	3,0
			<hr/> 30,0

GTS 206	Television and Advertising	2+2	3,0
GTS 208	Technical English	3+0	3,0
GTS 210	Project	0+2	3,0
GTS 212	Desktop Publishing	2+2	3,0
HUK 240	Advertising Law	2+0	2,0
TAR 166	Atatürk's Principles and History of Turkish Revolution II	0+0	2,0
	<i>Departmental Elective Courses (2)</i>	-	6,0
			<hr/> 30,0

#### DEPARTMENTAL ELECTIVE COURSES

GTS 207	Internet Advertising	3+1	3,0
GTS 209	Positioning Strategies in Advertising	3+1	3,0
GTS 214	Organization and Management in Advertising Agencies	3+1	3,0
GTS 216	Semiotics	3+1	3,0
İSN 102	Public Relations	3+0	3,0

#### ELECTIVE COURSES

BEÖ 155	Physical Education	2+0	2,0
KÜL 199	Cultural Activities	0+2	2,0
SAN 155	Hall Dances	0+2	2,0
THU 203	Community Services	0+2	3,0

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

#### PROGRAM

##### I. SEMESTER

BİL 137	Computer I	2+0	2,5
ELE 103	Electrical and Electrical Measurements	3+1	5,0
ELE 105	Direct Current Circuit Analysis	3+1	5,5
ELO 104	Analog Electronics	3+1	4,0
İNG 103 (Eng)	English I	4+0	3,0
MAT 121	Mathematics I	3+1	4,0
TAR 165	Atatürk's Principles and History of Turkish Revolution I	0+0	2,0
TÜR 151	Turkish Language I	2+0	2,0
	<i>Elective Courses (1)</i>	-	2,0
			<hr/> 30,0

##### II. SEMESTER

BİL 140	Computer Aided Design I	2+0	2,0
EEÜ 102	Traditional Sources of Energy	2+0	2,0
EEÜ 104	High Voltage Technics	1+1	2,0
ELE 104	Alternative Current Circuit Analysis	3+1	5,0
ELO 103	Digital Electronics	3+1	4,0
İNG 104 (Eng)	English II	4+0	3,0
MAT 122	Mathematics II	3+1	4,0
TAR 166	Atatürk's Principles and History of Turkish Revolution II	0+0	2,0
TEK 107	Scientific Principles of Technology	3+1	4,0
TÜR 152	Turkish Language II	2+0	2,0
			<hr/> 30,0

##### III. SEMESTER

EEÜ 201	Electrical Energy Generation	2+1	4,0
EEÜ 203	Electrical Energy Transmission and Distribution	2+1	3,0
EEÜ 205	Energy and Environment	2+0	2,0
ELE 106	Electric Systems (Networks) and Foundations	1+1	2,0
ELE 212	Electricity Installation Plans	3+1	5,0
ELE 225	Electrical Machines	3+1	4,0
ELO 205	Power Electronics	3+1	5,0
ELO 211	Microprocessors / Microcontrollers	3+1	5,0
			<hr/> 30,0

##### IV. SEMESTER

EEÜ 202	Electricity and Energy Project	2+2	4,0
EEÜ 204	Energy Analysis and Savings	2+0	2,0
EEÜ 206	Renewable Sources of Energy	2+0	2,0
EEÜ 208	Energy Management and Policies	2+0	2,0
EEÜ 210	Contract, Exploration and Planning	2+1	3,0
EEÜ 212	Occupational Safety	2+0	2,0
ELE 207	Electrical Maintenance and Troubleshooting	1+1	3,0
ELE 215	Electromechanical Control Systems	3+1	4,0
ELE 222	Related Electrical Service and Systems	1+1	2,0
	<i>Departmental Elective Courses (1)</i>	-	3,0
	<i>Elective Courses (1)</i>	-	3,0
			<hr/> 30,0

**DEPARTMENTAL ELECTIVE COURSES**

EEÜ 214	Hydrogen Energy and Usage	2+1	3,0
EEÜ 216	Solar Energy Systems	2+1	3,0
EEÜ 218	Production of Electricity with Wind	2+1	3,0
EEÜ 220	Hydroenergy	2+1	3,0
EEÜ 222	Thermal Power Plant	2+1	3,0
EEÜ 224	Geothermal Energy	2+1	3,0
EEÜ 226	Energy Plant Management	2+1	3,0

EEÜ 228	Technical English	2+1	3,0
EEÜ 230	Fuels and Combustion Technology	2+1	3,0

**ELECTIVE COURSES**

BEÖ 155	Physical Education	2+0	2,0
KÜL 199	Cultural Activities	0+2	2,0
SAN 155	Hall Dances	0+2	2,0
THU 203	Community Services	0+2	3,0

**DEPARTMENT OF ELECTRONICS AND AUTOMATION****PROGRAM IN MECHATRONICH****PROGRAM****I. SEMESTER**

BİL 137	Computer I	2+0	2,5
İNG 103 (Eng)	English I	4+0	3,0
MAK 117	Manufacturing Process I	3+1	4,0
MAT 121	Mathematics I	3+1	4,0
MTR 101	Circuit Analysis	3+0	3,5
MTR 103	Introduction to Mechatronics	3+0	3,0
TAR 165	Atatürk's Principles and History of Turkish Revolution I	0+0	2,0
TEK 107	Scientific Principles of Technology	3+1	4,0
TÜR 151	Turkish Language I	2+0	2,0
	<i>Elective Courses (1)</i>	-	2,0
			30,0

**II. SEMESTER**

BİL 140	Computer Aided Design I	2+0	2,0
ELO 110	Digital Electronics	3+0	3,0
ELO 112	Analog Electronics	3+0	3,0
İNG 104 (Eng)	English II	4+0	3,0
MAK 128	Materials Technology I	3+0	3,0
MAT 122	Mathematics II	3+1	4,0
MEK 108	Mechanics	2+0	2,0
MTR 102	Measurement Techniques	1+1	2,0
TAR 166	Atatürk's Principles and History of Turkish Revolution II	0+0	2,0
TRS 104	Technical Drawing	2+2	4,0
TÜR 152	Turkish Language II	2+0	2,0
			30,0

**III. SEMESTER**

BİL 287	Computer Aided Design II	2+0	2,0
MAK 227	Materials Technology II	3+1	4,0
MAK 229	Mechanical Science and Elements	3+1	5,0
MAK 240	Hydraulic and Pneumatic Systems	3+1	4,0
MİK 201	Microprocessors/Microcontrollers	1+1	2,0
MTR 201	Programmable Logic Controllers (PLC)	1+1	2,0
MTR 203	Mechatronic System Components	2+0	2,0
MTR 205	Process Control I	1+1	2,0
MTR 207	Sensors and Transducers	1+1	2,0
TER 201	Thermodynamics	2+0	2,0
	<i>Elective Courses (1)</i>	-	3,0
			30,0

**IV. SEMESTER**

ELE 228	Electrical Machines and Drivers	3+1	4,0
ENO 204	Data Addition and Control with Computers	3+1	5,0
İŞL 209	Business Management	2+0	2,0
KGS 104	Quality Assurance and Standards	2+0	2,0
MTR 202	Process Instrumentation and Control	1+1	2,0
MTR 204	Electro hydraulics/Electro pneumatics	2+1	3,0
MTR 206	Process Control II	1+1	2,0
MTR 208	Mechatronic System Design	1+1	2,0
MTR 210	Technical English	2+0	2,0
	<i>Departmental Elective Courses (2)</i>	-	6,0
			30,0

**DEPARTMENTAL ELECTIVE COURSES**

ELO 214	Automatic Control	3+1	4,0
ENO 208	Robot Technology	3+1	4,0
ENO 209	Control with Computer	3+1	4,0
ENO 210	Microcontroller Based Control	3+1	4,0
İŞL 421	Entrepreneurship	2+0	3,0

MAK 252	Energy Management	1+1	2,0
MTR 212	Process Measurements	3+1	3,0
MTR 214	Applications of Mechatronic in Industry	1+1	2,0
MTR 216	Fuzzy Logic	2+0	2,0
MTR 218	Fuzzy Logic	3+1	4,0

**ELECTIVE COURSES**

BEÖ 155	Physical Education	2+0	2,0	SAN 155	Hall Dances	0+2	2,0
KÜL 199	Cultural Activities	0+2	2,0	THU 203	Community Services	0+2	3,0

**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. Evening Education is also available.

**PROGRAM**

<b>I. SEMESTER</b>				<b>II. SEMESTER</b>			
ELO 101	Electronics I	3+0	4,5	BİL 150	Fundamentals of Information Technology	4+0	5,0
İNG 103	English I	4+0	3,0	ELO 102	Electronics II	3+0	4,5
MAT 169	Mathematics I	3+0	3,0	İNG 104	English II	4+0	3,0
RTV 101	Video Technique I	2+0	3,5	MAT 170	Mathematics II	3+0	3,0
RTV 103	Technique of Radio Broadcast Systems	2+0	4,0	RTV 102	Video Technique II	2+0	3,0
RTV 105	Audio Circuits	3+0	4,0	RTV 104	Logic Circuits	3+0	3,5
RTV 107	Audio Technique I	3+0	4,0	RTV 106	Video Circuits	2+0	2,0
TÜR 151	Turkish Language I	2+0	2,0	RTV 108	Audio Technique II	3+0	4,0
	<i>Elective Courses (1)</i>	-	2,0	TÜR 152	Turkish Language II	2+0	2,0
			<u>30,0</u>				<u>30,0</u>
<b>III. SEMESTER</b>				<b>IV. SEMESTER</b>			
BİL 251	Computer Usage I	2+2	3,0	RTV 202	Techniques of Video Recording and Editing Systems II	3+0	3,0
RTV 110	New Communication Technologies	2+0	2,5	RTV 204	Advanced Logic and Microprocessors II	2+0	3,0
RTV 201	Technologies of Video Recording and Editing Systems I	3+0	3,0	RTV 206	Camera and Light	2+0	2,0
RTV 203	Advanced Logic and Microprocessors I	2+0	3,0	RTV 210	Digital Audio Recording Techniques II	2+0	2,0
RTV 205	Management and Organization in R-TV	2+0	2,5	RTV 216	Systems of Studio and Electronic Video Effect II	3+0	3,0
RTV 209	Digital Audio Recording Techniques I	2+0	2,0	RTV 218	Technique of TV Broadcast Systems	3+0	3,0
RTV 215	Systems of Studio and Electronic Video Effect I	3+0	3,0	RTV 222 (Eng)	Technical English	3+0	3,0
TAR 165	Atatürk's Principles and History of Turkish Revolution I	0+0	2,0	TAR 166	Atatürk's Principles and History of Turkish Revolution II	0+0	2,0
	<i>Departmental Elective Courses (3)</i>	-	9,0		<i>Departmental Elective Courses (2)</i>	-	6,0
			<u>30,0</u>		<i>Elective Courses (1)</i>	-	3,0
							<u>30,0</u>
<b>DEPARTMENTAL ELECTIVE COURSE</b>				MÜZ 151	Short History of Music	2+0	3,0
MÜZ 151	Short History of Music	2+0	3,0	RTV 217	Creation, Production and Broadcast Process of TV Program	2+0	3,0
TİY 308	Republic Era Turkish Theatre	2+0	3,0	RTV 223	Digital Radio And TV Broadcasting Systems	2+0	3,0
<b>DEPARTMENTAL ELECTIVE COURSES</b>							
İŞL 421	Entrepreneurship	2+0	3,0				

RTV 225	TV Programme Production Techniques	2+0	3,0
RTV 226	Broadcasting Technologies in Information Age	2+0	3,0
RTV 227	Nonlinear Publishing	2+0	3,0
RTV 228	General Communication	2+0	3,0
RTV 230	Interactive Television	2+0	3,0
RTV 232	The Basic Techniques of Diction, Announcing and Sound Recording	2+1	3,0
RTV 234	Working Life in Media	2+1	3,0
RTV 251	Picture Selection	2+0	3,0
RTV 252	Information Resources	2+0	3,0
RTV 253	Audio Recording and Editing	2+0	3,0

RTV 254	Radio Programming and Broadcasting	2+0	3,0
RTV 255	Studio Techniques	2+0	3,0
RTV 256	Radio Programmes Project Application	0+2	3,0
RTV 257	VTR Recording and Editing	2+0	3,0
TİY 308	Republic Era Turkish Theatre	2+0	3,0

### ELECTIVE COURSES

BEÖ 155	Physical Education	2+0	2,0
KÜL 199	Cultural Activities	0+2	2,0
SAN 155	Hall Dances	0+2	2,0
THU 203	Community Services	0+2	3,0

