



MANİSA CELAL BAYAR ÜNİVERSİTESİ
MANİSA TEKNİK BİLİMLER MESLEK YÜKSEKOKULU
MAKİNE VE METAL TEKNOLOJİLERİ BÖLÜMÜ
MAKİNE RESİM VE KONSTRÜKSİYONU PROGRAMI

2021 ÖĞRETİM PLANI

1.Sınıf 1. Yarıyıl						
Türkçe/İngilizce Ders Kodu	Türkçe Ders Adı	İngilizce Ders Adı	T	U	S	AKTS
MRK 1101	Fizik	Physics	2	0	2	3
MRK 1103	Matematik	Mathematics	3	0	3	5
MRK 1105	Teknik Resim I	Technical Drawing I	3	1	4	6
MRK 1107	İmalat İşlemleri	Manufacturing Operations	3	1	4	5
MRK 1109	Malzeme Teknolojisi I	Material Technology I	3	0	3	3
MRK 1111	Bilgi ve İletişim Teknolojisi	Information and Communication Technology	2	0	2	3
MRK 1113	Ölçme ve Kontrol	Measurement and Control	2	0	2	3
MRK 1011	Seçmeli Dersler	Elective Courses	2	0	2	2
MRK 1201	Meslek Etiği	Occupational Ethics	2	0	2	2
MRK 1211	Kalite Yönetimi	Quality Management	2	0	2	2
Toplam			20	2	22	30

1.Sınıf 2. Yarıyıl						
Türkçe/İngilizce Ders Kodu	Türkçe Ders Adı	İngilizce Ders Adı	T	U	S	AKTS
MRK 1102	Mukavemet	Strength	2	0	2	3
MRK 1104	Bilgisayar Destekli Çizim	Computer Aided Drawing	2	1	3	5
MRK 1112	Makine Elemanları I	Machine Elements I	3	0	3	3
MRK 1132	Teknik Resim II	Technical Drawing II	2	1	3	5
MRK 1142	Kalıp ve Aparat Tasarımı	Mold and Apparatus Design	1	1	2	3
MRK 1152	Malzeme Teknolojisi II	Material Technology II	2	0	2	3
MRK 1162	Hidrolik - Pnömatik	Hydraulics Pneumatic	3	0	3	3
MRK 1004	Teknik Olmayan Seçmeli Dersler	Non-Technical Elective Courses	2	0	2	3
MRK 1020	Girişimcilik	Entrepreneurship	2	0	2	3
MRK 1022	İlk Yardım	First Aid	2	0	2	3
MRK 1024	Çevre Koruma	Environmental Protection	2	0	2	3
MRK 1026	Teknoloji Yönetimi	Technology Management	2	0	2	3
MRK 1028	İnovasyon Yönetimi	Innovation Management	2	0	2	3
MRK 1006	Teknik Seçmeli Dersler 1	Technical Elective Courses 1	2	0	2	2
MRK 1030	Isıl İşlem Teknolojileri	Heat Treatment Technology	2	0	2	2
MRK 1032	Talaşsız İmalat Yöntemleri	Methods of Manufacturing Chipless	2	0	2	2
MRK 1034	CNC Teknolojisi	CNC Technology	2	0	2	2
Toplam			19	3	22	30

Doç. Dr. İbrahim AYDIN
Bölüm Başkanı



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2.Sınıf 3. Yarıyıl							
Türkçe/İngilizce Ders Kodu	Türkçe Ders Adı	İngilizce Ders Adı	T	U	S	K	AKTS
MRK 2101	Sosyal Sorumluluk	Social Responsibility	1	0	1	1	1
MRK 2111	İş Sağlığı ve Güvenliği	Worker's Healty and Safety	2	0	2	2	3
MRK 2121	Bilgisayar Destekli Tasarım	Computer Aided Design	3	1	4	4	4
MRK 2131	Makine Tasarımı	Machine Design	3	0	3	3	5
MRK 2141	Makine Elemanları II	Machine Elements II	3	0	3	3	4
MRK 2151	Kesici Takım Teknolojileri	Cutting Tool Technologies	2	0	2	2	3
MRK 2161	Alışılmamış Üretim Yöntemleri	Unusual Production Methods	2	0	2	2	3
MRK 2171	Kaynak Teknolojisi	Welding Technology	2	0	2	2	3
MRK 2203	Teknik Seçmeli Dersler 2	Technical Elective Courses 2	2	1	3	3	4
MRK 2201	Bilgisayar Destekli Üretim	Computer Aided Manufacturing	2	1	3	3	4
Toplam			20	2	22	22	30

2.Sınıf 4. Yarıyıl							
Türkçe/İngilizce Ders Kodu	Türkçe Ders Adı	İngilizce Ders Adı	T	U	S	K	AKTS
MYO 2002	İşletmede Mesleki Eğitim	Vocational Training in Workplace	5	0	5	4	18
AİT 2102	Atatürk İlkeleri ve İnkılap Tarihi	Atatürk's Principles and History of Revolution	4	0	4	4	4
TDL 2102	Türk Dili	Turkish Language	4	0	4	4	4
YDI 2102	Yabancı Dil	Foreing Language	4	0	4	4	4
Toplam			17	0	17	16	30
Genel Toplam			76	7	83	82	120

T: Teori **U:** Uygulama **S:** Ders Saati **K:** Ulusal Kredi **AKTS:** Avrupa Kredi Transfer Sistemi

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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Physics

General Description

Course Name	: Physics
Course Code	: MRK 1101
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Assoc. Prof. Dr. Etem KÖSE
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Objective is to achieve a good understanding of basic concepts and to be able to apply these concepts to a variety of physical situations. Students will acquire skills in scientific methods, critical reasoning and problem solving.
Course Contents	: Unit systems; Vector, Force, Moment; Balace and Balance conditions; Center of gravity; Laws of movement; Work, Power, Energy; Heat and Temperature; Types of Heat Transfer and Heat Transfer(Conduction, Convection and Radiation); Basic Fluid Properties, Stream Flow Types and Account; Channel and Pipe Flow; Pressure Drop
Recommended or Required Reading	: 1) Physics 1, Raymond A. Serway , Robert J. Beichner ,Çev : (Prof. Dr. Kemal Çolakoğlu) PALME PUBLISHING 2) Scientific Principles of General Physics and Technology Hakan Şevki AYVACI, Yüksel ÇEKBAŞ, Pegem A Publishing 3) Mechanical Statics for Engineers, Prof. Dr. F.P.BEER; Prof. Dr. E.R.JOHNSTON, Çev. Prof. Dr. F.KESKİNEL, Doç. Dr. Tekin ÖZBEK, BİRSEN PUBLISHER 4) Dynamics Durmuş Günay, Alpay Aydemir; Değişim publications, 1998 5) Engineering Mechanics, S.TIMOSHENKO; D.H. YOUNG, Çev: (Prof. Dr. İlhan KAYAN), İTÜ publications
Planned Learning Activities and Teaching Methods	: Face to face, Presentation, Seminar, Project, Laboratory Applications (if necessary) Lectures, Practical Courses,
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to understand basic physical laws and learn to use these laws in daily life
- 2 - To be able to apply basic mathematical methods in problem solving

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4 - To be able to separate static and dynamic systems from each other

5 - To be able to make calculations about thermal and fluid systems

Weekly Course Contents

Week 1	Theoretical : Introduction (Unit systems and conversions, Basic concepts) Practice : Laboratory :
Week 2	Theoretical : Vector, Force, Moment Practice : Laboratory :
Week 3	Theoretical : Vector, Force, Moment Practice : Laboratory :
Week 4	Theoretical : Balace and Balance conditions; Practice : Laboratory :
Week 5	Theoretical : Center of gravity Practice : Laboratory :
Week 6	Theoretical : Laws of movement Practice : Laboratory :
Week 7	Theoretical : Laws of movement Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Work, Power, Energy Practice : Laboratory :
Week 10	Theoretical : Heat and Temperature Practice : Laboratory :
Week 11	Theoretical : Heat and Temperature Practice :



Laboratory :

Week 12 Theoretical : Types of Heat Transfer and Heat Transfer(Conduction, Convection and Radiation
 Practice :
 Laboratory :

Week 13 Theoretical : Types of Heat Transfer and Heat Transfer(Conduction, Convection and Radiation
 Practice :
 Laboratory :

Week 14 Theoretical : Stream Flow Types and Account Channel and Pipe Flow
 Practice :
 Laboratory :

Week 15 Theoretical : Stream Flow Types and Account Channel and Pipe Flow
 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Final	No	1	2,00
Individual study before lecture	Yes	14	14,00
Individual study after lecture	Yes	14	28,00
Quizzes	Yes	1	2,00
Attending lectures	Yes	14	42,00
Preparation for final	Yes	1	10,00
Preparation for midterm	Yes	1	6,00
Total Hours			106,00
ECTS			4,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	1	0	0	0	1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Mathematics

General Description

Course Name	: Mathematics
Course Code	: MRK 1103
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 5
Name of Lecturer	: Instructor Osman GÜÇTEKİN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Aim of this course is to teach adequate and efficient mathematics to create an infrastructure for students.
Course Contents	: Algebra, polynomials, Ratio and proportion, Equations and Inequalities, total symbol, multiplication symbol, sequences, Basic geometry, basic trigonometry, Parabola
Recommended or Required Reading	: textbook Balcı, M.Analiz I, Balcı Publishing, 2001 F. AYRES, Calculus Schaums Outline Series, 1979 D. ÇOKER, General Mathematics I, Detay Publishing
Planned Learning Activities and Teaching Methods	: Conferences, Applied Courses, Presentations, Seminars, Projects, Laboratory Practices (if necessary)
Recommended Optional Programme Components	: -

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to solve applications of algebra
- 2 - To be able to solve applications of Equations and inequalities
- 3 - To be able to solve applications of sequences
- 4 - To be able to solve applications of geometry
- 5 - To be able to solve applications of trigonometry
- 6 - To be able to solve applications of parabola



Weekly Course Contents

	Theoretical : Algebra
Week 1	Practice : Laboratory :
	Theoretical : Polynomial operations and polynomials
Week 2	Practice : Laboratory :
	Theoretical : Ratio and proportion concepts and applications
Week 3	Practice : Laboratory :
	Theoretical : Equations and Inequalities
Week 4	Practice : Laboratory :
	Theoretical : Inequality
Week 5	Practice : Laboratory :
	Theoretical : total symbol multiplication symbol sequences
Week 6	Practice : Laboratory :
	Theoretical : total symbol multiplication symbol sequences
Week 7	Practice : Laboratory :
	Theoretical : midterm-exam
Week 8	Practice : Laboratory :
	Theoretical : arithmetic sequence geometric sequence infinite geometric sequence Basic geometry polygons ring and circles
Week 9	Practice : Laboratory :
	Theoretical : geometric objects coordinate systems Conics
Week 10	Practice : Laboratory :
	Theoretical : basic trigonometry
Week 11	Practice : Laboratory :



Practice :

Laboratory :

Theoretical : The basic operations of Functions Types of functions

Week 13

Practice :

Laboratory :

Theoretical : Parabola and the graph

Week 14

Practice :

Laboratory :

Theoretical : overview

Week 15

Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Individual study after lecture	Yes	7	147,00
Total Hours			149,00
ECTS			5,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	2	0	0	0	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Technical Drawing I

General Description

Course Name	: Technical Drawing I
Course Code	: MRK 1105
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 1
ECTS	: 6
Name of Lecturer	: Instructor HASAN ZEKİ DİRİL
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The course aims to teach the designers to design fabrication components properly. With parallel to the developing technology nowadays, the course aims to solve the arising problems.(technical- manufacturing problems) with improving technical drawing knowledge.
Course Contents	: To be able to draw machine parts by hand and picture tools, handicraft improvement of students, to be able to make geometric drawings, understand basic drawing principles related to machine drawing, create the perspective of an object from its views and views from its perspective, to interpret from a drawing.
Recommended or Required Reading	: Technical Drawing I - II, Kemal Türkdemir, Bilal OFSET, Denizli, 2001.
Planned Learning Activities and Teaching Methods	: Lectures, Practical Courses, Presentation, Seminar, Project, Laboratory Applications (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to read technical drawing
- 2 - To be able to take section
- 3 - To be able to make measurement and give tolerance
- 4 - To be able to make standard mechanical parts drawing



Weekly Course Contents

Week 1	Theoretical : Description of the methodology of the lecture, the importance of technical drawing, usage of sketch line, standard text and line examples Practice : Laboratory :
Week 2	Theoretical : Geometric drawings. Geometric drawings with using ruler. Drawing internal and external tangents between two circles. Practice : Laboratory :
Week 3	Theoretical : Perspective views Practice : Laboratory :
Week 4	Theoretical : Perspective views Practice : Laboratory :
Week 5	Theoretical : Dimensions, symbols and tolerance Practice : Laboratory :
Week 6	Theoretical : Section view, half and full view samples Developments, intersection models, sample application Practice : Laboratory :
Week 7	Theoretical : Section view, half and full view samples Developments, intersection models, sample application Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Drawing of standard machine parts (Bolt, wedge, pin and perno) Practice : Laboratory :
Week 10	Theoretical : Assembly application I Practice : Laboratory :
Week 11	Theoretical : Assembly application II Practice : Laboratory :



Week 12	Theoretical : Combination of ball bearings, roller bearings, anti friction bearings, cylindrical bearings Practice : Laboratory :
Week 13	Theoretical : Disassemble applications Practice : Laboratory :
Week 14	Theoretical : Application of belt, pulley, gearwheel Practice : Laboratory :
Week 15	Theoretical : overview Practice : Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Final	No	1	2,00
Attending lectures	Yes	14	56,00
Application / Practice	Yes	14	56,00
Individual study before lecture	Yes	14	28,00
Individual study after lecture	Yes	14	28,00
Total Hours			172,00
ECTS			6,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	3	0	0	1	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Manufacturing Operations

General Description

Course Name	: Manufacturing Operations
Course Code	: MRK 1107
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 1
ECTS	: 5
Name of Lecturer	: Instructor Veysel TİMOÇİN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The course aims at providing Mechanical Engineering students with plastic forming methods containing bulk and sheet forming, their manufacturing phases, equipment, force and energy calculations, dies, interface conditions, materials behavior, faults and their remedies exposed during application
Course Contents	: Machining methods, basic manufacturing, basic turning, basic milling, basic grinding, basic modeling, basic measurement and control, marking.
Recommended or Required Reading	: Manufacturing Operations, İbrahim Nebiler, Manisa, 2008.
Planned Learning Activities and Teaching Methods	: Lectures, assignments, presentations.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to design a system, part or process to meet desired requirements
- 2 - To be able to determine, identify and solve engineering problems
- 3 - To be able to use techniques, skills and modern tools necessary for engineering applications
- 4 - To be able to carry out a designed process

Weekly Course Contents

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Week 1	Theoretical : Definitions, Stress-Strain Relations Practice : Laboratory :
Week 2	Theoretical : Plastic Deformation Factors Practice : Laboratory :
Week 3	Theoretical : Cold and Heat Strain, recrystallisation Practice : Laboratory :
Week 4	Theoretical : Damage in Strain Practice : Laboratory :
Week 5	Theoretical : Internal stresses, Yield Criteria Practice : Laboratory :
Week 6	Theoretical : Hammer, hammering and pressing machine Rolling Practice : Laboratory :
Week 7	Theoretical : Hammer, hammering and pressing machine Rolling Practice : Laboratory :
Week 8	Theoretical : Midterm Exam Practice : Laboratory :
Week 9	Theoretical : Extrusion Practice : Laboratory :
Week 10	Theoretical : Rod and Wire Drawing Practice : Laboratory :
Week 11	Theoretical : Processing Methods sheets cutting, bending Practice : Laboratory :
Week 12	Theoretical : Plates Processing Methods Deep Drawing, Spinning, Stretching Practice : Laboratory :



Theoretical : Examples of Processing Methods plates
 Week 13 Practice :
 Laboratory :

Theoretical : Pipe Production
 Week 14 Practice :
 Laboratory :

Theoretical : Overview
 Week 15 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Assignment	Yes	3	15,00
Quizzes	Yes	3	3,00
Preparation for final	Yes	1	5,00
Attending lectures	Yes	10	50,00
Individual study before lecture	Yes	10	50,00
Individual study after lecture	Yes	10	10,00
Preparation for midterm	Yes	1	5,00
Total Hours			140,00
ECTS			5,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	3	0	0	1	0	2	2	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Material Technology I

General Description

Course Name	: Material Technology I
Course Code	: MRK 1109
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Dr. Safiye İPEK AYVAZ
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The aim of this course is to comprehend that there are material production methods to meet the needs of people and industry which are necessary for manufacturing technicians or that the properties of manufactured materials are changeable. To be able to recognize the types of materials used in the industrial field, to comprehend the basic properties, to be able to choose the most suitable materials for design and application areas. To be able to classify materials, to know their internal structures, to interpret Fe-C equilibrium diagram, to have knowledge about steel hardening and standards.
Course Contents	: Materials used in the technical field, Atomic structure and bonding forces, crystal structures, Solidification - melting behavior, Iron - Carbon balance diagram, Destructive tests (Hardness measurement methods, Tensile test, Compression test, Bending test, Notch impact test, Fatigue test), Composites , Non-destructive testing methods (Penetrating liquid inspection, Magnetic powder test, Eddy current inspection, Radiography, Radioscopy, Ultrasonic inspection), Heat treatment methods, Surface hardening methods, Corrosion, Corrosion protection.
Recommended or Required Reading	: Materials Science and Engineering, William D. Callister, Jr., David G. Rethwisch, Nobel Publications, Ankara, 2013.
Planned Learning Activities and Teaching Methods	: Lectures, Practical Courses, Presentation, Seminar, Project, Laboratory Applications (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

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- 2 - To be able to explain hot and cold forming and shaping processes and the changes in material properties as a result.
- 3 - To be able to understand the general properties of composite materials
- 4 - To be able to understand industrial polymeric materials used in the determination of metals as an alternative.
- 5 - To be able to explain the formation of corrosion and methods of prevention.

Weekly Course Contents

Week 1	Theoretical : The materials used in the technical field. Practice : Laboratory :
Week 2	Theoretical : Atomic structure and bonding forces, the crystal structures. Practice : Laboratory :
Week 3	Theoretical : Solidification - the melting behaviour. Practice : Laboratory :
Week 4	Theoretical : Iron - Carbon equilibrium diagram. Practice : Laboratory :
Week 5	Theoretical : Destructive testing (Hardness measurement methods, Tensile test, Compression test). Practice : Laboratory :
Week 6	Theoretical : Destructive testing (Bending test, The notch impact test, Fatigue test). Polymers. Practice : Laboratory :
Week 7	Theoretical : Destructive testing (Bending test, The notch impact test, Fatigue test). Polymers. Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Composites. Non-destructive testing methods (Liquid penetrant inspection, Magnetic powder testing, Eddy currents inspection). Practice : Laboratory :
Week 10	Theoretical : Non-destructive testing methods (Radiography, Radioscopy, Ultrasonic inspection). Practice : Laboratory :



Practice :

Laboratory :

Theoretical : The heat treatment methods.

Week 11

Practice :

Laboratory :

Theoretical : Methods of surface hardening.

Week 12

Practice :

Laboratory :

Theoretical : Corrosion.

Week 13

Practice :

Laboratory :

Theoretical : Prevention of corrosion.

Week 14

Practice :

Laboratory :

Theoretical : Overview

Week 15

Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Attending lectures	Yes	10	40,00
Application / Practice	Yes	7	14,00
Laboratory	Yes	7	14,00
Individual study before lecture	Yes	10	10,00
Individual study after lecture	Yes	10	10,00
Total Hours			90,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	2	0	0	0	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0

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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Information and Communication Technology

General Description

Course Name	: Information and Communication Technology
Course Code	: MRK 1111
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Mustafa KIRMAN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: This course is concerned with the development of competencies kazandırılmasını amaçlamaktır itself using computational facilities.
Course Contents	: Internet access and Internet browser, e-mail management, forums, graphics, presentation preparation, promotional materials, preparation, operation table, formulas and functions, web-based learning, personal web site development
Recommended or Required Reading	: Computer 2 Lecturer İsmail Yellow-Omer Bagci, Internet Programming 1-Turgut Yasar Abu Bakr Özseven, Computer and Internet use Cebi Honey Hasan
Planned Learning Activities and Teaching Methods	: The narrative techniques of teaching methods, showing Motivations, group work, practical work, research, and individual teaching methods and techniques can be applied
Recommended Optional Programme Components	: computer lab

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to Communicate on the Internet
- 2 - To be able to work on Excell
- 3 - Tobe able to prepare a presentation with Powerpoint
- 4 - To be able to work on Word

Weekly Course Contents

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması <https://turkiye.gov.tr/ebd?eK=4049&eD=BSCEDFRSVZ&eS=807403> adresinden yapılabilir.