## PROGRAM IN MECHANICAL DRAWING AND CONSTRUCTION

### PROGRAM

#### I. SEMESTER

BİL 137	Computer I	2+0	2,5
İNG 103 (Eng)	English I	4+0	3,0
MAK 115	Mechanical Drawing I	3+1	4,0
MAK 117	Manufacturing Process I	3+1	4,0
MAK 119	Mechanical Technology I	1+1	2,5
MAT 121	Mathematics I	3+1	4,0
TAR 165	Atatürk's Principles and History of Turkish Revolution I	0+0	2,0
TEK 107	Scientific Principles of Technology	3+1	4,0
TÜR 151	Turkish Language I	2+0	2,0
	<i>Elective Courses (1)</i>	-	2,0
			<hr/> 30,0

#### II. SEMESTER

BİL 138	Computer II	2+0	2,5
İNG 104 (Eng)	English II	4+0	3,0
MAK 116	Mechanical Drawing II	1+1	3,0
MAK 118	Manufacturing Process II	3+1	4,0
MAK 120	Mechanical Technology II	1+1	2,5
MAK 124	Engineering Science I	3+0	4,0
MAK 128	Materials Technology I	3+0	3,0
MAT 122	Mathematics II	3+1	4,0
TAR 166	Atatürk's Principles and History of Turkish Revolution II	0+0	2,0
TÜR 152	Turkish Language II	2+0	2,0
			<hr/> 30,0

#### III. SEMESTER

İLT 105	General and Technical Communication	2+0	2,0
MAK 221	Computer Aided Design I	3+1	5,0
MAK 225	Engineering Science II	3+1	4,0
MAK 227	Materials Technology II	3+1	4,0
MAK 229	Mechanical Science and Elements	3+1	5,0
MEK 209	Mechanics of Materials (Dynamics)	3+0	3,0
MRK 203	Construction I	2+2	4,0
	<i>Departmental Elective Courses (1)</i>	-	3,0
			<hr/> 30,0

#### IV. SEMESTER

KGS 104	Quality Assurance and Standards	2+0	2,0
KLP 201	Mould Design	2+2	3,0
MAK 222	Computer Aided Design II	1+1	3,0
MAK 236	Computer Aided Manufacturing	3+1	4,0
MAK 240	Hydraulic and Pneumatic Systems	3+1	4,0
MAK 242	Administrating Management and Manufacturing Control	1+1	3,0
MRK 204	Construction II	2+2	3,0
MRK 216	Measurements Techniques	2+0	2,0
MRK 218	Basic Principles of the Machine Construction	3+0	3,0
	<i>Elective Courses (1)</i>	-	3,0
			<hr/> 30,0

### DEPARTMENTAL ELECTIVE COURSES

ELE 102	Basics of Electricity	2+2	3,0
MAK 238	System Analysis and Design	2+2	3,0
MRK 201	Advanced Computer Applications	2+2	3,0
MRK 213	Technical English	3+0	3,0

### ELECTIVE COURSES

BEÖ 155	Physical Education	2+0	2,0
KÜL 199	Cultural Activities	0+2	2,0
SAN 155	Hall Dances	0+2	2,0
THU 203	Community Services	0+2	3,0

## COURSE CONTENTS

### **BEÖ 155 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.

### **BİL 137 Computer I 2+0 2,5**

Windows Operating System: Introduction and using of desktop and objects, Options of Start Menu; Microsoft Office Suite: Opening file, preparation, arranging, preparation of top and bottom information with MS Word, Cell, line, column, page layout, cell forming and formula editing with MS Excel, Slide editing and slide shows operations with MS PowerPoint, Using of dairy and calendar options, Mail importing and exporting with MS Outlook, Explorer objects and searching the web with Internet Explorer.

### **BİL 138 Computer II 2+0 2,5**

Basic Concepts of Internet: Servers, Clients, TCP-IP Protocol, Web based Services, (HTTP; SMTP, DNS, FTP, TELNET, POP3, PROXY); Introduction to Web Design: Installing server side software for development; Developing WEB files, FTP Clients; Presentation Software: Applying Templates for Presentation, Generating Presentations, Presentation Editing; Database Application: Generating Tables, Table design, Form generation and data input, Reports and report generating, Shortcut to tables, Queries.

### **BİL 140 Computer Aided Design I 2+0 2,0**

Introduction to Software Suites: Properties, Menus, Sub menus, Design environment and menus; Circuit Diagram Design and Drawing; Forming Components of a Circuit Diagram, Connections, Blocking and Regulation of Properties; Circuit Analysis and Test Operations: Test equipments, Test operations with simulations; Printing from Plotters and Printers: Printer adjustment, Drawing area; Determining printing properties.

### **BİL 150 Fundamentals of Information Technology 4+0 5,0**

Introduction to Computer: History of Computer; Operating Systems: Introduction to operating systems; Office Software-Word Processors and Document Systems: General Characteristics of the Office Software; Office-Software-Spreadsheets Programs: Spreadsheets Programs; Office Software-Presentation Programs: Presentation Programs; E Mail-Personal Communication Management: General Characteristics of the E Mailing System; Effective use of the Internet and Internet Security; Network Technologies. Computer Hardware and Error Detection: Types of Computers; Social Networks and Social Media: Social Media and Introduction to Social Media; Special Application Software: Multimedia; Law and Ethics of Informatics: Intellectual Property and Informatics Law; E-Learning: Developments in E-Learning; E-Government Applications; Computer and Network Security; Latest Strategic

Technologies of Informatics: Factors Affecting Technological Developments.

### **BİL 236 Computerized Graphic Design 2+0 3,0**

Technological Advances in Graphics Design; Image Editor Photoshop: Purpose, Application, Anti-aliasing, Resolution; Tool Boxes: Pick up tools, Crop type, Paint bucket, Gradient, Eyedropper, Airbrush, Line tools, Rubber stamps, Smudge, Blur, Dodge; Select Menu: Inverse, Feather, Modify, Image, Edit, Mode, Filter; File Menu; Format Menu; Shift, Delete, Option, Command; Layers; Colour Palette; Blend if; Editing Single and Multiple Images; Photoshop File Formats: EPS, TIFF, JPEG, Applications.

### **BİL 251 Computer Usage I 2+2 3,0**

Computer and Keyboard; Computer Hardware and Software; Internet; MS Office Suite 97: Word and applications, Excel and applications, PowerPoint and applications; Passive Circuit Elements; Source Definitions; Defining Analysis Type; Defining Output Variables; Circuit Analysis

### **BİL 287 Computer Aided Design II 2+0 2,0**

Using and Beginning Arrangements; Minimum requirement concept of hardware for software, Installation of software, Operating; Basic Drawing Elements: Basic drawing commands (Circle, Arc, Line?) functions, Forming object and object groups; Correction and Interrogation Operations: Correction and interrogation command functions, Correction and arrangement on object; Spectre Control Operations: Basic spectre command function; Blocking Operations and layers; Measuring and Scanning Process; Operations of Printer and Plotter.

### **BTP 101 Algorithms and Introduction to Programming 3+1 5,0**

Principles of Problem Solving; Phases of Problem Solving; Algorithm and Flow Charts: Description of a problem, Recognizing critical points, Pieces into parts to problem, Converting algorithm into flow charts, Testing, Finding mistakes; Using Of Programming Media and Principles of Code Writing; Using Programming Language Media: Variables, Controlling terms and circles, Describing necessary variables, Writing program code, Running of program and testing, Producing alternative solving for program.

### **BTP 102 Database and Management Systems I 3+1 4,0**

Database, Data Base Management Systems; Basic Concepts and Definitions; Database Architecture: External, Conceptual and Internal levels; Schemas; Data Independence; Data Models: Entity-relationship model, Hierarchical model, Network model and relational model; Dependencies Between Attributes; Normal Forms.

### **BTP 103 Integrated Office 3+1 5,0**

Using for Various Aims in the Office Environment of Computer Technology; Using of Word Processing



Programme; Presenting and Preparing Presentation by Computer Technology; Using of a Presentation Programme; To be able to Create of Working Sheet; Understanding Facilities Provided by Working Environment, Preparing Graphic in Working Sheet; Understanding Importance of Advantages of Using Database Programme.

**BTP 104 Data Structures and Programming 3+1 4,0**

Definition of Data; Main Data Types and Data Structures; Connected Lists, Stocks; Conjunctions Nets; Algorithm Difficulty; Basic Algorithms; Memory Usage Registration Concept; Physical and Logical Organization of Registrations; File Usage and Management: Randomised and Directly connected files; Registering and Database; Programming; Controlling of Computer Ports by Programming.

**BTP 106 Computer Hardware 2+2 5,0**

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 Big-Medium-Small Computer Equipment.

**BTP 201 Operating Systems 3+1 4,0**

File and Directory Processes: File access, Definition of files and groups; Administration Systems: Administrator information, Comprehension of system principles, Creating user account, Inserting and terminating user group; Internet Tools: Mail, FTP, Telnet etc. software usage; Installation and Settings: System installation and application, Implementation of required system settings.

**BTP 202 System Analysis and Design 2+2 4,0**

System Function and Components; Definition of the Problem and Solution Principles; System Creation Life Cycle; Analysis Tools and Techniques; Data Flow Charts or Modelling of New Information System; Data definition and Information Requirement at Data Dictionary; System Design and Application; Computer Inputs, Outputs, Controls; Design of Files; Information System Development Steps and System Analysis; Administration Function; Data and Information Concepts; System Analysis Tools; Classification of Information Tools; Computer Aided Software Engineering Tools.

**BTP 203 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.

**BTP 204 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.

**BTP 205 Visual Programming I 3+1 4,0**

Definition of Variables and Functions as Objects, Characteristics of Objects and to Change These Characteristics; Programming Techniques; Using Objects in Programming; Changing the Characteristics of Objects by Using Functions in Programming; Preparing more Useful Interfaces to Users by Using Objects in Programming; Differences between Classical Programming and Object Oriented Programming.

**BTP 206 Visual Programming II 3+1 4,0**

Principles of Object Oriented Programming: Fundamentals of language; Language Environment; Visual Programming; Structure of Program; Elements of Language; Simple Types; Sliding Point Data Structures; Indicators, Input/Output Registering; Visual Database Tools; Charts; Data Units; SQL; Objected Oriented Programming: Components, Objects, Developed programming commands.

**BTP 207 Internet Programming I 3+1 4,0**

Fundamental Internet Concept: Server client logic, TCP-IP protocol, HTTP, SMTP, DNS, FTP, TELNET, POP3, PROXY concepts; Introduction to WEB Design: Creating Web Files, Usage of FTP software; HTML: HTML commands; Script Usage: Script usage; Design Project; HTML Editors.

**BTP 208 Internet Programming II 3+1 4,0**

Designing Dynamic Page to Prepare Web Site; Installing and Adjusting the Programmes Necessary for the Source Computer; Using HTML Form Tags and HTML Scripts for the Dynamic Pages; Using CGI Language; To be able to Connect to a Database Using CGI Language: Definitions of variable; The usage of the variables; Data Types and Operators; Controlling Terms, Loop Statements, Functions; File Operations.

**BTP 209 Computer Network Systems 1+1 2,0**

Introduction to Computer Networks: LAN, MAN, WAN concepts; Computer Network Cables: Cable types, Proper cable selection; Network Hardware Units: Repeater, Bridge types, Ethernet keys, Routers, Router Connection; Network Protocols: History, FTP protocols, TELNET, SMTP, DNS knowledge and usage, Electronic mail usage and knowledge.

**BTP 210 Control by Computer 3+1 4,0**

Basic Properties and Structure of Industrial Computers; Knowing and Inserting and Running the Cards Used in Industrial Computers; Measuring and Controlling Operations by Using Industrial Computers; Network and its Basic Properties Used in Automation Systems; The Network Organization for Measuring and Controlling Systems; Industrial Communication; Communication Controlling

Based PC; Controlling Modules and Remote Data Measurement; Dispersed Data Measurement and Controlling System.

**BTP 211 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.

**BTP 212 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/Unlike/ 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.

**BTP 213 Delphi Programming I 3+1 4,0**

Installing Programming Language (Delphi); Compounds of the Programming Language Properties and the Parts of Screen such as Tool Bars; to be able Use the Basic Components; to be able to Arrange the Components Visually; Using the Properties of the Components; Variables on Programme Writing Controlling Terms and Using Loops; Comprehending and Using the Terms and Definitions Related to Class and Object Concept.

**BTP 214 Delphi Programming II 3+1 4,0**

Creating and Developing New Components; Forming the Components as Dynamic; The Usage of the Components as Dynamic; Applications; Graphic Operations; Toolbars; Various Data Base Applications: Input data, Questioning and reporting, Planning and writing a practical data base; Making the Software Movable, Installing the Software on the Other Computers; Using SQL; Accessing to Various Data Base; Internet Software: Using Active X, Creating HTML files, Message on internet, E-mail, File operations.

**BTP 215 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(), Putchar(), 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.

**BTP 216 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.

**BTP 217 Visual Basic Programming I 3+1 4,0**

Comprehending the Structure of Visual Basic Programming; To be able to Understand Operators and Data Types on Visual Basic; To be able to Know Controlling Objects; To be able to Comprehend the Properties and the Methods of Controlling Objects; To be able to Understand Controlling and Loop Statements and Providing Programme Flow by the Desired Way; Comprehending the Logic of the Arrays and Applying Into the Programme; Using the Sub-Programme; Using the File.

**BTP 218 Visual Basic Programming II 3+1 4,0**

Object Oriented Programming Logic: Class structure, Encapsulation concept, Inheritance concept, Polymorphism concept; Active X Concept: The components and the controls of Active X, Forming and using Active X DLL and Active X EXE; Database Concept: Database models, Active X data object (ADO) technology, SQL statements; Creating and Controlling Database Using Visual Basic; The Properties and the Controls of Web Browser; Concepts about Data Structure.

**BTP 219 Computer Aided Design and Modeling 3+1 4,0**

Installing Designing Software and Modelling Software; Tool Bars and Drawing Elements; Drawing 2D and 3D Elements; Forming Compound and More Complex Figures from 2D and 3D Elements; Making Correction on the Existing Figures; Getting More Affective Images By the Drawings Which Was Done Into the Motion and Turn The Drawings Into the Animation; Using AUTOCAD Programme and Applications.

**BTP 220 Research Techniques and Seminar 1+1 2,0**

Collecting and Analysing Data in Terms of Scientific Research; Research; Reporting the Results of the Research according to the Principles of Report Writing; Presentation of Research Subjects; The Usage of the Equipment such as Data show and Slide Machine and Internet (WEB pages) etc.; Introducing to Business Life; To be able Follow The Developments by Searching the Innovations in Computer Field; Developing Self-Confidence by Expressing himself/herself in a Society.

**BTP 221 Project 0+4 2,0**

Project: Description and context, Procedures, Development tools and OS, Prototype and deadlines, Analysis, System architecture, Project planning and deadlines, Context, Architecture, Data design, Interface design, Process design,

Planning and scheduling, Debugging, User guides, Testing, Test processes, Project presentation.

**BTP 242 Statistics Practices at Computer** 3+1 4,0  
Basic Concepts; Statistical Series, Central Tendency and Measures of Variables; Continuous Random Variables and The Normal Distribution; Sampling; Statistics Estimation, Hypothesis Testing, Chi-Square Tests, Simple Linear Regression; Correlation; Method of Data Collection: Sample survey method, Experimental method, Method of Observation, Interview, Lining; Statistics Practices of SPSS; Flotation, Preparation Analysis of Data, Analysis of Data and Exposition with SPSS, Draw a table and graph with SPSS; Preparation of Research Report.

**BTP 244 Electronic Commerce and Marketing Techniques on the Internet** 3+1 4,0  
New Economy and Development of e-Commerce: The Emergence of Internet, Businesses and Business Approaches in the New Economy, Development of Marketing in the Electronic Mediums; Virtual Communities and Consumer Needs; Markets on the Internet; Marketing Process on the Internet: Preparation of Marketing Medium, Characteristics of Internet Users, Development of the Marketing Strategy, Development of the Marketing Mix, Virtual Shopping Models, Payment Systems on the Internet, Consumer Protection on the Internet; Internet Advertising: Attributes and Ground Rules of Advertising, Techniques of Advertising.

**EEÜ 102 Traditional Sources of Energy** 2+0 2,0  
Energy, Renewable Energy and Importance; Traditional Sources and Potentials of Energy in the World and in Turkey; Formation, Properties and Preparation of Coals; Usage of Coal and Coal Technologies; Oil Production; Petroleum Refinery Processes; Natural Gas Production; Natural Gas Usage.

**EEÜ 104 High Voltage Technics** 1+1 2,0  
Production of Impact; Measurement and Statistical Evaluation of Potential Impact; Partial Vacancies; Paschen's Law; Characteristics of Electrode Systems Based on Alternative Voltage; Characteristics of Electrode Systems; Corona Losses Measurement; Dimensioning of Transmission Lines and High-Voltage Direct Current; Direct Current Surge Arresters and Cutters; Insulation Coordination in Transmission Lines in Direct Voltage.

**EEÜ 201 Electrical Energy Generation** 2+1 4,0  
Electrical Power and Generators; Thermal and Geothermal Power Plants; Nuclear Power Plants; Hydroelectric Power Plants; Wind Energy for Electrical Energy Production; Electrical Energy Production from Solar Energy Systems; Application of Composite Heat and Power Production, Autoproducer; Hybrid Electric Power Generation Systems.

**EEÜ 202 Electricity and Energy Project** 2+2 4,0  
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.

**EEÜ 203 Electrical Energy Transmission and Distribution** 2+1 3,0  
Current, Voltage and Power in Electrical Energy Systems; Electrical Energy Transmission and Distribution Networks; Substations and Equipment; Overhead Line Conductors and Insulators on Poles and Underground Cables; Electrical Energy Distribution and Transformer Selection; Electrical Energy Transmission and Distribution Protection Systems.

**EEÜ 204 Energy Analysis and Savings** 2+0 2,0  
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.

**EEÜ 205 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.

**EEÜ 206 Renewable Sources of Energy** 2+0 2,0  
Solar Energy; Solar Energy Technologies; Wind Energy; Usable Wind Energy; Geothermal Energy; Geothermal Energy in Turkey and in the World; Bio-Energy; Definition of Biomass and Importance Biomass Energy; Environmental Energy; Environmental Energy Supply: Air, Soil, Water, Building's waste heat; Wave Energy; Wave Energy Converters; Hydrogen Energy; Hydroelectric Energy.

**EEÜ 208 Energy Management and Policies** 2+0 2,0  
Energy Efficiency Related Laws and Regulations; Energy Management Policy; Energy-Intensive Industrial Sectors; Economic Analysis Methods in Energy Efficiency Projects; Energy Investment Models; Energy Demand Forecasting Methods; Comparison of Energy Management Policies in Turkey and in the European Union Countries.

**EEÜ 210 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.

**EEÜ 212 Occupational Safety** 2+0 2,0  
Basics of Safety; Elements Threatening Safety; Biological threats, Chemical threats, Physical threats; Concepts Related to Workplace Safety; Protective Safety Measures; Occupational Diseases; Analysis and Classification of Accidents; Injury, Vital Hazards and First Aid; Accident Reports; Fire; Workplace Safety Legislation.

**EEÜ 214 Hydrogen Energy and Usage** 2+1 3,0  
Fossil Fuels and Their Adverse Effects; Seeking an Alternative to Fossil Fuels and Ideal Energy Variables; The Nature and Features of Hydrogen; Hydrogen Production, Storage and Transport Technologies; Hydrogen Conversion and Application Systems; Hydrogen Energy Problems and Requirements in the Quest for Energy.

**EEÜ 216 Solar Energy Systems** 2+1 3,0  
Solar Energy and Its Formation; Some Basic Calculations Associated with Solar Energy; Solar Energy Technologies; Heat Treatment Technologies; Brooms with Collector Box; Solar Hot Water Systems; Planar Solar Collectors; Collector Energy Balance; Medium and High Temperature Energy Producing Technologies; Turkish Institutions Engaged in Solar Energy Studies.

**EEÜ 218 Production of Electricity with Wind** 2+1 3,0  
Basic Concepts Related to Wind Energy; Wind Formation and Classification; Data and Methods Used to Evaluate Wind Energy; Weibull Distribution; Rayleigh Distribution; WASP (Wind Atlas Analysis and Application Program) Program; Power and Power Density Function; Classification of Wind Turbines; Available Wind Energy.

**EEÜ 220 Hydroenergy** 2+1 3,0  
Hydrodynamic and Hydro-electric Energy; Characteristics of Fluids; Continuity Equation; Bernoulli Equation; Viscosity; Surface Tension in Liquids; Energy of Flowing Fluid; Hydroelectric Power Plants; Classification of Hydroelectric Power Plants; Hydroelectric Turbines Used in Power Plants; Importance of Hydroelectric Energy in Turkey; Hydroelectric Power in the World.

**EEÜ 222 Thermal Power Plant** 2+1 3,0  
Thermal Power Plants; Electricity Generation in Thermal Power Plants; Thermal Power Plants Using Coal; Thermal Power Plants Using Fuel Oil; Thermal Power Plants Using Diesel Fuel; Gas-Powered Thermal Power Plants; Thermal Power Plants in Our Country.

**EEÜ 224 Geothermal Energy** 2+1 3,0  
Concept of Geothermal Energy; Geothermal Energy Sources; Use of Hot Groundwater as a Source of Energy; Use of Geothermal Vapor as a Source of Energy; Use of Geothermal Energy in Heating Energy Systems; Generation of Electricity Using Geothermal Energy.

**EEÜ 226 Energy Plant Management** 2+1 3,0  
Definition of Energy; Types of Energy; Classification of Energy Facilities; Fuel Oil and Gas Production and Distribution Facilities; Hydro-electric Power Plants (HEPP); Gas-Cycle Power Plants; Wind Power Plants; Nuclear Power Plants and Thermal Power Plants; Design of Plants and Characteristics of Equipment Used; Procedures Required to Assure Efficiency in Energy Plants in Accordance with EN-VER (Energy Efficiency Act); Measures Required to Assure Work Safety in Power Plants.

**EEÜ 228 Technical English** 2+1 3,0  
Speaking: Introduction of oneself and others, Subjects related to workplace, Demands in formal settings, Offering help, Apology, Necessity, Obligation, Quantity, Ratio Percentages, Estimating, Instruction; Listening Comprehension: Understanding a speech about professional issues; Writing: Taking notes, Curriculum vitae, Business letters; Reading Comprehension: Conjunctions indicating time, purpose, condition, Expressions in passive structure, Expressions indicating contrariness, Use of dictionaries.

**EEÜ 230 Fuels and Combustion Technology** 2+1 3,0  
Introduction; Basic Concepts Related to Fuels and Combustion Technologies, Classification of Natural Fuels; Secondary Fuels; Chemistry and Technology of Pulverized Coal, Smokeless Fuel, Coke and Metallurgical Coke Production Processes; Liquid and Gas Fuels; Chemistry and Technology of Combustion Processes; Effects of Solid and Liquid Fuels and Reduction of Negative Environmental Impacts; Analysis of Solid, Liquid and Gas Fuels; Quality Control and Digital Applications Related to Combustion

**ELE 102 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.

**ELE 103 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.

**ELE 104 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.

**ELE 105 Direct Current Circuit Analysis 3+1 5,5**

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.

**ELE 106 Electric Systems (Networks) and Foundations 1+1 2,0**

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; Switches and plugs, Light sources, Poor current units.

**ELE 207 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.

**ELE 212 Electricity Installation Plans 3+1 5,0**

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.

**ELE 215 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.

**ELE 222 Related Electrical Service and Systems 1+1 2,0**

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.

**ELE 225 Electrical Machines 3+1 4,0**

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

**ELE 228 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.

**ELO 101 Electronics I 3+0 4,5**

Basic Principles of Electronic; Current and Voltage Principles of Kirchhoff; RL and RC Time Constant; Characteristic of P-n Junction in Smooth and Inverted Feeding Position; Structure and Working Principles of Diode: Zener diode, Diode characteristics, Diode types, Diode applications; Npn and Pnp Junctions; Transistors: Transistors in smooth and inverted feeding position, DC analysis of transistors, AC analysis of transistors, Equivalent circuit model, Transistor applications.

**ELO 102 Electronics II 3+0 4,5**

Structure and Working Principles of FET's; Equivalent Circuits of FET; Circuit Applications; Pnpn Material; Structure and Working Principles of Thyristor; Transmission Transfer Methods of Thyristor; Conducting Methods of Thyristor; Power Control Circuits; Structure and Working Principles of Triac; Structure and Working Principles of Diac; Structure and Working Principles of UJT; Operational Amplifiers: Structure and Working Principles of Opamps; Types of Opamp and Their Applications; Integrated Circuits: Commonly used integrated circuits.

**ELO 103 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.

**ELO 104 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.

**ELO 109 Basic Electronics 3+1 5,0**

Unit Systems: Current, Voltage, Power; Circuit Types and Elements: Basic circuits, Ohm's law, Kirchhoff's laws; Some Techniques Used in Circuit Analysis: Nodal and mesh analysis, Source transformations, Superposition, Thevenin and Norton theorems; Inductance and Capacitance; RL and RC Circuits; RLC Circuits; Semi Conductors and Principles: Diodes, Rectifiers, Cutter circuits; Basic Logic Circuits: Number systems And-Or-Nand etc. logic gates, J-K Flip Flop, R-S Flip Flop, T and D Types Flip Flops, Counters, Registers, Decoder, Encoder.