Week 1	Theoretical : Internet and web browser Practice : Laboratory :
Week 2	Theoretical : Electronic mail management Practice : Laboratory :
Week 3	Theoretical : Newsgroups / Forums Practice : Laboratory :
Week 4	Theoretical : Excel Practice : Laboratory :
Week 5	Theoretical : Formulas and functions Practice : Laboratory :
Week 6	Theoretical : graphics Powerpoint Practice : Laboratory :
Week 7	Theoretical : graphics Powerpoint Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : powerpointle presentation preparation Practice : Laboratory :
Week 10	Theoretical : personal web site development Practice : Laboratory :
Week 11	Theoretical : web-based learning Practice : Laboratory :
Week 12	Theoretical : resume word processing program Practice : Laboratory :



Week 13 Theoretical : Introductory materials, preparation
 Practice :
 Laboratory :

Week 14 Theoretical : preparation for job interview
 Practice :
 Laboratory :

Week 15 Theoretical : Overview
 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Application / Practice	Yes	8	80,00
Research presentation	Yes	1	10,00
Total Hours			92,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	2	2	0	0	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Measurement and Control

General Description

Course Name	: Measurement and Control
Course Code	: MRK 1113
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Mustafa KIRMAN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: 1. To define measurement and control devices using in advanced measurement and control methods. 2. To be able to make control processes by advanced measurement and control methods.
Course Contents	: Measurement and control, measuring systems, calipers and micrometers, surface control, visors, gauges, measuring instruments (linearity, flatness, perpendicularity, roughness and diameter) and shape and size tolerance control, comparators, indicators, passameters, passimeters, surface roughness, hardness , Pressure, temperature, strain gauge measurement, quality and control.
Recommended or Required Reading	: Measurement Technique, Prof. Dr. Osman F. Genceli, Birsen Publishing House, Istanbul, 1994
Planned Learning Activities and Teaching Methods	: Lectures, Practical Courses, Presentation, Seminar, Project, Laboratory Applications (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to comprehend comparative measurement techniques of machine parts.
- 2 - To be able to determine the tolerances of the shape and position of machine parts according to the specific reference.
- 3 - To be able to decide on appropriate tolerances and gauges.
- 4 - To be able to determine whether the machined surfaces are within the specified geometric irregularity



5 - To be able to adjust tooling, bonding and tooling with learned measurement and control techniques.

6 - To be able to measure the size and profile of the teeth.

Weekly Course Contents

Week 1	Theoretical : Various Calipers sensibilities computation and measurement techniques. Practice : Comparative measurements with various calipers. Laboratory :
Week 2	Theoretical : Measuring techniques of various micrometer . Practice : Comparative measurements with the thickness and depth micrometers. Laboratory :
Week 3	Theoretical : Working principles of mechanical angle measurement tools and systems. Practice : Usage of workshop-laboratory environment. Laboratory :
Week 4	Theoretical : Working principles of optical angle measurement tools and angle measuring. Practice : Using an optical projector. Laboratory :
Week 5	Theoretical : Controlling of surface roughness of finished surfaces. Practice : Measuring of surface roughness. Laboratory :
Week 6	Theoretical : Measuring of screw uptooth diameter wit micrometers. Measuring dimensions of gear for movement and force transportation with minimum friction and noise. Practice : Laboratory :
Week 7	Theoretical : Measuring of screw uptooth diameter wit micrometers. Measuring dimensions of gear for movement and force transportation with minimum friction and noise. Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Introduction to thickness and limit gauges,gauge tolerances. Inroduction to light wave lengths and interference event. Practice : Laboratory :
Week 10	Theoretical : Required measurements to determine of shape and position. Calculation of total (cumulative) shape and position defaults by statistical methods. Practice : Laboratory :



	Theoretical : Limits and exercise systems. Manufacturing principles of limit gauges.
Week 11	Practice :
	Laboratory :
	Theoretical : Usage of tolerance rulers.
Week 12	Practice :
	Laboratory :
	Theoretical : Relation between tolerance degrees and manufacturing methods of machine parts.
Week 13	Practice :
	Laboratory :
	Theoretical : Right settings of machine tools for manufacturing of good quality parts.
Week 14	Practice :
	Laboratory :
	Theoretical : Overview
Week 15	Practice :
	Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Application / Practice	Yes	14	70,00
Laboratory	Yes	5	15,00
Workshop	Yes	3	9,00
Total Hours			96,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	2	0	0	0	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Occupational Ethics

General Description

Course Name	: Occupational Ethics
Course Code	: MRK 1201
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 2
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Gain skills to the students, working in accordance with ethical rules in business life
Course Contents	: Basic elements of communication, communication in terms of functioning, ability to communicate within organization and group, differences in status obstructing or obstructing communication, constraints due to language and expression difficulties and studies for elimination of them. The importance of written, verbal and non-verbal communication and the techniques used. Ethical and professional ethic linkages, examples of professional ethics.
Recommended or Required Reading	: General and Technical Communication, İrfan Mısırlı, Detay Publishing, Ankara, 2004.
Planned Learning Activities and Teaching Methods	: Lectures, class discussions and applications.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to have the knowledge and skills to provide suitable environment for work ethics at the workplace.
- 2 - To be able to develop positive ideas about the concept of ethics.
- 3 - To be able to understand the principles of professional ethics correctly.
- 4 - To be able to apply the business ethics required by the profession in the workplace environment.

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması <https://turkiye.gov.tr/ebd?eK=4049&eD=BSCEDFRSVZ&eS=807403> adresinden yapılabilir.



Weekly Course Contents

Week 1	Theoretical : Definition of ethics Practice : Laboratory :
Week 2	Theoretical : Moral Development process Practice : Laboratory :
Week 3	Theoretical : Ethical rules Practice : Laboratory :
Week 4	Theoretical : Ethical systems: Intended result Etic Rule of ethics Practice : Laboratory :
Week 5	Theoretical : Ethical systems: Social contract ethics Personal Ethics Social life ethic Practice : Laboratory :
Week 6	Theoretical : Relationship between ethic and society Consequences of acting in accordance with Ethical Values Practice : Laboratory :
Week 7	Theoretical : Relationship between ethic and society Consequences of acting in accordance with Ethical Values Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Ethical questioning Social corruption and varieties Practice : Laboratory :
Week 10	Theoretical : The concept of professional ethics Practice : Laboratory :
Week 11	Theoretical : Professional Ethics Principles: Accuracy legality Reliability Commitment to the Job Practice : Laboratory :



Theoretical : Ethical and non-ethical issues in business life
 Week 12 Practice :
 Laboratory :

Theoretical : Professional Corruption
 Week 13 Practice :
 Laboratory :

Theoretical : Consequences of appropriate behaviors in Work Ethics
 Week 14 Practice :
 Laboratory :

Theoretical : Overview
 Week 15 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Assignment	Yes	1	1,00
Final	No	1	1,00
Individual study after lecture	Yes	10	50,00
Total Hours			53,00
ECTS			2,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	5	5	4	3	4	4	3	3	5	4	3	4	4
2	4	5	4	4	4	5	4	4	4	4	4	3	4
3	4	4	3	5	3	4	3	5	4	4	3	3	5
4	5	5	5	5	5	3	5	5	5	4	5	4	3



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing and Construction Quality Management

General Description

Course Name	: Quality Management
Course Code	: MRK 1211
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 2
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The importance of standards and quality improvement efforts for businesses and provide knowledge of professional standards
Course Contents	: General Principles of Management and Management Functions / General Principles of Management Change (Improvement) / Purpose of Change / Reasons for Change / What is Quality? / Twelve Principles of Deming for Improving Quality by Implementing Total Quality Management / Ten Steps for Success and Quality in Organizations Ten Steps Suggested in the Planning of Total Quality The Definition and Objectives of Quality Circles / Basic Principles of Quality Circles / Quality Circles Organizational Structure / Quality Usage Areas / Total Quality Management in Education / Basic Elements of Total Quality Management / Basic Principles / Strategic Quality Management / Swot Analysis / Quality Cost and Retrieval / Inspection and Evaluation / Evaluation Tools / Method / ISO 9000 Quality Assurance System / ISO9000 Standards / ISO 9000: 1994 Standards and Guidelines / ISO 9001: 2000 Approach.
Recommended or Required Reading	: Total Quality Method, Prof. Dr. Hasan Şimşek, Seçkin Yayıncılık, İstanbul, 2013
Planned Learning Activities and Teaching Methods	: Conferences, Applied Courses, Presentations, Seminars, Projects - Face to Face
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

1 - To be able to understand the importance and benefits of standard and standardization

2 - To be able to understand the importance of professional standards

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulama: <https://turkiye.gov.tr/evd?ek=4049&ed=BSCEDFRSV2&cs=807403> adresinden yapılabilir.



- 3 - To be able to understand the consumer perceptions of quality
- 4 - To be able to understand the historical development of quality
- 5 - To be able to understand the relationship between quality and cost
- 6 - To be able to understand the CE marking

Weekly Course Contents

Week 1	Theoretical : Standard and standardization concepts, the role of TSE Practice : Laboratory :
Week 2	Theoretical : Benefits of Standardization Practice : Laboratory :
Week 3	Theoretical : Basic concepts of quality, quality of goods and services, measuring quality Practice : Laboratory :
Week 4	Theoretical : Consumer perception of quality Practice : Laboratory :
Week 5	Theoretical : Historical development of quality: Inspection and Quality Control Practice : Laboratory :
Week 6	Theoretical : Historical development of quality: Quality assurance and total quality Practice : Laboratory :
Week 7	Theoretical : Historical development of quality: Quality assurance and total quality Practice : Laboratory :
Week 8	Theoretical : midterm exam Practice : Laboratory :
Week 9	Theoretical : Quality cost relationship Practice : Laboratory :
Week 10	Theoretical : Internal and External Customer, Customer Satisfaction Practice : Laboratory :



Week 11 Theoretical : Total quality management tools and goals
 Practice :
 Laboratory :

Week 12 Theoretical : Elements of total quality management
 Practice :
 Laboratory :

Week 13 Theoretical : Professional standards
 Practice :
 Laboratory :

Week 14 Theoretical : The CE mark
 Practice :
 Laboratory :

Week 15 Theoretical : An overview
 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	10,00
Final	No	1	10,00
Assignment	Yes	1	10,00
Individual study before lecture	Yes	5	25,00
Total Hours			55,00
ECTS			2,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	3	0	0	0	0	0	1	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Strength

General Description

Course Name	: Strength
Course Code	: MRK 1102
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Assoc. Prof. Dr. Etem KÖSE
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The purpose of this course; to understand the basic strength encountered in the design details, sizing the elements of the machine to apply the principles of strength and control to ensure the accounts
Course Contents	: Introduction to strength, basic concepts, elements under normal force, elements subjected to torsional moment, elements subjected to bending moment, elements subjected to combined strength states, vertically loaded elements, elements under buckling loads.
Recommended or Required Reading	: Strength, Mustafa Savcı, Birsen Publishing House, Istanbul, 1984.
Planned Learning Activities and Teaching Methods	: Lectures, Practical Courses, Presentation, Seminar, Project, Laboratory Applications (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to calculate the stresses and strains in simple structures subjected to static loadings by tension, compression, shear
- 2 - To be able to calculate the stresses and strains in simple structures subjected to static loadings by torsion, and bending
- 3 - To be able to calculate the stresses and strains in simple structures subjected to static loadings by composite loads



with respect to designing structures to prevent failure

Weekly Course Contents

Week 1	Theoretical : Elements under the influence of normal force Practice : Laboratory :
Week 2	Theoretical : Elements under the influence of normal force Practice : Laboratory :
Week 3	Theoretical : Elements under the influence of normal force Practice : Laboratory :
Week 4	Theoretical : Elements under the influence of the torsional moment Practice : Laboratory :
Week 5	Theoretical : Elements under the influence of the torsional moment Practice : Laboratory :
Week 6	Theoretical : Elements under the influence of the torsional moment Elements under the influence of bending moment Practice : Laboratory :
Week 7	Theoretical : Elements under the influence of the torsional moment Elements under the influence of bending moment Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Elements under the influence of bending moment Practice : Laboratory :
Week 10	Theoretical : Elements under the influence of the combined strength Practice : Laboratory :
Week 11	Theoretical : axially loaded bars Practice :



Laboratory :

Theoretical : axially loaded bars

Week 12

Practice :

Laboratory :

Theoretical : Buckling loads under the elements

Week 13

Practice :

Laboratory :

Theoretical : Buckling loads under the elements

Week 14

Practice :

Laboratory :

Theoretical : Overview

Week 15

Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Individual study after lecture	Yes	8	32,00
Assignment	Yes	4	16,00
Individual study before lecture	Yes	8	32,00
Total Hours			82,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	2	0	0	1	0	4	4	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Computer Aided Drawing

General Description

Course Name	: Computer Aided Drawing
Course Code	: MRK 1104
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 1
ECTS	: 5
Name of Lecturer	: Instructor Mustafa KIRMAN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: To be able to transfer and assemble the three dimensional parts together with the required tolerance values to the technical drawing environment.
Course Contents	: Using screen editing and drawing help commands, selecting CAD software run options, doing screen and drawing settings and turning off CAD software, drawing by using basic drawing commands and using coordinate systems, doing technical drawings by using drawing commands and adding text to drawings, being able to use edit commands, changing the properties of drawing elements, copying drawing elements, doing measurement settings, changing measurements, adding surface marking, and adding tolerance, being able to do (two-dimensional) data transfer between CAD softwares.
Recommended or Required Reading	: Solidworks, Haluk Tatar, Pusula Publishing, Istanbul, 2013.
Planned Learning Activities and Teaching Methods	: Courses, labs and application projects.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to make three-dimensional drawing on the computer
- 2 - To Be able to transfer drawing to technical drawing
- 3 - To be able to make assembly



Weekly Course Contents

Week 1	Theoretical : Recognizing Autocad 2007 and to prepare working environment to draw Practice : Application of the lecture content Laboratory :
Week 2	Theoretical : Line command and dimensioning Practice : Application of the lecture content Laboratory :
Week 3	Theoretical : Direction and angle commands Practice : Application of the lecture content Laboratory :
Week 4	Theoretical : Circle, delete, copy, move, mirror, offset, rotate, crop, fillet commands Practice : Application of the lecture content Laboratory :
Week 5	Theoretical : Formatting and layers Practice : Application of the lecture content Laboratory :
Week 6	Theoretical : Arc and spline commands Practice : Application of the lecture content Laboratory :
Week 7	Theoretical : Hatch, scale, extension and chamfering Practice : Application of the lecture content Laboratory :
Week 8	Theoretical : Midterm exam Practice : Midterm exam Laboratory :
Week 9	Theoretical : Drawing applications Practice : Drawing applications Laboratory :
Week 10	Theoretical : Drawing applications Practice : Drawing applications Laboratory :
Week 11	Theoretical : Drawing applications Practice : Drawing applications Laboratory :



Week 12 Theoretical : Drawing applications
 Practice : Drawing applications
 Laboratory :

Week 13 Theoretical : Drawing applications
 Practice : Drawing applications
 Laboratory :

Week 14 Theoretical : Drawing applications
 Practice : Drawing applications
 Laboratory :

Week 15 Theoretical : overview
 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Application / Practice	Yes	14	42,00
Attending lectures	Yes	14	42,00
Individual study before lecture	Yes	14	28,00
Individual study after lecture	Yes	14	28,00
Preparation for midterm	Yes	1	3,00
Preparation for final	Yes	1	4,00
Total Hours			149,00
ECTS			5,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	1	3	1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Machine Elements I

General Description

Course Name	: Machine Elements I
Course Code	: MRK 1112
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: To understand the basic static and strength information for the design face, according to classify the elements of the machine, machine components and calculate the strength to choose the appropriate elements.
Course Contents	: Basic static and strength information, classification of machine elements according to their properties, calculation of strength of machine elements and appropriate element selection, non-removable fasteners, welded fasteners, riveted fasteners, removable fasteners, screw fasteners, cam fasteners, perforated and pinned fasteners, bearing elements
Recommended or Required Reading	: Mechanical Science and Elements, Fatih C. Babalık, Kadir Çavdar, Dora Publishing, Istanbul, 2011.
Planned Learning Activities and Teaching Methods	: Conferences, Applied Courses, Presentations, Seminars, Projects, Laboratory Applications (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to recognize and use unit systems.
- 2 - To be able to define stretching and compression stress.
- 3 - To be able to classify machine elements.
- 4 - To be able to select materials for machine tools.
- 5 - To be able to define Solder joints - bonding bonds.



6 - To be able to define welds-rivets.

7 - To be able to define bolt joints - pins and punches.

8 - To be able to define shaft-narvel joints.

Weekly Course Contents

Week 1	Theoretical : Unit systems. Basic principles in machine design Practice : Laboratory :
Week 2	Theoretical : Standards. Tolerances and exceeding Practice : Laboratory :
Week 3	Theoretical : Strength calculations of machine elements Practice : Laboratory :
Week 4	Theoretical : Strength calculations of machine elements Practice : Laboratory :
Week 5	Theoretical : Solder bonds. Adhesion bonds Practice : Laboratory :
Week 6	Theoretical : Welding bonds. Rivet bonds Bolt (pin) bonds. Pins and bolts (pernos) Practice : Laboratory :
Week 7	Theoretical : Welding bonds. Rivet bonds Bolt (pin) bonds. Pins and bolts (pernos) Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Spindle. Hub (core) bonds Intermediate Exam Practice : Laboratory :
Week 10	Theoretical : Springs. Axis. Spindles Practice : Laboratory :
Week 11	Theoretical : Tribology (Friction. Greases (oils) and greasing (oiling)) Practice : Laboratory :



Practice :

Laboratory :

Theoretical : Sliding bearing. Rolling element (Anti friction) bearing

Week 12 Practice :

Laboratory :

Theoretical : Clutches. Belt tambour mechanisms

Week 13 Practice :

Laboratory :

Theoretical : Cogwheels

Week 14 Practice :

Laboratory :

Theoretical : Overview

Week 15 Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Individual study after lecture	Yes	8	48,00
Individual study before lecture	Yes	8	48,00
Preparation for midterm	Yes	0	0,00
Total Hours			98,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	2	0	1	1	0	2	1	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Technical Drawing II

General Description

Course Name	: Technical Drawing II
Course Code	: MRK 1132
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 1
ECTS	: 5
Name of Lecturer	: Instructor HASAN ZEKİ DİRİL
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The course aims to teach the designers to design fabrication components properly. With parallel to the developing technology nowadays, the course aims to solve the arising problems.(technical- manufacturing problems) with improving technical drawing knowledge.
Course Contents	: Display of standard machine parts required for technicians, learning of dimensional values, creating and reading of montage drawings.
Recommended or Required Reading	: Technical Drawing I - II, Kemal Türkdemir, Bilal OFSET, Denizli, 2001.
Planned Learning Activities and Teaching Methods	: Lectures, Practical Courses, Presentation, Seminar, Project, Laboratory Applications (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to read technical drawing
- 2 - To be able to take section
- 3 - To be able to draw standart mechanical parts
- 4 - To be able to combine multiple machine parts with assembly after drawing .
- 5 - To be able to demonstrate desired operations like Measurement of machine parts, tolerance, surface marking on the drawing



Weekly Course Contents

Week 1	Theoretical : Description of the methodology of the lecture, the importance of technical drawing, usage of sketch line, standard text and line examples Practice : Laboratory :
Week 2	Theoretical : Geometric drawings. Geometric drawings with using ruler. Drawing internal and external tangents between two circles. Practice : Laboratory :
Week 3	Theoretical : Perspective views Practice : Laboratory :
Week 4	Theoretical : Perspective views Practice : Laboratory :
Week 5	Theoretical : Dimensions, symbols and tolerance Practice : Laboratory :
Week 6	Theoretical : Section view, half and full view samples Developments, intersection models, sample application Practice : Laboratory :
Week 7	Theoretical : Section view, half and full view samples Developments, intersection models, sample application Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Drawing of standard machine parts (Bolt, wedge, pin and perno) Practice : Laboratory :
Week 10	Theoretical : Assembly application I Practice : Laboratory :
Week 11	Theoretical : Assembly application II Practice : Laboratory :



Week 12	Theoretical : Combination of ball bearings, roller bearings, anti friction bearings, cylindrical bearings Practice : Laboratory :
Week 13	Theoretical : Disassemble applications Practice : Laboratory :
Week 14	Theoretical : Application of belt, pulley, gearwheel Practice : Laboratory :
Week 15	Theoretical : overview Practice : Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Final	No	1	2,00
Attending lectures	Yes	14	56,00
Application / Practice	Yes	14	56,00
Individual study before lecture	Yes	10	20,00
Individual study after lecture	Yes	10	20,00
Total Hours			156,00
ECTS			5,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	3	0	0	1	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Mold and Apparatus Design

General Description

Course Name	: Mold and Apparatus Design
Course Code	: MRK 1142
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 1
Laboratory Credits	: 0
Practice Credits	: 1
ECTS	: 3
Name of Lecturer	: Instructor Veysel TİMOÇİN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: To be able to make the points to be considered in mold and apparatus design be comprehended.
Course Contents	: Sheet Metal Molds / Plastic Molds / Other Shaping Methods / Apparatus Design.
Recommended or Required Reading	: Sheet Metal Molding, İbrahim Uzun, Yakup Erişkin, MEB Printhouse, Ankara, 2012.
Planned Learning Activities and Teaching Methods	: The course will be presented visually and the applications of the topics shown in the class will be demonstrated in the lab
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to do the unfolding calculation of the sheet metal
- 2 - To be able to design the necessary tool for the work piece.
- 3 - To be able to make mold desing
- 4 - To be able to use molding and tooling apparatus.

Weekly Course Contents

Week 1 : Theoretical : Mounting apparatus Simple level calibration procedures

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması <https://turkiye.gov.tr/ebd?eK=4049&eD=BSCEDFRSVZ&eS=807403> adresinden yapılabilir.