**ELO 110 Digital Electronics 3+0 3,0**

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; Digital Modulations.

**ELO 112 Analog Electronics 3+0 3,0**

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.

**ELO 205 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.

**ELO 211 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.

**ELO 214 Automatic Control 3+1 4,0**

Principles of Control: Power supply in servo mechanism, Potentiometer and amplifiers, Open circuit and closed circuit controls of D.C machines, Open circuit and closed circuit controls of A.C machines; Torque; Basic Construction of Control Synchronous: Operation and characteristic of synchronous position control system, Operation principles of torque conductor and receiver, Operation principles of differential control transmitter and differential control receiver, Operational amplifiers.

**ENO 204 Data Addition and Control with Computers 3+1 5,0**

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.

**ENO 208 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.

**ENO 209 Control with Computer 3+1 4,0**

Industrial Computers: Technique properties of solid state memory, Transmitter modules, Receiver modules, VGA and TV signal converters, Flat panel / CRT screen modules; Speedy Data Measurement and Control Cards; Signal Processing and Measurement Modules; Industrial Communication; PC Based Communication Control; Distant Data Measurement and Control Modulations; Scattered Data Measurement and Control Systems.

**ENO 210 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.

**FOT 211 Advertising Photography 2+1 3,0**

What is Photograph? Photograph as an Advertisement Organ: Visible and Secondary Meanings, Unity of the Vision and the Text, Effects of the Objects on the meaning that appears in the photograph; Tools in advertising photography and introduction of studio equipment: Para-flashes, light meters, accessories; Studio casting techniques; Qualifications of a good advertisement photograph; Effective advertising photography techniques; Process of advertisement photograph; Photograph taking projects:

Professions, Introduction of city, Portraits, Advertisement photographs.

**GRA 110 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.

**GRA 207 Graphic Design 3+0 3,0**  
Graphic: Definition, Purposes and functions of graphic design, Historical development, Fields of graphic design; Tools and Instruments for Graphic Design; Classical Tools and New Technologies; Graphical Elements: Dot, Line, Works of surface shaping; Image; Types of Image: Illustrative image, General image, Unrelated image, Verbal image; Institutional Identity Card; Business Card; Letterhead Paper; Envelope; Invoice; Illustration Brochure; Advertisement and Ads Graphic: Advertisement on press; TV Advertisements; Poster; Graphic of Press: Newspaper, Design of magazine page, Book cover; Applications; Business Card; Letterhead Paper; Design of Envelope; Image; Tourism Brochures; Advertisement on Press.

**GRA 209 Packaging Technology and Design 2+2 4,0**  
Cardboard: Definition of cardboard, Cardboard production, Cardboard products and their usage, Cardboard types; Cartonnage: Definition of cartonnage and purpose; Design of Cartonnage: Mental activity necessary for design, Construction designation in package production, Construction applications; Blades Used in Cardboard Box Production: Folding blades, Cutting blades, Perforation blades; Machines Used in Cutting Cardboard Boxes Production; Techniques of Sticking Cardboard Boxes; Calculation of Cardboard Boxes Costs.

**GTS 101 Written and Oral Communication 2+0 3,0**  
Description and types of the communication; Principal concepts in communication, Process of the communication; Necessity of the communication for society and individuals, Types of communication, Oral communication; Necessity of oral communication, Principles of oral communication, Utilization of required devices in oral communication techniques, Individual and collective application of oral communication techniques, Effects of oral communication in daily life, Written communication.

**GTS 102 Advertising and Consumption 2+0 2,0**  
Consumption and culture; Consumption society; Theoretical approaches about consumption society; Globalization and consumption; Consumption culture and consumer behaviour relations; Consumption and advertisement relation; Popular culture, Advertisement and consumption relation: Description of popular culture, different approaches to popular culture, alternating consumption habits with popular

culture, Effect of advertisement and popular culture on consumption.

**GTS 103 Basic Advertising Information 3+0 3,0**  
Concept of advertising; Objects of advertisement; Types of advertisement; Advertising process; Development of the advertising; Socio-economic and legal points of advertising; Advertising theories; pre-operations in advertising: Product analysis, Market analysis, Media analysis; Legal organizations about advertising, Advertisement campaign process; Advertisement text writing; Advertisement creation for printed media; Advertisement budget; Measurement of advertisement efficiency; Advertising in Turkey.

**GTS 104 Design Applications 2+2 3,0**  
What is design?; Importance of design; Design process: Determination of the target people, Selection of communication organ, Selection of proper visuals, Draft preparation, Motto selection; Basic level advertisement design applications.

**GTS 106 Technologic Developments in Advertising Field 2+0 2,0**  
Advertisement types: Printed advertisement, T.V. advertisement, Internet advertisement; Development of advertising in the historical process; Technologies in advertising applications: CAD applications; Close circuit T.V. broadcasting, Informative video recordings, Multiple media mediums, 3-D productions, Banner, Pop-up; Qualifications of new technologies in advertising.

**GTS 201 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.

**GTS 202 International Advertising 2+0 3,0**  
What is international advertising?; essential considerations of international advertising; Effective factors of consumer behaviours in international advertising: Culture, Traditions, Time, Policies; Legal accommodations in international advertising; Analysis of applied international advertisements.

**GTS 203 Advertisement Writing 2+1 3,5**  
Copy writing and creativity; What is advertisement text writing?; Structural properties of advertisement text; Elements of advertisement text: Titles, Introduction, Improvement of advertising text, Conclusion, Name of advertisement contributor, Motto, Logo, Address; Fundamental points in advertisement text writing; Technical and semantic analysis of considerable advertisement texts in history; Application studies in advertisement text.

**GTS 204 Advertising Campaign Design and Applications** 2+2 5,0

Advertising Campaign; Definition, Scope and Process, Classified Advertisements, News, Newspapers, Radio & TV, Outdoor Advertising Campaign Applied Advertising Campaign of the Promotion and Investigation; Advertising Campaign Implementation; Campaign Topic, Brief Retrieval and Pre-Assessment; Situation Analysis; Advertising Campaign Strategy, Creative Works (press advertisements, television commercials text-storyboard); Media Planning, Budget Preparation.

**GTS 205 Printing Techniques** 3+0 3,5

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.

**GTS 206 Television and Advertising** 2+2 3,0

Television as an advertising tool, television advertising and Creativity: Creativity in Advertising, Creative Strategy for Television Advertising; Brief; Research: product or service, target consumers, competition analysis, thoughts, Implementation: Making Style, Production Format, Production Techniques; Making TV ads movie, Screenplay, Storyboard, Budget, Pre-Production, Post Production, Presentation, Assessment.

**GTS 207 Internet Advertising** 3+1 3,0

Advertisement Types; Online Advertising Tools; What is Internet Advertising?; Internet Advertising Types: Banner, Pop-up; The Issues to Be Considered for Internet Advertisement Preparation; Internet Advertising Applications.

**GTS 208 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.

**GTS 209 Positioning Strategies in Advertising** 3+1 3,0

Marketing Communications, Integrated Marketing, Positioning; Positioning Strategy Approaches: Product Properties and Consumer Price and Quality, Utilization and Application, Product and user interactions, Product classification, Global Icons, competitors, Advertising Studies, Consumer-Oriented Positioning Strategies, Competition, Competitors definition, Identification, Positioning, Consumer Solving, Control of selected location.

**GTS 210 Project** 0+2 3,0

Preparing an advertisement campaign that will perform all the necessary stages, and presentation of campaign.

**GTS 212 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.

**GTS 214 Organization and Management in Advertising Agencies** 3+1 3,0

Organization and Management Relationship; Necessary Advertising Agency Departments, Customer Relations, Creative, Strategic Planning, Accounting, Publishing, Media Planning, Task Description of the Departments, Personnel Eligibility Determination, Work Flow Process; Office Planning; Organizational Structure.

**GTS 216 Semiotics** 3+1 3,0

Sign and Semiotics; Signs in Communication Process; Meaning and Ideology; Historical Development of Semiotics: Charles Sanders Pierce and semiotics, Ferdinand de Saussure and signifier/signified concepts, Louis Hjelmslev and logical formalization, Roland Barthes and signification; Phases of Semiotical Analysis; Signification: Denotative and connotative meaning; Signifier, Signified, Sign; Relation between Advertisement and Semiotics; Analysis of Advertorial Scripts using A Semiotical Approach.

**HUK 240 Advertising Law** 2+0 2,0

Concept of Law: The Sources and Application of Law; Advertising Laws; Law on Intellectual and Artistic Works; Legal Arrangements about Copyrights; Legal Enforcements and Properties of Advertisement; Misleading and Deceptive Advertising; Unfair Competition; Evaluation of Punished Advertisement Applications.

**İLT 105 General and Technical Communication** 2+0 2,0

Definition and Type of Communication: Communication and it's basic concepts, Types of communication; Oral Communication: Techniques, Principles and necessity of oral communication, It's 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.

**İNG 103 English I** 4+0 3,0

Articles; Prepositions: Place, Time, Movement; Singular and Plural Nouns: Countable and Uncountable nouns; Tenses: Simple present tense, Present continuous tense, Past simple tense, Future tense, Present perfect tense; Modals: Will, Should, Shouldn't Must, Mustn't, Can; Comparisons; Pronouns: Subject, Object, Demonstrative, Possessives; Adjectives; Statements: Positive, Negative, Question; Conjunctions: And, But, When, While, Because.

**İNG 103 English I** 4+0 3,0

Articles; Prepositions: Place, Time, Movement; Singular and Plural Nouns: Countable and Uncountable nouns; Tenses: Simple present tense, Present continuous tense, Past simple



tense, Future tense, Present perfect tense; Modals: Will, Should, Shouldn't Must, Mustn't, Can; Comparisons; Pronouns: Subject, Object, Demonstrative, Possessives; Adjectives; Statements: Positive, Negative, Question; Conjunctions: And, But, When, While, Because.

**İNG 104 English II 4+0 3,0**

Tenses: Present simple, Present continuous, Past simple, Past continuous, Will and going to, Present perfect continuous, Past perfect simple; Modals: Might, Could, Can, Must, May; Adverbs: Adverbs of manner, Purpose, Location; Adjectives: Order of adjectives, Comparative, Superlative forms; Passive Voice: Present, Past, Future, Modal passive; Conditionals; Relative Clauses; Reported Speech; Infinitive and Gerund; Noun Clauses; Adverbial Clauses; Comparison and Contrast.

**İNG 104 English II 4+0 3,0**

Tenses: Present simple, Present continuous, Past simple, Past continuous, Will and going to, Present perfect continuous, Past perfect simple; Modals: Might, Could, Can, Must, May; Adverbs: Adverbs of manner, Purpose, Location; Adjectives: Order of adjectives, Comparative, Superlative forms; Passive Voice: Present, Past, Future, Modal passive; Conditionals; Relative Clauses; Reported Speech; Infinitive and Gerund; Noun Clauses; Adverbial Clauses; Comparison and Contrast.

**İSN 102 Public Relations 3+0 3,0**

Fundamentals of Public Relations; Historical Development of Public Relations in Turkey and in the World; Development of Public Relations in Private and Public Sector; Career Development in Public Relations; Place of Public Relations Department in an Organization; Interdepartmental Public Relations; Research in Public Relations; Planning a Public Relations Campaign; Identifying problems, Determining objectives, Application and evaluation; Materials Used in Public Relations: Written, Audio-visual and other materials.

**İŞL 101 Introduction to Business 3+0 4,5**

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

**İŞL 209 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.

**İŞL 421 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.

**KGS 104 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.

**KLP 201 Mould Design 2+2 3,0**

The Importance, Properties and Choice of Mould Process in Machine Construction; The Study of Basic Mould Elements: Mould sets, Bushes, Guide pillars, Female mould and emeries, Skinning plates, Pilots; Fundamental Operations: Filing, Marking, Drilling, Pivoting and guiding, Centring, Removable joinings; Worktables Used in Mould Manufacturing; Manufacturing of Simple Cutting Moulds; Construction Basics in Blow and Injection Moulds; Manufacturing and Mounting of Blow and Injection Mould.

**KÜL 199 Cultural Activities 0+2 2,0**

Participating Actively or as a Spectator in Sports Activities; Participating in Activities Arranged by the Counseling Center; Participating in Workshops in Art; Education on Museums; Participating in Art Trips; Participating in Cultural Trips; Participating in and Taking Duty in activities such as Cinema, theatre, scientific Meeting etc.; Taking duty in Clubs; Being a Student Representative and Participating in Environmental Activities.