Practice :

Laboratory :

Week 2 Theoretical : Ability to calculate pressure Types of tools for various machine tools
Practice :
Laboratory :

Week 3 Theoretical : Usage of various machine tools Usage of equipment and tools
Practice :
Laboratory :

Week 4 Theoretical : Ability to use hand tools Ability to provide hand-eye coordination
Practice :
Laboratory :

Week 5 Theoretical : Heat treatment techniques Mold practice operations
Practice :
Laboratory :

Week 6 Theoretical : Mold types Ability to make mold and press settings
Practice :
Laboratory :

Week 7 Theoretical : Mold types Ability to make mold and press settings
Practice :
Laboratory :

Week 8 Theoretical : Mid-term Exam
Practice :
Laboratory :

Week 9 Theoretical : Methods of attaching molds and tooling Usage of molds and tooling
Practice :
Laboratory :

Week 10 Theoretical : Preparation and usage of cutting fluids and oils Control and application techniques
Practice :
Laboratory :

Week 11 Theoretical : General characteristics of used materials and products Defect detection and removal methods
Practice :
Laboratory :

Week 12 Theoretical : Inspection and testing techniques Ability to use NC / CNC machining programs
Practice :
Laboratory :



	Theoretical : Measurement and evaluation methods Dismantling methods
Week 13	Practice :
	Laboratory :
	Theoretical : Basic geometry operations Basic material properties
Week 14	Practice :
	Laboratory :
	Theoretical : An Overview
Week 15	Practice :
	Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Individual study before lecture	Yes	15	30,00
Individual study after lecture	Yes	15	30,00
Preparation for midterm	Yes	10	10,00
Preparation for final	Yes	10	10,00
Total Hours			82,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	2	3	3	0	3	2	0	0	0	3	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Material Technology II

General Description

Course Name	: Material Technology II
Course Code	: MRK 1152
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Mustafa KIRMAN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: To know the different versions of materials used in the industrial field, understand the basic features, To give an ability to choose the most suitable materials for the design.
Course Contents	: Material examinations, non-ferrous metals, destructive testing, forming operations, metallography, materials used on the technical field.
Recommended or Required Reading	: Materials Science and Engineering, William D. Callister, Jr., David G. Rethwisch, Nobel Publications, Ankara, 2013.
Planned Learning Activities and Teaching Methods	: Lectures, Practical Courses, Presentation, Seminar, Project, Laboratory Applications (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to understand the methods of destructive examination of materials.
- 2 - To be able to explain hot and cold forming and shaping processes and the changes in material properties as a result.
- 3 - To be able to understand the general properties of composite materials
- 4 - To be able to understand industrial polymeric materials used in the determination of metals as an alternative.
- 5 - To be able to explain the formation of corrosion and methods of prevention.



Weekly Course Contents

Week 1	Theoretical : The materials used in the technical field. Practice : Laboratory :
Week 2	Theoretical : Atomic structure and bonding forces, the crystal structures. Practice : Laboratory :
Week 3	Theoretical : Solidification - the melting behaviour. Practice : Laboratory :
Week 4	Theoretical : Iron - Carbon equilibrium diagram. Practice : Laboratory :
Week 5	Theoretical : Destructive testing (Hardness measurement methods, Tensile test, Compression test). Practice : Laboratory :
Week 6	Theoretical : Destructive testing (Bending test, The notch impact test, Fatigue test). Polymers. Practice : Laboratory :
Week 7	Theoretical : Destructive testing (Bending test, The notch impact test, Fatigue test). Polymers. Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Composites. Non-destructive testing methods (Liquid penetrant inspection, Magnetic powder testing, Eddy currents inspection). Practice : Laboratory :
Week 10	Theoretical : Non-destructive testing methods (Radiography, Radioscopy, Ultrasonic inspection). Practice : Laboratory :
Week 11	Theoretical : The heat treatment methods. Practice : Laboratory :



Theoretical : Methods of surface hardening.
 Week 12 Practice :
 Laboratory :

Theoretical : Corrosion.
 Week 13 Practice :
 Laboratory :

Theoretical : Prevention of corrosion.
 Week 14 Practice :
 Laboratory :

Theoretical : Overview
 Week 15 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Attending lectures	Yes	10	40,00
Application / Practice	Yes	7	14,00
Laboratory	Yes	7	14,00
Individual study before lecture	Yes	10	10,00
Individual study after lecture	Yes	10	10,00
Total Hours			90,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	1	0	0	0	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Hydraulics Pneumatic

General Description

Course Name	: Hydraulics Pneumatic
Course Code	: MRK 1162
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Comprehend basic concepts of fluid mechanics, hydrostatics and hydrodynamics. Comprehend operational principles of hydraulic and pneumatic control systems, and set up these control circuits. Set up a hydraulic, electro-hydraulic and pneumatic, electro-pneumatic circuit due to the desired criteria. Maintenance and repair of machine tools to gain relevant qualifications.
Course Contents	: Hydraulic basic concepts, hydraulic jacks, hydraulic presses, hydraulic pumps, hydraulic circuit elements and standard symbols, circuit design using hydraulic circuit elements, hydraulic circuit design, pneumatic basic concepts, air conditioning unit and air preparation, compressors and the source of compressed air, pneumatic circuit Elements and standard symbols, creating circuits using pneumatic circuit elements, pneumatic circuit design.
Recommended or Required Reading	: Hydraulic and Pneumatic, Faruk Eagle, MODÜL Technical Training and Service, Manisa, 2003.
Planned Learning Activities and Teaching Methods	: Lectures, Practical Courses, Presentation, Project, Laboratory Applications
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to draw a hydraulic circuit diagram, to understand the basic elements
- 2 - To be able to explain the workings of Hydraulic work machines and vans, grinding, injection machines and so on from their drawn circuit diagrams
- 3 - To be able to recognize electro-hydraulic elements and explain their operation with examples

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması <https://turkiye.gov.tr/ebd?ek=4049&ed=BSCEDFRSVZ&es=807403> adresinden yapılabilir.



- 4 - To be able to know possible defects in hydraulic systems and explain the solution methods of defect
- 5 - To be able to know the basic elements of pneumatic system and explain their working systems
- 6 - To be able to symbolize a pneumatic circuit diagram to show basic elements such as compressor, relief valves, control valves
- 7 - To be able to know the probable failures in pneumatic systems and explain the solution methods of failures
- 8 - To be able to recognize electro-pneumatic elements and explain their work with examples

Weekly Course Contents

Week 1	Theoretical : Understanding the hydraulic circuit elements Practice : Understanding the hydraulic circuit elements Laboratory : Understanding the hydraulic circuit elements
Week 2	Theoretical : Hydraulic circuit diagram to create Practice : Hydraulic circuit diagram to create Laboratory : Hydraulic circuit diagram to create
Week 3	Theoretical : Hydraulic circuit diagram to create Practice : Hydraulic circuit diagram to create Laboratory : Hydraulic and electro-hydraulic circuit diagram to create
Week 4	Theoretical : Hydraulic circuit diagram to create Practice : Hydraulic circuit diagram to create Laboratory : Hydraulic circuit diagram to create
Week 5	Theoretical : Hydraulic circuit diagram to create Practice : Hydraulic circuit diagram to create Laboratory : Hydraulic circuit diagram to create
Week 6	Theoretical : Understanding the pneumatic circuit elements Pneumatic circuit diagram to create Practice : Understanding the pneumatic circuit elements Pneumatic circuit diagram to create Laboratory : Understanding the pneumatic circuit elements Pneumatic circuit diagram to create
Week 7	Theoretical : Understanding the pneumatic circuit elements Pneumatic circuit diagram to create Practice : Understanding the pneumatic circuit elements Pneumatic circuit diagram to create Laboratory : Understanding the pneumatic circuit elements Pneumatic circuit diagram to create
Week 8	Theoretical : Midterm-exam Practice : Midterm-exam Laboratory : Midterm-exam

Week 9 Theoretical : Electro-pneumatic circuit diagram to create

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması <https://turkiye.gov.tr/elektronik-imza> adresinden yapılabilir.



Laboratory : Electro-pneumatic circuit diagram to create

Theoretical : Detecting failures in pneumatic systems
 Week 10 Practice : Detecting failures in pneumatic systems
 Laboratory : Detecting failures in pneumatic systems

Theoretical : Resolve pneumatic failures
 Week 11 Practice : Resolve pneumatic failures
 Laboratory : Resolve pneumatic failures

Theoretical : Make periodic checks of systems
 Week 12 Practice : Make periodic checks of systems
 Laboratory : Make periodic checks of systems

Theoretical : Periodic maintenance of the systems do
 Week 13 Practice : Periodic maintenance of the systems do
 Laboratory : Periodic maintenance of the systems do

Theoretical : To repair a defective machine
 Week 14 Practice : To repair a defective machine
 Laboratory : To repair a defective machine

Theoretical : Overview
 Week 15 Practice : Overview
 Laboratory : Overview

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Individual study before lecture	Yes	4	16,00
Individual study after lecture	Yes	8	32,00
Application / Practice	Yes	8	32,00
Total Hours			82,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	1	0	0	0	4	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0

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4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Entrepreneurship

General Description

Course Name	: Entrepreneurship
Course Code	: MRK 1020
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The course, which starts with the handling of entrepreneurship in economics literature and a short history, covers the process of turning a business idea into a successful business from start to finish. In the course, in which the characteristics of the entrepreneur are examined, it is aimed to raise awareness about the different aspects and dimensions of the entrepreneurship phenomenon, to examine the infrastructure conditions that lead to the formation and development of entrepreneurship, and to teach how business plans are prepared. It aims to identify the areas that need to be developed by recognizing the individual's own entrepreneurial capacity.
Course Contents	: Throughout the course, it is aimed to understand how to start a new business and the critical decisions and managerial requirements to be made once the business is established.
Recommended or Required Reading	: Girişimciliğin Altın Kuralları (Türkiye İçin Uzman Önerileri)" Ertuğrul Belen, Taylan Demirkaya "Girişimcilik ve Küçük İşletme Yönetimi" Yrd. Doç. Dr. Orhan Küçük Entrepreneurship textbooks and notes
Planned Learning Activities and Teaching Methods	: Question and answer, Group work, Lecture, Presentation,
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - At the end of the course, the student will be able to define how a good entrepreneur should be and the main personality traits of an entrepreneur.

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2 - At the end of the course, the student will be able to evaluate how an entrepreneur acts when making a new business decision.

3 - At the end of the course, the student will be able to explain the environmental, sectoral, economic and political balances that support and challenge entrepreneurship.

4 - Students are taught debt and equity resources.

5 - It is aimed to provide motivation to students with successful entrepreneurship stories.

6 - Gaining the knowledge and skills of establishing a business with real business and entrepreneurship examples

Weekly Course Contents

Week 1	Theoretical : Fundamentals of Entrepreneurship Practice : Laboratory :
Week 2	Theoretical : Entrepreneur's Mind: From Thought to Reality - Successful Entrepreneurship Stories Practice : Laboratory :
Week 3	Theoretical : Strategic Management and Entrepreneur Practice : Laboratory :
Week 4	Theoretical : Different Business Types and Agency-Concession Rights (Franchising) Practice : Laboratory :
Week 5	Theoretical : Buying an Existing Business Practice : Laboratory :
Week 6	Theoretical : Creating a Strong Marketing Plan for Management Success Practice : Laboratory :
Week 7	Theoretical : eCommerce and Entrepreneurship-Entrepreneurship Network-Business Professions Practice : Laboratory :
Week 8	Theoretical : Mid-Term Exam Practice : Laboratory :
Week 9	Theoretical : Managing Cash Flow Practice : Laboratory :



Week 10	Theoretical : Preparing a Successful Financial Plan-Feasibility
	Practice :
	Laboratory :
Week 11	Theoretical : Creating a Winning Business Plan
	Practice :
	Laboratory :
Week 12	Theoretical : Debt and Equity Resources-Business Jobs, KOSGEB-İŞKUR
	Practice :
	Laboratory :
Week 13	Theoretical : Choosing the Right Place and Planning
	Practice :
	Laboratory :
Week 14	Theoretical : Entrepreneurship with a Global Perspective
	Practice :
	Laboratory :
Week 15	Theoretical : Final
	Practice :
	Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	3	5	5	5	4	5	4	4	4	3	4	4
2	3	4	5	4	4	5	5	5	4	4	4	4	5
3	3	3	5	2	4	5	4	3	3	4	3	4	5
4	2	3	5	3	4	4	4	2	2	4	0	3	5
5	2	4	5	3	4	5	2	2	5	3	5	3	4
6	3	2	5	4	5	5	3	4	4	4	4	5	5



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
First Aid

General Description

Course Name	: First Aid
Course Code	: MRK 1022
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: It is to protect and maintain the life of the person.
Course Contents	: ntroduction to first aid, Human body and vital signs, Basic life support, Bleeding, Shocks, Unconsciousness, Wounds, Dressings and dressings, Traumas, Fractures, Sprains, Dislocations, Burns and frostbite, Electric shock, Heat and sunstroke, Choking, Poisoning , First aid in case of foreign body in nose, throat and eye, First aid in animal bites and stings, First aid in natural disasters, First aid supplies, patient transport firsts
Recommended or Required Reading	: İlk yardım el kitabı-H. İbrahim Somyürek
Planned Learning Activities and Teaching Methods	: Conferences, Practical Lectures, Presentations, Seminars, Projects, Laboratory Practices (if required)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - Applying the basic principles of first aid. Transporting the sick or injured
- 2 - Providing basic life support
- 3 - Applying first aid for injuries
- 4 - First aid for fractures, dislocations and sprains
- 5 - Applying first aid in other emergencies



6 - Transporting the sick or injured

Weekly Course Contents

Week 1	Theoretical : Introduction to first aid, The human body and vital signs Practice : Laboratory :
Week 2	Theoretical : Basic life support Practice : Laboratory :
Week 3	Theoretical : First aid for bleeding Practice : Laboratory :
Week 4	Theoretical : First aid for shock and unconsciousness Practice : Laboratory :
Week 5	Theoretical : First aid for wounds, Dressings Practice : Laboratory :
Week 6	Theoretical : First aid in trauma Practice : Laboratory :
Week 7	Theoretical : First aid for fractures, sprains and dislocations Practice : Laboratory :
Week 8	Theoretical : Midterm Exam Practice : Laboratory :
Week 9	Theoretical : First aid for burns and frostbite Practice : Laboratory :
Week 10	Theoretical : First aid for electric shock, First aid for heat and sunstroke Practice : Laboratory :
Week 11	Theoretical : First aid for choking, First aid for poisoning Practice : Laboratory :



Week 12	Theoretical : First aid for foreign body in nose, throat and eye Practice : Laboratory :
Week 13	Theoretical : First aid in animal bites and stings First aid in natural disasters Practice : Laboratory :
Week 14	Theoretical : First aid supplies, patient transport principles Practice : Laboratory :
Week 15	Theoretical : Practice : Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	5	5	4	5	3	4	5	5	5	5	4	3	4
2	5	3	3	4	5	4	5	5	5	4	5	5	4
3	3	3	3	4	5	4	4	5	4	5	3	4	4
4	4	4	4	5	4	4	5	5	4	4	5	4	4
5	4	3	3	3	4	4	5	4	4	4	4	3	3
6	5	4	4	4	5	5	5	4	5	4	4	4	5



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Environmental Protection

General Description

Course Name	: Environmental Protection
Course Code	: MRK 1024
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: It makes definitions Related to the Historical Development of the Universe and Environment. Makes definitions for the environment. Defines general expressions for environmental science. Defines general expressions for environmental pollution. Defines general expressions for ecology. Defines general expressions for nature. Defines general expressions for waste. Defines general expressions for recycling.
Course Contents	: Facts about the environment and its protection
Recommended or Required Reading	: Çevre Koruma-Doç.Dr. Hüseyin Erkul
Planned Learning Activities and Teaching Methods	: Application-Presentation
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - The student makes Definitions of the Historical Development of the Environment and the Environment
- 2 - The student will be able to explain the purpose, scope and infrastructure of Environmental Regulations.
- 3 - IThe student defines general statements about Natural Resources
- 4 - The student will be able to explain the basic concepts of waste management.
- 5 - The student lists protection measures



Weekly Course Contents

Week 1	Theoretical : Historical Development of the Environment and Environmental Definitions: Environment Environmental science Practice : Laboratory :
Week 2	Theoretical : Historical Development of the Environment and Environmental Definitions: Environmental Pollution Practice : Laboratory :
Week 3	Theoretical : Historical Development of the Environment and Environmental Definitions: Ecology Nature Environmental protection Practice : Laboratory :
Week 4	Theoretical : Historical Development of the Environment and Environmental Definitions: Waste Recovery Environmental Right Practice : Laboratory :
Week 5	Theoretical : Environmental Regulations Environmental Law No. 2872 and 5491 Practice : Laboratory :
Week 6	Theoretical : Natural Resources Pollution of Natural Resources Air Pollution Practice : Laboratory :
Week 7	Theoretical : Natural Resources Water pollution Practice : Laboratory :
Week 8	Theoretical : Midterm Exam Practice : Laboratory :
Week 9	Theoretical : Waste Management Waste regulation Practice : Laboratory :
Week 10	Theoretical : Waste Management Waste control Waste reduction Practice : Laboratory :
Week 11	Theoretical : Safeguards International health and safety notices Practice : Laboratory :



Week 12	Theoretical : Protection Measures Occupational health and safety regulations Practice : Laboratory :
Week 13	Theoretical : Protective Measures Environmental protection measures Practice : Laboratory :
Week 14	Theoretical : Protection Measures Personal protection measures Practice : Laboratory :
Week 15	Theoretical : Final Practice : Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	4	5	5	4	5	5	4	5	4	5	5	4
2	5	3	4	3	4	5	4	4	4	5	3	3	4
3	3	3	4	3	4	5	4	4	5	2	3	3	4
4	2	3	3	4	4	4	4	4	4	4	5	4	5
5	3	3	4	5	4	4	5	5	5	4	4	5	5



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Technology Management

General Description

Course Name	: Technology Management
Course Code	: MRK 1026
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Providing control in technological process steps
Course Contents	: Technology management course, related to technology and technology management basic concepts, Technology management activities (Acquisition, Use, Identification, Learning, Conservation and Selection) and Technology management tools (Patent Analysis, Portfolio Management, Technology Roadmap,
Recommended or Required Reading	: Çetindamar D., Phaah R. ve Rrobert D., Teknoloji Yönetimi Faaliyetleri ve Araçları, Elif Yayınevi, Ankara, 2013
Planned Learning Activities and Teaching Methods	: Presentation, Application
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To understand the importance of technology management in terms of competitiveness of the country and companies.
- 2 - Understanding the factors affecting competitiveness
- 3 - Developing technology strategy in companies,
- 4 - To be able to apply various technology management tools in required times and places.
- 5 - Managing strategic technology collaboration processes



Weekly Course Contents

Week 1	Theoretical : Technology: Definition & Characteristics Practice : Laboratory :
Week 2	Theoretical : Technology & Industrialisation Practice : Laboratory :
Week 3	Theoretical : Management of technology activities and tools Practice : Laboratory :
Week 4	Theoretical : Technological Environment Practice : Laboratory :
Week 5	Theoretical : Competitiveness; Creating Firm-level Competitive Strategy Practice : Laboratory :
Week 6	Theoretical : Generating a firm strategy Practice : Laboratory :
Week 7	Theoretical : Technology Acquisition Practice : Laboratory :
Week 8	Theoretical : Midterm Exam Practice : Laboratory :
Week 9	Theoretical : Technology Exploitation Practice : Laboratory :
Week 10	Theoretical : Technology Identification Practice : Laboratory :
Week 11	Theoretical : Learning Practice : Laboratory :
Week 12	Theoretical : Technology Selection



Practice :

Laboratory :

Theoretical : Colloborative Arrangements

Week 13

Practice :

Laboratory :

Theoretical : Strategic Alliances –Case studies

Week 14

Practice :

Laboratory :

Theoretical : Final

Week 15

Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	4	5	5	4	5	5	5	5	5	5	5	5
2	4	3	5	4	4	4	5	5	4	4	4	3	3
3	3	3	4	3	3	3	3	3	3	4	4	4	4
4	5	4	3	4	3	4	3	4	4	4	4	5	5
5	5	4	3	3	2	4	5	3	4	5	2	3	4



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Innovation Management

General Description

Course Name	: Innovation Management
Course Code	: MRK 1028
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: comprehension and applications of innovations in technology
Course Contents	: It consists of S-Curve, Stage-Gate Method, Value Analysis), Research and Development (R&D) and Innovation Management.
Recommended or Required Reading	: Çetindamar D., Phaah R. ve RRobert D., Teknoloji Yönetimi Faaliyetleri ve Araçları, Elif Yayınevi, Ankara, 2013
Planned Learning Activities and Teaching Methods	: Presentation-Application
Recommended Optional Programme Components	

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - The student will be able to explain innovation and innovation processes.
- 2 - The student will be able to explain what the sources of innovation are.
- 3 - The student will be able to discuss the types of innovation and the relationships between innovation types.
- 4 - The student will be able to make choices regarding innovation strategies.

Weekly Course Contents

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması <https://turkiye.gov.tr/ebd?eK=4049&eD=BSCEDFRSVZ&eS=807403> adresinden yapılabilir.