**MAK 115 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.

**MAK 116 Mechanical Drawing II 1+1 3,0**

Tolerances and Surface Roughness: Surface finish symbols, Lay of surface, Design a pair of mattinggears for specified gear centres; Production Drawings: Basic forms of standards

screw thread, Single start square screw, Multistart square screw, Acme square screw, Buttress threads screw, Screw threads, Bearings; Gears; Installation Drawing; Drawing Studies: Engineering drawings to Turkish standard, Working drawings, Turkish standard including tolerancing.

**MAK 117 Manufacturing Process I 3+1 4,0**

General Information About Manufacturing in Mechanical Technology; Knowledge and Skills Process of Variable Equipment of Measurement and Control; Giving Information About the Equipment Related to the Handwork; Basic Drilling on Drilling Machine; Basic Turning on Universal Lathe; Basic Milling on Universal Milling Machine; Grinding Cutting Tools on Grinding Machine, Knowledge and Skills; Undetectable Elements; Basic Welding with Electrical Welding Machine.

**MAK 118 Manufacturing Process II 3+1 4,0**

Basic Knowledge and Skills Process in Universal Turning Lathe; Basic Knowledge and Skills Process in Universal Milling Machine; Knowledge and Skills Process of Variable Equipment of Measurement and Control; Grinding Tool to Free Hand in Carborundum Disc Machines; Basic Knowledge and Skills Process of Abrasion Machine: Stones, Tapered work internal and external using; Basic Knowledge and Skills Process of Welder's Bench.

**MAK 119 Mechanical Technology I 1+1 2,5**

Manufacturing Process; Cutting Tools for Scale Removing; Principles of Scale Removing in Turning Lathe; Principles of Scale Removing in Drill Bench: Describes the functions and uses of the centre lathe, Describes the machining of holes to a given tolerance; Undetectable Elements Principles of Scale Removing in Milling Machine: Describes the three main types of milling machine, Typical milling machine operations; Principles of Scale Removing in Guide and Screwplate.

**MAK 120 Mechanical Technology II 1+1 2,5**

Principles of Scale Removing in Turning Lathe; Principles of Scale Removing in Drill Bench: Milling cutters, Up cut and down cut milling, Mill flats at different angles, Drill holes at different angles; Principles of Scale Removing in Mule and Shape Machine; Principles of Scale Removing in Abrasion Machine: Following on the speed, Feed of the work; Grinding Wheel: Wheel dressing; Principles of Scale Removing in Brooch.

**MAK 124 Engineering Science I 3+0 4,0**

Circular Movement: Angular velocity, Angular acceleration, Torque, Moment of a couple; Potential/Kinetic Energy and Momentum; Principle of Conservation of Momentum: Impulse, Involving torque, Constant torque, Potential energies, Kinetic energies; Simple Machines: Flow, power and loss in fluid; Temperature and Temperature Measurement Equipments: Internal energies, Enthalpy, Specific enthalpy, Water depends, Freezing point, Steam; Foundation of Gas Laws: Constant volume, Constant temperature, Constant pressure, Cycle of Carnot.

**MAK 128 Materials Technology I 3+0 3,0**

Classification of The Materials: Crystalline state, Simple cubic, Body centred cubic, Face centred cubic; Atomic Structure and Relative Force, A compound, An alloy; Latent Heat of Fusion: Solid solution, Equilibrium, Phase, Liquids, Solids, Eutectic composition, Eutectic temperature; Equilibrium Diagram: The iron carbon phase diagram; Iron Alloys; Steel; Non Iron Metals: Aluminium, Copper, Brass, Magnesium, Steel standards.

**MAK 221 Computer Aided Design I 3+1 5,0**

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 Mirror, 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.

**MAK 222 Computer Aided Design II 1+1 3,0**

Dimensions: Measuring line, Measuring arrow, Dimension line, Extension lines, Arrows, Text location, Text format, Style of drawing, Perspective drawing; Screenwriter; Three Dimensional Drawing: Characteristics, Colours; Linear Measuring: Horizontal measuring, Vertical measuring, Baseline measuring, Rotate measuring, Continue measuring, Angular measuring, Radial measuring, Diameter measuring, Radius measuring, Ordinate measuring; Three Dimensional Drawing.

**MAK 225 Engineering Science II 3+1 4,0**

Fluids in Motion: Flow power, Regional lose, Pressure change for parallel circuits, Pressure change for output circuits; Measure and Control: Measurement of speed, Measurement of dynamic, Measurement of pressure, Measurement of temperature, Manuel control, Automatic control; Heat Energy: Change of internal energy, Enthalpy, Specific enthalpy; Gases: Constant volume, Constant pressure, Constant temperature, Adiabatic, Polytrrophic.

**MAK 227 Materials Technology II 3+1 4,0**

Destructive Tests: Tensile testing, Impact testing, Brinell diamond testing, Vickers diamond testing, Rockwell diamond testing; Experiment; Forming Process, Metallography; Polymers; Plastic, Thermosetting plastic, Thermoplastic, Amorphous and crystalline polymer structures, Plasticers, Fillers, Glass, Flexible PVC, Rigid PVC, Polyethylene, Nylon, Internal Plasticization, External plasticization, composites; Corrosion.

**MAK 229 Mechanical Science and Elements 3+1 5,0**

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.

**MAK 236 Computer Aided Manufacturing 3+1 4,0**

General Structure and Coding Systems of Machine Tools; Preliminary Studies Required to Program The Milling Machines; General Preparations of CNC Turning Machines Before Programming, and Programming in Common Codes; CYCLE and Subroutine Turning Functions of Turning Machines and Programming and Usage of The BOXFORD 280 TLC CNC Turning Machines; Programming of The EMCO Compact 5 Milling Machine, Coding Systems and General Structure of CNC Milling Machines; Preliminary Studies Required to Program the CNC Milling Machines.

**MAK 238 System Analysis and Design 2+2 3,0**

Feasibility Working: Project, Selection of material, Bearing, Piston, Wedge, Screw, Working condition, Aided condition, Use for energy, Actuating components, Technology of control, Automatic control, Semi automatic control, Manual control, Maintain, Cost price, Scheme of organization, In line operation, Cards of operation, System of manufactured, Scheme of flow, Time of production, Instruction book, Maintain Working; Periodic Maintain: Daily, Monthly, Cards of maintain.

**MAK 240 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.

**MAK 242 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.

**MAK 252 Energy Management 1+1 2,0**

General Energy Situation of Turkey; Structure of Turkish Industry; Consumption of Energy; Energy Management; Measurement Instruments and Measurement Techniques; Rising Productivity of Energy in Cauldron; Electricity Systems: Economy of Energy in Lighting; Methods of Economic Analysis; Environment; Alternative Energy Sources; Compound Heat Power Production Systems; Environment Laws; Heat Production Systems; Power Production Systems; Source of Energy: Coal, Petroleum, Natural gas, Hydraulic energy, Electric energy.

**MAT 121 Mathematics I 3+1 4,0**

Numbers: Aritmetical Operations, Power and root calculation, Binary, Octal and Hexadecimal systems; Algebra: Algebraic operations, Formulas, Transformation of

formulas, Factorization, Simplification of rational expressions, Equation and Unequalities: Equation systems and their solution; Functions: Derivation of values, Graphic plotting; Logarithm: Exponential functions, Operation with powers; Trigonometry: Transformation of angles, Trigonometric ratios, Function skipping; Geometry: Area and volume calculations, Pythagoras and Ochlides Equations.

**MAT 122 Mathematics II 3+1 4,0**

Linear Equation Systems and Matrix: Solution of linear equation systems, Calculation of Determinant, Reverse matrix finding; Limits: Continuity, Diagnosis of limit, Rules of limit, Continuity of functions; Derivative: Definition of derivative; Integration and Applications: Integration, Gravity center calculation with area and volume; Differential Equations: Basic differential equations, Boundary conditions, Solutions of differential equations; Statistic: Fundamental terms, Frequency dissipation, Graphic representation of data.

**MAT 125 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.

**MAT 169 Mathematics I 3+0 3,0**

Basic Concepts: Sets, Number systems, Expressions with whole and rational powers, Identities; Equations: First and second degree equations, Equations reducible to second degree equations; Inequalities: Solutions of first and second degree inequalities; Relations: Definition, Equivalence relation; Functions: Definition, One to one function and subjective functions, Definition of inverse and composite functions, Graphs of some special functions; Limit and Continuity: Definition of limit, Principles of limit, Definition of continuity.

**MAT 170 Mathematics II 3+0 3,0**

Derivation: Definition of derivative, Rules of differentiation, Geometric meaning of derivative and equation of tangent line, Derivation of some special functions; Applications of Derivation: Extremum problems, Curve sketching; Integral: Definite integral, Indefinite integral; Techniques of Integration; Applications of Definite Integral: Computation of area and volume; Matrix: Definition, Operations on matrix; Determinants: Definition, Properties.

**MEK 108 Mechanics 2+0 2,0**

Vector Algebra and Vector Systems; Force Systems; Centre of Mass. Statics of Particles; Equilibrium; Moment; Friction and Laws of Friction; Velocity and Acceleration; Linear Motion; Curvilinear Motion; Newton's Second Law; Dynamics of Particles; Work and Energy; Hydrostatics (fluid statics);Hydraulics.

**MEK 209 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.

**MİK 201 Microprocessors/Microcontrollers 1+1 2,0**

General Structure of Microcomputer System: Central processing unit, RAM and ROM memory characteristic, ROM kinds, Comparison of RAM and ROM memory, Series transfer, Parallel transfer, Address bus, Data bus, Control bus; Comparison of Microprocessors and Microcontroller: Installation of Microprocessors and Microcontroller System; Introduction to Programming: Assembly language structure, Instructions, Flow diagrams transfer to machine language (Hex Code); Programming: Data transfer, Loop consumption, Sub programme concepts, Addition and subtraction, Shift process.

**MLZ 107 Printing Equipment Technology 2+2 5,0**

Fiber and Main Raw Material Used in Making Paper: Production of cellulose, Additives, Production of glossy paper, Production of cardboard, Unpretentious and super unpretentious, Production of hollowed cardboard; General Testing Methods for Printing Paper: Paper and climate, Grain direction in paper, Paper problems; Press Inks: Raw materials of inks and their features, General testing methods for printing Ink, Senility to Light, Tackiness, Thicksotrophy, Printability, Drying, Viscosity; Problems of Printing and Recommendations in Printing.

**MRK 201 Advanced Computer Applications 2+2 3,0**

Standard Data Base between CAD Software's; Introduction to Solid Model Design with SOLIDWORKS: Working planes, Parametric design, Plane modeling, Images of solid model disassemble; Animation of Solid Model Mounting with Animation Software; Solid Model Calculation, Handling Construction Drawings; Solid Model Arrangement Command; Semester Project.

**MRK 203 Construction I 2+2 4,0**

Design and Construction of Organization; Sketch Drawings; Intersection and Side Views: Various examples of intersection and side views; Axle; Pulleys; Bevel Gear: Horizontal bevel gear; Bevel gears with bigger or lower than 90° axis angles; Worm Gear; Rock and Pinion; Steel Construction; Drawing Techniques of Standard Moulding Equipment.

**MRK 204 Construction II 2+2 3,0**

Construction Drawings of Casting Equipment: Model drawing, Moulding drawing; Clamping Stripper, Striper Plate; Drilling, Stamping, Curling, Rolling, Hauling, Plastering, Montage and Detail Drawing of Pressure Mould; Blow and Injection Mould Drawing.

**MRK 213 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.

**MRK 216 Measurements Techniques 2+0 2,0**

Mechanical, Optic, Digital, Electric, Electronic, Pneumatic Measuring Equipments, Principles and Equipments of Coordinate Measure; Measuring Rates; Measuring Sensitivity; Measuring Errors and Calculations: Control hardware and equipment, Specific control and measuring equipment; Surface Strength; Surface Roughness; Template; Presentation of New Control and Measuring Hardware.

**MRK 218 Basic Principles of the Machine Construction 3+0 3,0**

Construction Properties: Lightness, Simplicity, Safety, Standardization, Precaution of tensile stress; New Design's Manufacturing, Transportation, Montage, Conveniences; Construction Design According to Strain Types; Precaution to Facilitate Surface Processes; Rules of Drawing; Heat Treated Piece Design; Hint Points in the Design of Casting Piece; Development of Usual Systems.

**MTB 103 General Typesetting Systems Technology 3+0 5,0**

Introduction to Typesetting Technology: Historical development of typesetting, Definition of typesetting; Technique of Typesetting: Type in printing industry, Manual setting and requirements for manual setting, Types of letters and lines, Typesetting of business cards and invitation cards; Development and Classification of Printing Type and Characters: Definition of printing type, Classification of printing type; Structural Features of Printing Type; Desktop Publishing: History, Types of settings in desktop publishing, Types characters preferred in desktop settings; Quality Control in Typesetting: Visual quality, Technical quality; Communication Between Customer and Typesetter; Corrections in Setting; Calculation of Typesetting Costs.