Week 1	Theoretical : The Concept of Innovation and Its Importance Practice : Laboratory :
Week 2	Theoretical : Characteristics and Determinants of Innovation Practice : Laboratory :
Week 3	Theoretical : Innovation Infrastructure and Concepts Related to Innovation Practice : Laboratory :
Week 4	Theoretical : Types of Innovation Practice : Laboratory :
Week 5	Theoretical : İnovasyon ve Örgütsel İlişki Practice : Laboratory :
Week 6	Theoretical : Characteristics of Innovative Organizations Practice : Laboratory :
Week 7	Theoretical : Innovation Process and Management Practice : Laboratory :
Week 8	Theoretical : Midterm Exam Practice : Laboratory :
Week 9	Theoretical : Innovation in Turkey and in the World Practice : Laboratory :
Week 10	Theoretical : Marketing and Innovation Practice : Laboratory :
Week 11	Theoretical : Product innovations Practice : Laboratory :
Week 12	Theoretical : Service Innovations Practice : Laboratory :



Week 13 Theoretical : Structures Strengthening the Innovation Process
 Practice :
 Laboratory :

Week 14 Theoretical : Case Studies
 Practice :
 Laboratory :

Week 15 Theoretical : Final
 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	2	3	3	4	5	4	4	4	4	5	4	4	4
2	3	4	5	3	3	4	4	4	4	4	3	4	3
3	3	2	2	5	4	3	5	3	3	4	4	4	4
4	3	3	5	3	3	3	3	4	4	2	3	2	3



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Heat Treatment Technology

General Description

Course Name	: Heat Treatment Technology
Course Code	: MRK 1030
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 2
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Will be able to define the iron crystal structures and phases. Explains the crystal structure of iron and the resulting faults, examines what elements can be included in the structure. Interprets the phases that occur. Will be able to evaluate the importance of the diagram for heat treatment. Explains the requirements of heating and quenching processes. Describes how mechanical properties change. Describes where and why applied heat treatments and surface treatments are done.
Course Contents	: Heat treatment techniques and applications
Recommended or Required Reading	: Metallerin Isıl İşlem Teorisi İlya İsrailoviç Novikov
Planned Learning Activities and Teaching Methods	: Observation-Lecture
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 -
- 2 -
- 3 -
- 4 -
- 5 -

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- 7 -
- 8 -
- 9 -
- 10 -
- 11 -
- 12 -
- 13 -
- 14 -

Weekly Course Contents

Week 1	Theoretical : Description of Heat Treatment Practice : Description of Heat Treatment Laboratory :
Week 2	Theoretical : Crystal structures of metals, metal defects Practice : Crystal structures of metals, metal defects Laboratory :
Week 3	Theoretical : Fe-C Equilibrium diagram Practice : Fe-C Equilibrium diagram Laboratory :
Week 4	Theoretical : TTT Diagrams Practice : TTT Diagrams Laboratory :
Week 5	Theoretical : Annealing of steel Practice : Annealing of steel Laboratory :
Week 6	Theoretical : Hardening of steel Practice : Hardening of steel Laboratory :
Week 7	Theoretical : Hardening of steel Practice : Hardening of steel Laboratory :
Week 8	Theoretical : Mid-term Exam Practice : Mid-term Exam Laboratory :
Week 9	Theoretical : Surface hardening processes Practice : Surface hardening processes Laboratory :



Week 10 Theoretical : Surface hardening processes
Practice : Surface hardening processes
Laboratory :

Week 11 Theoretical : Surface hardening processes
Practice : Surface hardening processes
Laboratory :

Week 12 Theoretical : Surface hardening processes
Practice : Surface hardening processes
Laboratory :

Week 13 Theoretical : special heat treatments
Practice : special heat treatments
Laboratory :

Week 14 Theoretical : special heat treatments
Practice : special heat treatments
Laboratory :

Week 15 Theoretical : Overview
Practice : Overview
Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	2	3	2	4	0	3	5	3	4	2	5	3	3
2	3	4	3	3	0	4	3	3	3	3	5	3	4
3	1	2	3	2	4	4	3	3	3	3	0	3	2
4	4	5	2	2	5	3	3	3	5	3	5	3	3
5	3	4	3	4	4	3	4	4	2	3	5	3	4
6	3	2	2	3	5	4	5	4	2	3	2	3	3
7	2	4	2	4	4	3	3	5	5	3	3	4	3
8	5	1	2	3	1	3	4	5	3	2	3	3	2
9	5	2	3	3	3	4	2	4	4	4	3	5	3



10	1	5	2	5	3	3	3	3	3	3	3	4	4
11	3	2	2	1	3	3	4	4	3	3	4	3	4
12	4	4	4	2	3	2	4	4	2	4	2	2	3
13	1	2	2	3	4	3	3	3	3	4	3	4	3
14	3	3	3	3	5	3	4	3	5	5	3	4	2



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Methods of Manufacturing Chipless

General Description

Course Name	: Methods of Manufacturing Chipless
Course Code	: MRK 1032
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 2
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Technology, production and manufacturing concepts, casting methods, chipless (plastic) forming methods.
Course Contents	: Fundamentals of chipless forming and chipless manufacturing methods.
Recommended or Required Reading	: İmalat Yöntemleri, Osman Yazıcıoğlu
Planned Learning Activities and Teaching Methods	: Presentation, application.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 -
- 2 -
- 3 -
- 4 -

Weekly Course Contents

Week 1 : Theoretical :

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Practice :

Laboratory :

Theoretical :

Week 0

Practice :

Laboratory :

Theoretical :

Week 0

Practice :

Laboratory :

Theoretical :

Week 0

Practice :

Laboratory :

Theoretical :

Week 0

Practice :

Laboratory :

Theoretical :

Week 0

Practice :

Laboratory :

Theoretical :

Week 0

Practice :

Laboratory :

Theoretical :

Week 0

Practice :

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Week 0

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Week 0

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Theoretical :

Week 0

Practice :

Laboratory :

Theoretical :

Week 0

Practice :

Laboratory :



Theoretical :
Week 0 Practice :
Laboratory :

Theoretical :
Week 0 Practice :
Laboratory :

Theoretical :
Week 0 Practice :
Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Final	No	1	2,00
Attending lectures	Yes	14	28,00
Preparation for midterm	Yes	1	8,00
Preparation for final	Yes	1	15,00
Total Hours			55,00
ECTS			2,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	4	3	4	3	4	3	4	4	4	3	5	4
2	2	3	5	3	4	5	3	4	4	5	4	4	3
3	3	4	4	3	4	3	4	4	5	4	3	3	4
4	3	3	3	5	5	4	4	3	3	3	3	3	4



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
CNC Technology

General Description

Course Name	: CNC Technology
Course Code	: MRK 1034
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 2
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: With this course, it is aimed to gain the competences to do, prepare the CNC lathe for work, write a program and produce.
Course Contents	: Features of CNC lathe, Parts of CNC lathe, CNC lathe working principles of the workbench, Coordinate axes of the workbench, Reference points, Control panel types, Control panel keys and features Cutter and workpiece material relationship; Cutter types, features and usage locations; Tool compensation settings, Tool holders and fasteners Zero points on the parts;
Recommended or Required Reading	: CNC Tekniği ve Teknolojisi-Prof. Dr. Muammer Gavas
Planned Learning Activities and Teaching Methods	: Presentation, application.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - Preparing the CNC Lathe for work
- 2 - Writing a program for CNC Lathe Machine
- 3 - Making production on CNC Lathe

Weekly Course Contents

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması <https://turkiye.gov.tr/ebd?eK=4049&eD=BSCEDFRSVZ&eS=807403> adresinden yapılabilir.



Week 1	Theoretical : Features of CNC lathe Parts of CNC lathe Working principles of CNC lathe Practice : Laboratory :
Week 2	Theoretical : Machine coordinate axes reference points Types of control panels Control panel keys and features Practice : Laboratory :
Week 3	Theoretical : Cutter and workpiece material relationship Cutter types, features and uses Tool compensation settings Tool holders and fasteners Practice : Laboratory :
Week 4	Theoretical : Zero points on parts Properties of elements used in reset Resetting the tool relative to the workpiece Elements and features used in tool setting Practice : Laboratory :
Week 5	Theoretical : Giving depth of cut, angle of operation and feeds Tool roughing depth calculation Fastening apparatus Lacing control instruments Workpiece reset methods Practice : Laboratory :
Week 6	Theoretical : Programming principles in CNC lathes positioning systems, Operation and preparation commands Auxiliary commands Special commands Practice : Laboratory :
Week 7	Theoretical : Motion systems in CNC lathes coordinate systems Movement patterns Control types Axis Practice : Laboratory :
Week 8	Theoretical : Midterm Exam Practice : Laboratory :
Week 9	Theoretical : Definition and importance of simulation Simulation programs run a program Practice : Laboratory :
Week 10	Theoretical : Programming using CNC turning cycles a. Face turning cycle b. Longitudinal rough turning cycle NS. Radius chamfer cycle D. Grooving cycle Practice : Laboratory :
Week 11	Theoretical : Programming using CNC turning cycles a. Profile rough cycle b. Gap channel cycle NS. Deep hole drilling cycle D. Threading cycle Practice :



Laboratory :

Theoretical : Subprogramming technique Subprogramming structure

Week 12 Practice :

Laboratory :

Theoretical : Programming using subprogram on CNC lathe

Week 13 Practice :

Laboratory :

Theoretical : Alarm options available on CNC machines. Error codes used in programming
Machine feed mode settings measurement and control

Week 14 Practice :

Laboratory :

Theoretical : Final

Week 15 Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	4	5	4	5	3	4	5	4	4	3	4	4	4
2	3	4	5	4	5	4	5	4	5	4	5	4	5
3	4	5	4	5	4	4	5	4	4	3	4	5	4



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Social Responsibility

General Description

Course Name	: Social Responsibility
Course Code	: MRK 2101
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 1
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 1
Name of Lecturer	: Instructor Tuğberk ÖZMEN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: It is expected from students to 1. identify environmental problems like social, natural, cultural and so on. 2. to develop interdisciplinary cooperation for the solution of the problem, 3. Continuity without compromising the process objective, 4. to share their results with the public.
Course Contents	: In this course, students will learn about social responsibility concept, purpose and importance; The development of social responsibility in society; Civil society organizations and their places in social responsibility, social responsibility projects in the world and in Turkey.
Recommended or Required Reading	: Social Responsibility with Different Perspectives, Elvetin Akman, Kenan Ören, H. Bahadır Eser
Planned Learning Activities and Teaching Methods	: Lecture, class discussion and application.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to identify problems that concern social life.
- 2 - To be able to produce solutions and projects to existing problems.
- 3 - To be able to make interdisciplinary studies.
- 4 - To be able to take responsibility in the social field.



Weekly Course Contents

Week 1	Theoretical : Social Responsibility Concept, aim and importance Practice : Laboratory :
Week 2	Theoretical : History of Social Responsibility Practice : Laboratory :
Week 3	Theoretical : Development of Social Responsibility Practice : Laboratory :
Week 4	Theoretical : Relationship between community and social responsibility Practice : Laboratory :
Week 5	Theoretical : Relationship between individual and social responsibility Practice : Laboratory :
Week 6	Theoretical : Concept of social responsibility on the basis of occupations Definition, mission and purpose of civil society organizations Practice : Laboratory :
Week 7	Theoretical : Concept of social responsibility on the basis of occupations Definition, mission and purpose of civil society organizations Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Civil society organizations' place in social responsibility projects midterm Practice : Laboratory :
Week 10	Theoretical : Social responsibility projects in the world and Turkey Practice : Laboratory :
Week 11	Theoretical : Phantasmal phases of social responsibility projects Practice : Laboratory :



Theoretical : Identification of student projects
 Week 12 Practice :
 Laboratory :

Theoretical :
 Week 13 Practice : Project presentations
 Laboratory :

Theoretical :
 Week 14 Practice : Project presentations
 Laboratory :

Theoretical : Overview
 Week 15 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Assignment	Yes	4	20,00
Quizzes	Yes	1	5,00
Project	Yes	1	4,00
Final	No	1	1,00
Midterms	Yes	1	1,00
Total Hours			31,00
ECTS			1,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	2	0	0	2	0	0	0	0	2	2	0	0
2	0	1	0	0	1	0	0	0	0	1	1	0	0
3	0	1	0	0	1	0	0	0	0	1	1	0	0
4	1	2	0	0	2	0	0	0	0	2	2	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Worker's Healty and Safety

General Description

Course Name	: Worker's Healty and Safety
Course Code	: MRK 2111
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Üzeyir KUZU
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: With this course the students, aimed to gain the competencies required to ensure safety
Course Contents	: It is aimed to inform the learners about the standards of occupational safety and health education that will be necessary for the student's business life.
Recommended or Required Reading	: Occupational Health and Safety Dr. Alp Esin, Kardelen Offset, Ankara, 2006.
Planned Learning Activities and Teaching Methods	: Conferences, presentations, projects, practical lessons, laboruvar (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to take first aid measures
- 2 - To be able to provide working safety
- 3 - To be able to take precautions in accordance with work safety legislation
- 4 - To be able to have knowledge about occupational accidents and occupational diseases

Weekly Course Contents

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması <https://turkiye.gov.tr/ebd?ek=4049&cd=BSCEDFRSVZ&eS=807403> adresinden yapılabilir.