**MTB 105 Basics of Light and Color 2+0 3,5**

Color: Psychological color, Physical color, Spectrumsolaire-White color, Dye color, Light color; Methods of Mixing Colors; Appearing of Objects Colored; Theories of Color: Young-Helmholtz Theory, Brewster Theory; Chroma-Saturation; Primary Colors; Harmonic Colors; Contrast Colors; Complementary Colors; Tone Value; Simultaneous Colors; Harmony of Contrast Colors; Inharmonic Colors; Hot-Cold Colors; Examining Tone Contrast Comparatively One by One; Contrast of Tone; Studying Chevreul's Principles; Rule of Color Contrast.

**MTB 110 Techniques of General Printing 2+4 5,5**

Practical Application for Letterpress: Typesetting of simple notice, Business card, Invitation card, Typesetting of book, Application of formulated typesetting by manual and machine settings; Reproduction Applications: Originals of repro, Line and tram points filming mounting applications; Practical Applications for Offset Printing: Drawing of page design, Page balance, Mounting with work and tiorn, Foot-gripper mounting, Technique of Offset plate exposing system, Development of exposing system plates, Mounting printing plates into printing; After Printing Preparation: Blending of single and double Pages, Operations of perforation.

**MTB 112 Reproduction Technology 3+0 5,0**

Definition of Reproduction; Introduction of Machines, Tools and Equipment Used in Reproduction Technology: Cameras, Contact copying machine, Aggrandizer, Automatic development machines, Color separation machines; Structure of Films; Sensitometry; Development of Films; Originals and Classification of Originals; Methods of Line Reproduction; Method of Halftone Reproduction; Definition of Tram Points: Functions of tram points, Types of tram points, Screen fullings and tone values of tram points; Tram Points Section According to Type of Paper; More Case in Trammed Reproduction; Importance of Color Separation: Color separation filters, Relations of exposing system of plates and color separation.

**MTB 204 Quality Control 2+0 3,0**

Quality Management: What is the concept of quality?, History of quality; Elements of Quality: Design quality, Appropriateness quality; Basic Factors Affecting Quality; Quality System: Quality system structures in businesses, Quality difficulties in businesses, Quality cycles in press industry; Total Quality Management: Basic concepts of total quality, Total Quality elements; Importance of Total Quality Management: Total Quality profits, Comparison of Taylor model and Total Quality Management; Quality Guaranteed Systems-ISO 9000 Standards; Applications of Quality Control Methods in Press Companies: Quality control steps in before printing, printing and after printing processes.

**MTB 214 Binding Technology and Design 2+2 4,0**

Introduction to Binding Technology: History of binding, Definition of binding, Requirement used in binding of book-magazine-brochure; Tools, Equipment and Machines Used in Bindery; Processes of Binding: Wire seam, Sting seam, Mechanic seam, Binding with mechanism, Binding with gum; Production of Binding: Manuel binding production, Serial binding production, Machines used in serial binding, Steps of pasteboard cover; Binding Cost Calculations.

**MTB 215 Offset Printing I 2+2 4,0**

Offset Printing Product: Definition of Offset, Printing rules; Department of Offset Printing: Department of typesetter-reproduction-mounting-exposing system of plate; Introduction to Offset Printing Materials; Originals of Plate Copies; Plates of Offset Printing: Types of plates, Graining processes and importance of graining, Graining processes methods, Exposing system methods of plate, Toray

Waterless printing plates; Water and Damp System of Offset Printing: Ideal chamber water, Hardness of water-importance of PH values, Introduction to dampening materials; Paper of Offset Printing: Quality of paper, PH values, Balance of ink-paper; Ink for Offset Printing: Types of Offset ink, Introduction materials, Printing solutions.

**MTB 216 Offset Printing II 2+2 4,0**

Machines of Offset Printing: Web offset-sheet offset printing machines; Blanket in Offset Printing: Types of blanket and section of blanket, Tension and adjustments of blanket; Inking Units: Adjustments of ink dose, Ink roller and function of roller rolling pin; Damping Units: Adjustments of water rollers; Damping Systems: Conventional-Alcotron-Alcolor-Weko-Anilox damping; Side Lay and Side Lay Calibration; Front Lay: Adjustments of front lays, Foot-gripper to regulate of front lay; Quality Criteria of Offset Printing: Slur-Doubling, Dot gain, Trapping, Densitometric measuring; Printing Difficulties of Offset and Recommendations in Offset Printing.

**MTB 217 Printing Techniques I 3+2 5,0**

Screen Printing Proces: Tools, equipment used in printing and characteristic, Technique of preparing plate; Relief Printing: Technique of preparing plate, Materials used in printing and characteristic; Electrophotographic Systems; Buffer Press: Technique of preparing plate, Tools, equipment used in printing.

**MTB 218 Printing Techniques II 3+2 5,0**

Buffer Press: Technique of preparing plate, Tools, Equipment used in printing; Hologram Printing: Tools, Equipment used in printing, Technique of mounting into printing; Barcode Printing: EAN code system, Preparing master film and establishment of printing tolerance; Lithography Printing; Continuous Form Printing; Hot and Cold Relief Printing; Cutting Printing; Numeric Printing.

**MTB 219 Total Quality Management in Printing****Industry 2+2 3,0**

Total Quality Management (TQM): Total quality concept, Basic principles of TQM, Developing the total quality culture; Efficiency and Competition; TQM Elements; Forming Quality House; Systematic Approach to Quality Search in Manufacturing: Effective attractions to provide good quality; Quality Ensurance System: Quality ensurance system and TQM, Documentation of quality system; TQM and Application Process: Model suggestion, Quality circles in printing sector, Effect of the quality ensurance system to printing sector; Methods and Techniques Used in TQM: Communication techniques, Data collection and data analysis, Histograms, Group works, Development process, Brainstorming, Fishbone diagram, Comparison.

**MTB 220 Technical English 3+0 3,0**

Determination and Usage of Printing Terms in Printing; Turkish Meanings of Printing Terms; Translation of Printing Papers; Examining and Following of Educational Computer Programs and Films about Printing in the Class; Writing a Technical Report.

**MTB 221 Desktop Publishing 2+2 3,0**

The Definition of Desktop Publishing; Importance, Development, Introduction to graphic image processing programmes and printing layout of page; The Preparation of Logo and emblem and etc. Works on Computer With the Help of The Graphic Programmes Which are Used in The Sector; Works of Paper Representation; Knowing The data Transfer Methods and Image Formats among The Desktop Publishing Programmes; Arranging The Film Activity Adjustment and Ayringer That are Suitable for Printing System; Points That Should be Paid Attention To When The Work is Sent to Film Activity

**MTB 223 Marketing and Advertising 2+2 3,0**

The Subject of Marketing and Its Content; The Development of marketing; The Mentality or Understanding of Marketing; Kinds of Marketing: Marketing of product and service; The Process of Marketing Management; The System of Marketing: The affection of macro and micro external environment and factors within the operation; The Process of Marketing; Consumers' Markets and Consumers' Manners; The Relationship Between Marketing and Advertising.

**MTB 225 Production Management and Planning in Printing Establishments 2+2 3,0**

The Basic Notions of Product Management and Product Systems: Objectives, Functions; Selection of Technology: Dimensions of technology and new product technologies; The Organization Layout of The Establishment and Material (equipment) Transfer: The effect of organization layout to the product systems, business flow types, Material transfer factors; The Planning of Capacity and The Analysis of Business: The criteria for capacity measurement, The improvement of methods and the measurement of business; Production Planning and Quality Control: The importance of planning and the strategies of planning, The place of product control in product systems, Components of quality and total quality control.

**MTB 227 Photography Techniques in Printing Industry 2+2 3,0**

What Is Photograph?; Brief History of Photograph; Effects of The Objects Seen on The Photograph to The Meaning; Cameras: Introduction of medium and large format cameras; Objectives: Standard, wide, tele, zoom and macro objectives; Posing Control Mechanisms: Diaphragm, Covering; Freezing The Motion; Depth; Introducing The Materials: Black and white film and cards, Film types according to their formats, Film types according to light intensity and colour sensitivity; Contrast, Clearness and Grain Structure; Light: Light measure and types, Posing methods; Filters and Accessories; Image Organization; Enlarger Usage; Black and White Fixing and Card Printing.

**MTB 251 Press Business Administration 2+2 3,0**

Characteristics of Press Organizations: Features related to production, Features related to products, Capacity and organizational structure in press companies; Function of Production in Press Companies: Production systems in press companies, Basic features of production process in press

companies, Production planning, Documents used in pre-regulations for planning and control of production.

**MTB 253 Web Publishing 2+2 3,0**

Structure of Internet, What is Intranet?; Connecting to Internet: World Wide Web, Modem setting, Dial-up, Internet Explorer; Organization of Web Content: General settings, Web access control, Content advisor; Preparation to Internet: Choice of internet service provider, Research of web software, HTTP file transfer protocol; Web Publishing: Concept of HTML, commands, Arrangement of HTML documents, Frontpage-Dreamweaver, Develop of web site content; Privatization of the content, Maintenance of site; Personal Web Page: Develop of content, Web domain, Methodology for making web site popular, Adding the site in to search engines; Digital Publishing; Preparation of Digital Education Material; Transfer and Control of Product for Prints Over Internet.

**MTB 255 Cost Accounting in Printing Industry 2+2 3,0**

Cost Calculations in Printing: Expenses, Items causing expense, Establishing cost centers, Selection of cost calculation system, Estimated costs and real costs; Cost Control: Identifying deviations and corrections; Establishing and Operating Standard Cost System in Print; Calculating Total Cost and Cost Per Unit of Products Printed: Calculation rules for typesetting, paper, printing, ink, binding, plate, film and applications.

**MTB 257 Printing Services 2+2 3,0**

Fields of Printing Service: Before printing, printing, after printing; 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; New Developments in Newspaper Industry; Selection of Technology: Proper use of technology and productivity, Service and Quality; Public Relations: Expositions of printing and paper industry, Expositions of industrial design, Seminars.

**MTR 101 Circuit Analysis 3+0 3,5**

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.

**MTR 102 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.

**MTR 103 Introduction to Mechatronics 3+0 3,0**

Electrical Security; Basic Electrical Measurements, Operation of Oscilloscope and Signal Generators; Electrostatic Sensitive Components Subjects; Mechatronic Structural Components; Mechanical Systems: Design of mechanical system; Electronic Systems; Automation Systems; Informatics Systems; Process Systems; Mechatronic Systems and Design.

**MTR 201 Programmable Logic Controllers (PLC) 1+1 2,0**

Introduction to Programmable Controller: Central process unit (CPU), Input modules, Output modules, Analogue Input/Output Modules and Functions; Programing with Ladder Logic Diagram; Analogoue Modules Properties and PLC Links; Software with Command Chart; Trouble Analysis at Programmable Controllers; Programmable Controllers Interface.

**MTR 202 Process Instrumentation and Control 1+1 2,0**

Introduction to Process Measurement and Control; Fundamental Process Measurements (level, pressure, temperature, flow rate, etc.); Feedback Control; Dynamic Components in Control Cycle; Real Process Analysis; Five General Control Cycles; Flow Control; Pressure Adjustment; Liquid Level Control; Quality Control; Selection of Feedback Controller; Multiple Cycle Systems; Feed-forward Control; Applications; Energy Transfer and Conversion; Heat Transfer; Boiler control; Pumps and Compressors.

**MTR 203 Mechatronic System Components 2+0 2,0**

Mechatronic Structural Components; Mechanical Systems; Design of mechanical system; Electronic Systems; Automation Systems; Informatics systems; Process Systems; Mechatronic Systems and Design.

**MTR 204 Electro pneumatics hydraulics/Electro 2+1 3,0**

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.

**MTR 205 Process Control I 1+1 2,0**

Automatic Control Terms: Set point, Error, Process variable and definitions of measurement, Overshoot, Rise time, Settling time definition; Automatic Control Symbols; Automatic Control Methods; Definition of Open Cycle and Closed Cycle Control Systems; Control Structures; Stabilities at Control Systems; Final Driver Elements.

**MTR 206 Process Control II 1+1 2,0**

Automatic Control Symbols; Automatic Control Methods; Definition of Open Cycle and Closed Cycle Control

Systems; Control Structures; Stabilities at Control Systems; Final Driver Elements.

**MTR 207 Sensors and Transducers 1+1 2,0**

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.

**MTR 208 Mechatronic System Design 1+1 2,0**

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.

**MTR 210 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.

**MTR 212 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.

**MTR 214 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.

**MTR 216 Fuzzy Logic 2+0 2,0**

Fuzzy Logic Term: Boolean algebra process, Cartesian multiplication, Logic multiplication, Logic addition, Closed addition process, Closed subtraction process; Fuzzy

Mathematics; Fuzzy Logic Control Application: Flow diagram of fuzzy logic control application; Different Control Applications with Fuzzy Logic Control Evaluations; Artificial Neural Networks and Fuzzy Logic Neural Networks: Neural network, Hebbian, Kohonen, Back-Propagation learning methods.

**MTR 218 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.

**MUH 233 Accounting Techniques and Commercial Software I** 1+1 2,0  
Basic Concepts and Accounting Systems: Basic concepts, Opening account, Closing account, Registration, Reports and documents in accounting; Balance Sheet and Income Table: Balance sheet arrangement principles, Properties and processes of accounts in balance sheet, Income and expenditure calculations, Cost calculations and process; Use of Packet Program: Keeping and processing accounting registrations in computer.

**MUH 234 Accounting Techniques and Commercial Software II** 1+1 2,0  
Application of Business Account Approach with Packet Program: Usage areas of business account approach, Registering and keeping outputs in computer according to business account approach; Personnel Following and Insurance Processes: Transferring personal affairs to computer, Payroll arrangement in computer, Insurance documents arrangement in computer; Card Processes: Arrangement of checks, notes and bank cards, Arrangement of stock cards, Arrangement of current account cards, Product cost calculation.

**MÜZ 151 Short History of Music** 2+0 3,0  
Mile Stones in the History of Music; Music of the Antique Period; Music of Far East; Music of Anatolia; Music of the Middle Ages: Gregorian Chants; Music of Renaissance: Bach and Handel; Music of the Classical Age; Pianoforte in the Classical Age; Romantic Age; Nationalist Movement; Contemporary Music; Nationalism and Universality.

**PZL 103 Introduction to Marketing** 3+0 3,0  
Definition of Marketing; Content; Development; Modern Marketing Management; Marketing Management and Environment Relation; Strategic Marketing and Role of Marketing: Company mission, Company objectives; Market Concept; Consumer Market and Consumer Behaviour; Market Segmentation and Its Fundamentals; Market Positioning; Product Concept; Product Types and Properties; Promotion Concept and Its Importance; Promotion Decisions; Promotional Mix Preparation Process; Advertisement; Public Relations; Personal Selling; Sales Promotion; Services Marketing; Internet Marketing (Web-

Marketing); Marketing Management; International Marketing.

**PZL 106 Marketing Communication** 2+0 2,0  
Marketing and Communication: Marketing communication content; Communication Process and Functions of Marketing Communication; Fundamental Properties of Principal Marketing Methods; Elements of Promotional Mix: Advertisement, Public Relations and Announcement, Personal Selling, Sales Promotion; Harmonized Marketing Communication Tools: Sponsorship, Goal Oriented Marketing; Direct Marketing; Other Marketing Communication Types: Product, Brand, Package, Distribution and Price; Marketing Communication Strategy and Management; Planning: Objectives, Budget, Marketing, Ethics and Social Aspects of Communication.

**PZL 108 Consumer Behaviour** 2+1 2,5  
Consumption Concept; Consumer Concept; Consumption Society Ideology; Consumption Society; Consumer Culture: Consumer Culture Production System, Cultural Choice, Popular culture; Brand Loyalty; Symbolic Consumption; Consumer Culture and Hedonism; Consumer Culture and Consumer Behaviour Relation; Effect of Advertisement on Consumer Behaviour.

**PZL 237 Brand and Brand Strategy** 2+1 4,0  
What is Brand?; Brand in Terms of Marketing Communication; Brand and Change; Corporation and Brand; Brand, Image and Idea; Brand Creation: Brand Elements; Brand Management Strategy: Brand Management, Elements of Brand, Brand Communication and Brand Positioning.

**RAY 115 Scientific Principles of Technology I** 2+0 2,0  
Measurement and Unit Systems; Scaler and Vectoral Quantities; Kinematics: Velocity, acceleration; Dynamic: Work, power and energy; Friction Between Surfaces; Momentum and Collision; Stress and Strain Forces; Equilibrium and Center of Gravity; Electric Fields; Electric Potential; Capacitor, Electric Current; Magnetic Field and Sources; Electromagnetic Induction; Chemical Effects of Electric; Characteristics of Light.

**RAY 116 Scientific Principles of Technology II** 2+0 2,0  
Fluid Mechanics; Fluid Characteristics: Types of fluids, Density, Pressure, Monometers, Viscosity, Properties of fluid flow, Continuity principle of flow, Equality of energy and friction losses; Heat: Thermometer and temperature scales; Heat and Thermal Energy; Heat Capacity and Specific Heat; Heat Transfer Concept and Heat Transfer Mechanisms: Conduction, Convexion, Radiation; Heat Transfer Equipments and Principles of Studying; Energy Sources: Fossil sources, Fresh energy sources.

**RTV 101 Video Technique I** 2+0 3,5  
Basic Cinema Technology: Movie camera, Movie formats, Editing in a motion picture, Basic characteristics of electromagnetic waves, Radio broadcasting with electromagnetic waves; Fundamentals of Television Technique: Forming image on television, Interlaced and progressive scanning technique; Signals Used in Television



Technique: Types of signals used in the studio and forming them; Standards of Television Broadcasting; Characteristics of PAL, SECAM and NTSC Systems.

**RTV 102 Video Technique II 2+0 3,0**

Physic of Color: Spectrum of electromagnetic wave, Visible electromagnetic waves, Evaluation of colors according to dimensions of a wave, Saturation of colors, Tone of a color, Type of a color, Brightness, Luminance, Chrominance, Component signal, Temperature of a color; Electronic Cameras: Working principle of cameras, Features of tubed cameras, Cameras with CCD, Types of CCD; Basic Principles of Video Recording: Video Recording: Electronic assembly and editing, Numerical recording and analog technique; Formats of Numerical Recording; Technique of Numerical Image; Television Studio Design.

**RTV 103 Technique of Radio Broadcast Systems 2+0 4,0**

Historical Development of Radio; Basic Information about Radio; Radio waves and frequencies, Types of broadcasting, Range of broadcasting, FM and AM transmitters, Harmony problems in transmitters; Technological Equipment Necessary for Radio Broadcasting; Radio Channels in Turkey; Frequency distributions, Certificate given by "RTÜK" for establishment of a new radio; Radio Studios: EBU (European Broadcast Union), Standards for radio studio equipment.

**RTV 104 Logic Circuits 3+0 3,5**

Number Systems: Binary number system, Octal number system, Hexadecimal number system; Digital Codes; Principles of Boolean Algebra: Rules of boolean algebra and its theorem, Solution of logic problems, Integrated circuit parameters and their classification according to their forms; Integrated Circuits: Decoders, Encoders, Comparators, Multiplexer, Demultiplexers, Adder Circuits; Multivibrators.

**RTV 105 Audio Circuits 3+0 4,0**

Introduction to Electronic Circuit Elements: Resistance, Diode, Condenser (Capacitor), Transistor, Integrated, Tristor, Triyak; Use of Sound Laboratory Hardware: AVO-Meter oscilloscope, Sound signal Generator; Electronic Circuit Construction: Press circuit drawing, Circuit member connections; Sound Front-Amplifier and Amplifier; Amplifier and Cabin Filters; Sound Distribution Amplifiers; Sound Level Measurement; Periodic Maintenance of Sound Recording Systems; Sound System Connectors.

**RTV 106 Video Circuits 2+0 2,0**

Introduction to Electronic Circuit Elements: Resistance, Bobbin, Condensator, Diode, Transistor; Converting Alternative Current into Direct Current: Transformers, Functions of transistors; Use of Transistor as an Amplifier: Photo-offset method, Photo-etching method, Silk press method, Removal of press circuit of a adjustable adapter.

**RTV 107 Audio Technique I 3+0 4,0**

Sound Definition; Physical Properties; Decibel; Hearing Curve; Audible Frequencies; Acoustic and Sound Isolation: Calculating inner acoustic through a formula; Microphones:

Kinds of microphones and their forms, Loudspeakers cabin measurements, Formulas; Mono and Stereo Systems; Mixers and Types; Limiter and Compressor; Principle of Magnetic Recording; Audio tape-recorders, Forms, Types, Periods; Photograph Record and Phonographs: Period Speed, Diameters; Functions of Sound Operators in Radio and Television; Intercom Systems and Inside Communication between Sections in R-TV.

**RTV 108 Audio Technique II 3+0 4,0**

Physical Properties of Sound: Sound amplitude, Sound tone; Equal Sound Density Rule: Frequency-Amplitude Relationship; Microphones: Structural properties, Dynamic-condensator microphones; Direction properties; Single-multiple direction microphones, Shotgun microphones; Broadcast Mixers, Post- Production Mixers, In-line Mixers; Tape Recording Machines; Sound Signal Processors, Compressor-Limiter; Loudspeaker and Cabin Systems: XY and M-S method.

**RTV 110 New Communication Technologies 2+0 2,5**

Communication Satellites: Technical structure of the satellites, Frequencies used in satellite broadcasting, Television systems in transition period, Satellite transmitters, Satellite receivers; Transition Period Television Systems: Edtv, Mac, Pal Plus; New Television Technologies; High Diagnosed Television (HDTV), HDTV broadcast systems; Use of Hdtv in Electronic Movie; Numerical Television Technique (Dvb): Standards of Dvb; Data Broadcast; Techniques of Data Broadcast; Cable-Television; Teleconference; Virtual Studio.

**RTV 201 Technologies of Video Recording and Editing Systems I 3+0 3,0**

History of Recording Technology; Recording Media; Form of Magnetic Tapes and Technique of Recording on Magnetic Tapes; Sound Recording on to a Magnetic Tape; Technique of Image Recording on to Magnetic Tapes; Formats of Picture Recording System; Quality of Broadcasting; Half-Professional, Amateur Formats; Circuits of Picture Recording Systems; Picture Recording Electronics: Picture disc, Tape flow; Circuits of Macro Servo Systems; System Control Sections; Editing Techniques on Magnetic Tapes.

**RTV 202 Techniques of Video Recording and Editing Systems II 3+0 3,0**

Digital Image: Types of digital image system and its working principles, JPEG, MPEG, DV and other formats; Digital Image Recording systems: Properties of professional and amateur formats; Digital Image Electronics; Recording Techniques; Disc Based Recording Media; Magnetic, Recording in Optic Discs; Editing Technique, Working Principles of Not Linear Editing Systems; Disc Based Image Recorders; Image Emcees; Editing Techniques in Digital Image Systems; Digital Image Transmission and Distribution Systems.

**RTV 203 Advanced Logic and Microprocessors I 2+0 3,0**

Introduction to Logic Circuit: Principles of logic systems; Basic Functions of MicroProcessors; MicroProcessor

Applications; Analyzing Function Tables, Karnaugh Maps; Basic Logic circuits: Decoder circuits, Encoder circuits, Multiplexer circuits; Demultiplexer circuits Flip-Flop Circuits; Latch Memory; Sequential Circuit Applications.

**RTV 204 Advanced Logic and Microprocessors II** 2+0 3,0

Converting Analog Data into Digital Data; Converting Digital and Numerical Data into Analog Data; Sampling Video Data by ADC; Saving Video Data Numerically; Saving Audio Data Numerically; Use of ADC Transformers in Broadcast Systems (from Analog to Numerical); Use of ADC Transformers (from Numerical to Analog) in Broadcast Systems; Time-Based Corrector (TBC): Definition, Numerical functions.

**RTV 205 Management and Organization in R-TV** 2+0 2,5

Management System in Radio and Television Institutions: Worldwide examples for national and commercial systems; Policies: Policies of broadcasting, Personnel policies; Advertisement policies, Finance policies; Planning: General broadcasting plan, Broadcasting programs, Investment plans and projects; Budget Plans; Organization: Division of labor and coordination activities, Consultation units, Control area; Form of Organization, Audit in Organization; Legal Audit: Budget audit, Public opinion control; Features and Organizational Development of Turkish Radio and Television Corporation.

**RTV 206 Camera and Light** 2+0 2,0

Cameras: Television cameras; Types of Electronic Cameras: Studio cameras, Electronic field production (EFP) cameras, (ENG) Electronic news gathering cameras; Camera Lenses: Optic properties of lenses, Use; Units of Picture Transfer: Multiplexer, CCD Half-Conductive; Materials Needed for Illumination; Sources of Light; Kinds of Electric Bulb; Methods of General Illumination: Basic light, Key light, Top light, Filling light.

**RTV 209 Digital Audio Recording Techniques I** 2+0 2,0

Sound and Number Systems: Binary system, Decimal system; Principles of Numerical Sound; Filtering; Illustrating; Coding; Effects of Errors on Time and Data; Correction of Errors; Reed Solomon Codes; Pulse-Code modulation; Perceptual Coding; Numerical Sound Systems; Converting from Analog to Numerical (ADC); Converting from Numerical to Analog (DAC).

**RTV 210 Digital Audio Recording Techniques II** 2+0 2,0

Numerical Sound Recording; Tape Recording of Numerical Sound; Moving Headed Recording Systems (RDAT Format); Fixed Headed Recording Systems (DASH Format); Disc Recording of Numerical Sounds; Hard-disc, Compact-discs, Recordable (CDR), Mini-discs, Digital (numerical) a Double-sided disc (DVD); Reading of Digital Sounds; Compact-Disc Systems (CD); Combination of Digital Sounds; Digital Sound mixers; Digital Sound Signal Processors; Digital Filters; MPEG-1 Sound Standard; Digital Sound Data Transmission.

**RTV 215 Systems of Studio and Electronic Video Effect I** 3+0 3,0

History of Television; Camera Tubes and Their Working Principles; Types of CC Elements and Their Working Principles; Black and White Camera Systems and their working principles; Synchronic Signals on Television; Black and White Television Receivers and Their Work Principles; Work Principle of Television Monitors; Color Technique; Colored-Television Systems; Secam, Ntsc Color Coding Systems; Pal System Color Coding (Code) and Its Work Principle; Pal Color System Code Encoder and Work Principle; Signals of Pal System; Types of Colored-Cameras and Work Principles and Circuits; Test of Cameras.

**RTV 216 Systems of Studio and Electronic Video Effect II** 3+0 3,0

Digital Cameras; Types of Picture Selection Tables and Their Working Principles; Picture Selection Units; Matrices; Color Correction and Regulation Systems: Electronic graph drawing, Coloring and animation systems; Three Dimensioned Animation Systems; Digital Image Effect Systems; Color System Transformers; Radio and TV Data; Radio and TV Links; Satellite Broadcasting; Satellite Receiver and Transmitter Systems; Cable Television Technologies.

**RTV 217 Creation, Production and Broadcast Process of TV Program** 2+0 3,0

Technology and TV; Properties of Television as a Communication Devices; TV Production Sector: Production companies, Private and public companies, Advertising agency, Postproduction Companies, Cast Agency, Vocalization studios; TV program types; TV Creation Process; Production Budget; Production Process; Postproduction; Broadcast Precontrol; Legal Obligations on TV program Production; Preparation of TV Program Suggestion.

**RTV 218 Technique of TV Broadcast Systems** 3+0 3,0

Methods of Television Broadcast: Broadcasting through radio links; Introduction to footprint: Definition; Satellite Receiver, TV Antenna System Units; Types of Satellite Antenna; Connections of Satellite Antenna; Feed Horn "Polarator"; LNB (Microwave Head), LNA, Receiver, Decoder; Deviation Angle; Rising Angle; Local Angle; Cables used in TV distribution systems; General Technical Properties of TV Transmitters as Specified by RTÜK.

**RTV 222 Technical English** 3+0 3,0

Definition and Usage of Frequently Used Technical Terms of Radio Television: Turkish meanings and Definition of this words; Translation of Radio Television Papers from Literature into Turkish; Covering Educational Representations and Computer Softwares; Printing Technical Reports.

**RTV 223 Digital Radio And TV Broadcasting Systems** 2+0 3,0

Fundamentals of Digital Audio and Video; New Recording and Archiving Mediums for Digital Audio and Video New audio Communication Channels; Digital Radio

Broadcasting; Radio-Audio Communication Techniques on Internet and Intranet Networks: Radio satellite broadcasting; Radio broadcasting on cable networks; Digital TV Broadcasting Channels; (High speed internet-intranet networks, ATM, PSL) (Multi casting, Uni casting, Broadcasting) Digital Satellite TV Broadcasting; MHP Units and Broadcasting Techniques; Multi-Channel Interactive TV Broadcasting. Digital TV Transmitters for Terrestrial Broadcasting; Microwave Distribution Systems, MMDS, MDS Systems. Digital Satellite and TV Receiver Systems.

**RTV 225 TV Programme**

**Production Techniques 2+0 3,0**

Types of Television Programmes and Their General Characteristics; Types of TV Programme Broadcasts; Live Broadcast, Outside Broadcast, VTR Broadcast, Television Programme Production Process; Pre-Production: Planning, Determine the target audience and the purpose of the programme, Determine the programme content and programme objects, Setting the technical items and scenerize a television script, Production: Studio shot and exterior shot applications, Describe the production team's role, Determining the technical facilities according to production's content, Designing the picture, Preparing the camera cards, Post-Production: Video and Audio editing, Broadcast systems.

**RTV 226 Broadcasting Technologies in Information Age**

**2+0 3,0**

General Characteristics of Social Structures; Information Age; Definition and Characteristics of Knowledge: Information, Knowledge and Data; Knowledge As An Information: Informationalism and Informatic; Information Age Technologies: New technologies, New media; Characteristics of new media; Media and Broadcasting in Information Age: Traditional media and broadcasting, new media and broadcasting, Broadcasting in central countries, Broadcasting in surrounding countries; Liberalization In Broadcasting Technologies: Private Broadcasting, Deregulation.

**RTV 227 Nonlinear Publishing**

**2+0 3,0**

Introduction and Process of Television Publishing; Combination of Digital Systems and Television and Data Processing World; Nonlinear Editing Systems and Operation Principles; Application Field of Disk Based Image Record and Operation Systems on Television Canals; Examples of Linear and Nonlinear Television Publishing; Record at Nonlinear Television Publishing, Classification of Image; Archiving, Image, Editing and Processing; Systems Used in Studio; Publication on Automation.

**RTV 228 General Communication**

**2+0 3,0**

Basic concepts: Source, Receiver, Message, Channel, Coding, Decoding, Feedback, Noise, Selective perception, Reference frame; Operation Of Communication Process; Characteristics Of Communication; Culture: Elements of culture, Types of culture; Communication Tools And Cultural Communication; Nonverbal Communication: Definition, Function, Classification; Group Communication: Definition, Functions of groups, types, Operation of group

communication, Factors which effects group communication; Organizational Communication: Definition, Importance, Functions; Organization Culture; Communication Channels In Organizations; Mass Communication: Definition, Characteristics, Process, Historical evolution, Social effects.

**RTV 230 Interactive Television**

**2+0 3,0**

Television Broadcasting: Evolution times and characteristics; Digital Television Broadcasting: Characteristics, Communication standards, Access to audience, Set Top Box (STB): Structure, Function, Characteristics; Television Systems: SDTV, EDTV, HDTV; Possibilities Of Digital Broadcasting, Dimensions of audience, Dimensions of broadcasters; Concept And Definition Of Interaction; Interaction Of Television: Services, Interaction levels; Semi-Interaction: Variety of channels, EPG, VOD, NVOD; Full Interaction: Examples of interactive television programs.

**RTV 232 The Basic Techniques of Diction, Announcing and Sound Recording**

**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.

**RTV 234 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.

**RTV 251 Picture Selection**

**2+0 3,0**

Basic Structure of Picture Selection; Image Transition; Basic Image Transitions: Cutting, Chaining, Imposing, Fadeout; Special Visual Effects; Standard Electronic Effects: Wipe, Border, Hard, Soft, Wiping; Electronic Coding; Luminance coding, Chrome coding, External coding, Internal coding with color discrimination; Special Numerical Effects, Usage of picture selection.

**RTV 252 Information Resources 2+0 3,0**

Introduction and General Information: Basic concepts, Structure and components of information, Stages of access to information and documents; Information Resources by Their Features; Written, Visual, Audial, Audio-visual information resources; Information Resources by Medium: Information resources in traditional writing medium, Information resources as films, Information resources in electronic medium, Information resources on available other media; Internet: Internet tools, On-line library catalogs, Search engines, On-line databases, Information search strategies on the Internet and access to information, electronic library; Search for Information Resources on Traditional Libraries.

**RTV 253 Audio Recording and Editing 2+0 3,0**

Microphone Applications; Dynamic-Condensator Microphone; Shotgun Microphone; Digital Sound Recording Machine Applications; R DAT Audio Tape Recording Machines; Minidisk Digital Sound Recording and Reading Machines; Computer Hard-Disc Recording System; Mixers; Sound Signal Processor Applications; Echo; Delay; Noise Filter.

**RTV 254 Radio Programming and Broadcasting 2+0 3,0**

Operating a Radio Station and Departments of a Radio Station; Broadcast Formats; Radio Programming; On-Air Broadcasting; Live and Recorded Broadcasting: Interviews, Production, Preparation prior to the broadcast, Attribution or Characteristics of Air Personalities-Concept of Radio DJ: Radio announcer, Speaker; Preparation for a Program; Writing Format-Oriented Creative and Audio Texts (Differences between Audio and Visual Texts); Dynamics and Process of Announcing; Voice, Language Use, Breathing Techniques, Intonation, Phonetics and Articulation Exercises; Evaluation of Performance.

**RTV 255 Studio Techniques 2+0 3,0**

Technical Equipment of a Professional Studio; Studio Camera; Block Stratum of a Camera: Tens, Tubes, Video Amplifiers, Pre-Amplifiers; Video Processor I; Vertical Horizontal Deflection; Auto Shift; Video Processor II, Encoder; SYNC Generator; Power Supply Audio PCB X-Y; Alignment Card; Auto Bean Control; Units of Camera Control: Filters; Master gain, Contrast, Knee, Saturation, White balance, Black balance detail, Master black, SYNC pulse generator, Wisien mixer; Intercom Matrix Systems; Teil Line; Monitors.

**RTV 256 Radio Programmes Project Application 0+2 3,0**

Preparation of different types of radio programs in conformity with broadcast and announcement rules: Jingles, Brief introduction of the programs to be broadcast, News programs, Interviews and debate programs, Documentaries, Music programs, Programs on current issues (such as movies, books, etc.); Preliminary Research on Prospective Programs; Text Writing; Announcement; Music, Planning the Effect and the Other Components; Using Production Studios.

**RTV 257 VTR Recording and Editing 2+0 3,0**

Definition of Applications in VTR Recording and Editing Lesson; Doing Applications for Recording; Projects; Track and Time Code for Editing Applications; Attention on Appropriate Studies; Study on Control Track and Time Code on Assembly and Edditing; Application of Assamble Edditing and Insert Edditing; Applications with Splite Studies on Assemble and Insert Edditing.

**SAN 119 Fundamental Art Education 2+0 2,0**

Art and Artist: Concepts About Art, Artist's Role in Society, Relationship with Society, Creation act and creation process; Fundamental Elements Forming Visual Language, Principles and Light: Light and Shadow on Natural Objects, Light and Shadow on Artificial Objects; Point: Definition of Point, Potentials, Characteristics, Arrangements, Regular Rhythm, Irregular Rhythm; Line: Definition of line, Potentials, Natural Line Types, Artificial Line Types; Texture: Definition of Texture, Texture Researches, Artificial Textures, Natural Textures, Actual Textures, Textures in Plane, Texture in 3D; Design and Colour Relation.

**SAN 155 Hall Dances 0+2 2,0**

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

**TAR 165 Atatürk's Principles and History of Turkish Revolution I 0+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.

**TAR 166 Atatürk's Principles and History of Turkish Revolution II 0+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.

**TEK 107 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.

**TER 201 Thermodynamics 2+0 2,0**

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.

**THU 203 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.

**THU 205 Community Services 0+2 4,0**

The course aims to integrate the students with the community and enable them to utilize the knowledge they have accumulated in their courses. The students participate in different community projects such as helping young students at 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. The students also try to work in projects which raise environmental awareness.

**TİY 308 Republic Era Turkish Theatre 2+0 3,0**

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

**TRS 102 Technical Drawing 2+2 4,5**

Engineering Drawing and Tools: Drawing tools, introduction, use and care; Engineering Drawing Papers: Papers used at drawing, Measurements of paper standards; Scales: Applications; Standard Line: Areas of application; Line studies; Standard 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.

**TRS 104 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 standards; Scales: Applications; Standard Line: Usage areas, Line studies; Standard 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.

**TÜR 151 Turkish Language I 2+0 2,0**

Language: Theories on the Origin of Language; Language, Culture and Society; Language-reform: Turkish Language Association; Languages of the World; Language Families; Turkic Languages; Characteristics of Modern Turkish: Phonetics, Morphology, Syntax, Spelling, and Punctuation; Rules of Composition: Punctuation; Correspondence: Writing a CV, Writing petitions, Business and personal letters

**TÜR 152 Turkish Language II 2+0 2,0**

Features and Rules of Spoken Turkish: Effective Speech; Effective Listening: Rules of Listening; Reading: Reading comprehension, Critical reading; Text Types: Short story, Novel, Articles, Essays, Poetry, Drama.