Practice :

Laboratory :

Week 2 Theoretical : First Aid training
Practice :
Laboratory :

Week 3 Theoretical : First Aid training
Practice :
Laboratory :

Week 4 Theoretical : First Aid training
Practice :
Laboratory :

Week 5 Theoretical : Provide personal safety
Practice :
Laboratory :

Week 6 Theoretical : Provide personal safety
Practice :
Laboratory :

Week 7 Theoretical : Provide personal safety
Practice :
Laboratory :

Week 8 Theoretical : Midterm-exam
Practice :
Laboratory :

Week 9 Theoretical : Ensuring the safety of employees
Practice :
Laboratory :

Week 10 Theoretical : The business environment is to provide security
Practice :
Laboratory :

Week 11 Theoretical : The business environment is to provide security
Practice :
Laboratory :

Week 12 Theoretical : Safety at Work legislation
Practice :
Laboratory :



Week 13 Theoretical : Safety at Work legislation
 Practice :
 Laboratory :

Week 14 Theoretical : Safety at Work legislation
 Practice :
 Laboratory :

Week 15 Theoretical : Overview
 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Individual study after lecture	Yes	10	100,00
Total Hours			102,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	2	1	0	0	1	0	0	0	0	0	3	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Computer Aided Design

General Description

Course Name	: Computer Aided Design
Course Code	: MRK 2121
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 1
ECTS	: 4
Name of Lecturer	: Instructor Mustafa KIRMAN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: To be able to transfer and assemble the three dimensional parts together with the required tolerance values to the technical drawing environment.
Course Contents	: Using screen editing and drawing help commands, selecting CAD software run options, doing screen and drawing settings and turning off CAD software, drawing by using basic drawing commands and using coordinate systems, doing technical drawings by using drawing commands and adding text to drawings, being able to use edit commands, changing the properties of drawing elements, copying drawing elements, doing measurement settings, changing measurements, adding surface marking, and adding tolerance, being able to do (two-dimensional) data transfer between CAD softwares.
Recommended or Required Reading	: Solidworks, Haluk Tatar, Pusula Publishing, Istanbul, 2013.
Planned Learning Activities and Teaching Methods	: Courses, labs and application projects.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to make three-dimensional drawing on the computer
- 2 - To Be able to transfer drawing to technical drawing
- 3 - To be able to make assembly



Weekly Course Contents

Week 1	Theoretical : Recognizing Autocad 2007 and to prepare working environment to draw Practice : Application of the lecture content Laboratory :
Week 2	Theoretical : Line command and dimensioning Practice : Application of the lecture content Laboratory :
Week 3	Theoretical : Direction and angle commands Practice : Application of the lecture content Laboratory :
Week 4	Theoretical : Circle, delete, copy, move, mirror, offset, rotate, crop, fillet commands Practice : Application of the lecture content Laboratory :
Week 5	Theoretical : Formatting and layers Practice : Application of the lecture content Laboratory :
Week 6	Theoretical : Arc and spline commands Practice : Application of the lecture content Laboratory :
Week 7	Theoretical : Hatch, scale, extension and chamfering Practice : Application of the lecture content Laboratory :
Week 8	Theoretical : Midterm exam Practice : Midterm exam Laboratory :
Week 9	Theoretical : Drawing applications Practice : Drawing applications Laboratory :
Week 10	Theoretical : Drawing applications Practice : Drawing applications Laboratory :
Week 11	Theoretical : Drawing applications Practice : Drawing applications Laboratory :



Week 12 Theoretical : Drawing applications
 Practice : Drawing applications
 Laboratory :

Week 13 Theoretical : Drawing applications
 Practice : Drawing applications
 Laboratory :

Week 14 Theoretical : Drawing applications
 Practice : Drawing applications
 Laboratory :

Week 15 Theoretical : overview
 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Application / Practice	Yes	14	42,00
Attending lectures	Yes	14	42,00
Individual study before lecture	Yes	14	28,00
Individual study after lecture	Yes	14	28,00
Preparation for midterm	Yes	1	3,00
Preparation for final	Yes	1	4,00
Total Hours			149,00
ECTS			5,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	1	3	1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Machine Design

General Description

Course Name	: Machine Design
Course Code	: MRK 2131
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 5
Name of Lecturer	: Instructor Veysel TİMOÇİN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Learning calculations and applications of Machine Design used in industry.
Course Contents	: Development of machine design, general information, forming, materials and strength in terms of design, design analysis.
Recommended or Required Reading	: Connecting Elements, Prof. Dr. Mustafa Gediktaş, Çağlayan Bookstore, Istanbul, 1995
Planned Learning Activities and Teaching Methods	: Presentation of lesson, presentation of formulates and solution of application examples.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to do all theoretical calculations and applications about Machine Design.
- 2 - To be able to choose appropriate materials for machine design.
- 3 - To be able to comprehend the points to be considered in machine design.
- 4 - To be able to Design the shaft-navel joints.

Weekly Course Contents

Week 1 : Theoretical : General Deformation

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Practice :

Laboratory :

Week 2 Theoretical : Machinery Design Materials

Practice :

Laboratory :

Week 3 Theoretical : Heat Treatments in Machine Design

Practice :

Laboratory :

Week 4 Theoretical : Casting Design

Practice :

Laboratory :

Week 5 Theoretical : Welding Design

Practice :

Laboratory :

Week 6 Theoretical : Wihoutchip Deformation Design Chipped Deformation Design

Practice :

Laboratory :

Week 7 Theoretical : Wihoutchip Deformation Design Chipped Deformation Design

Practice :

Laboratory :

Week 8 Theoretical : Midterm-exam

Practice :

Laboratory :

Week 9 Theoretical : Design of Bolt Joints Examination

Practice :

Laboratory :

Week 10 Theoretical : Examination

Practice :

Laboratory :

Week 11 Theoretical : Design of Shaft-Navel Joints

Practice :

Laboratory :

Week 12 Theoretical : Supporting Design

Practice :

Laboratory :



Theoretical : Lightness and cost in Design

Week 13

Practice :

Laboratory :

Theoretical : Leakness in Design

Week 14

Practice :

Laboratory :

Theoretical : Corrosion in Design

Week 15

Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Final	No	1	3,00
Preparation for midterm	Yes	1	3,00
Preparation for final	Yes	1	3,00
Attending lectures	Yes	20	20,00
Application / Practice	Yes	20	40,00
Individual study before lecture	Yes	20	20,00
Individual study after lecture	Yes	20	20,00
Total Hours			111,00
ECTS			4,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	2	1	3	3	0	2	1	1	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Machine Elements II

General Description

Course Name	: Machine Elements II
Course Code	: MRK 2141
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 3
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 4
Name of Lecturer	: Instructor Ali İhsan BAHÇEPINAR
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: To understand the basic static and strength information for the design face, according to classify the elements of the machine, machine components and calculate the strength to choose the appropriate elements.
Course Contents	: Design of spindle and axle, control calculations, spindle design, design of threaded motion transmission mechanism, drawing straight and v belt cam, cam selection and sizing, grip selection, gear wheel force analysis, gear wheel drawing picture drawing.
Recommended or Required Reading	: Machine Elements, Prof. Dr. Mustafa Akkurt, Birsen Publishing House, Istanbul, 1999.
Planned Learning Activities and Teaching Methods	: Conferences, Applied Courses, Presentations, Seminars, Projects, Laboratory Practices (if necessary)
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to recognize and use unit systems.
- 2 - To be able to define stretching and compression stress.
- 3 - To be able to classify machine elements.
- 4 - To be able to select materials for machine tools.
- 5 - To be able to define solder bonds - bonding joints
- 6 - To be able to define weldment bonds-rivets



- 7 - To be able to define bolt connections - pins and pens
- 8 - To be able to define shaft-navel joints
- 9 - To be able to define shafts and couplings.
- 10 - To be able to define shaft support elements (bearings).

Weekly Course Contents

Week 1	Theoretical : Unit systems. Basic principles in machine design Practice : Laboratory :
Week 2	Theoretical : Standards. Tolerances and exceeding Practice : Laboratory :
Week 3	Theoretical : Strength calculations of machine elements Practice : Laboratory :
Week 4	Theoretical : Strength calculations of machine elements Practice : Laboratory :
Week 5	Theoretical : Solder bonds. Adhesion bonds Practice : Laboratory :
Week 6	Theoretical : Welding bonds. Rivet bonds Bolt (pin) bonds. Pins and bolts (pernos) Practice : Laboratory :
Week 7	Theoretical : Welding bonds. Rivet bonds Bolt (pin) bonds. Pins and bolts (pernos) Practice : Laboratory :
Week 8	Theoretical : Midterm-exam Practice : Laboratory :
Week 9	Theoretical : Spindle. Hub (core) bonds Intermediate Exam Practice : Laboratory :
Week 10	Theoretical : Springs. Axis. Spindles Practice : Laboratory :



	Theoretical : Tribology (Friction. Greases (oils) and greasing (oiling))
Week 11	Practice :
	Laboratory :
	Theoretical : Sliding bearing. Rolling element (Anti friction) bearing
Week 12	Practice :
	Laboratory :
	Theoretical : Clutches. Belt tambour mechanisms
Week 13	Practice :
	Laboratory :
	Theoretical : Cogwheels
Week 14	Practice :
	Laboratory :
	Theoretical : Overview
Week 15	Practice :
	Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Individual study after lecture	Yes	10	60,00
Individual study before lecture	Yes	10	60,00
Preparation for midterm	Yes	0	0,00
Total Hours			122,00
ECTS			4,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	3	2	0	0	0	0	3	4	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

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9	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Cutting Tool Technologies

General Description

Course Name	: Cutting Tool Technologies
Course Code	: MRK 2151
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Veysel TİMOÇİN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Introducing cutting tools and teaching the parameters to be used in the field of application (cutting speed, progress, rotation etc.).
Course Contents	: Machining and chip formation, Machinability, tool life, cutting forces and strength, cutting parameters, chip types, effect of temperature on tool, surface roughness and measurement, surface quality calculation, Cutting tool materials, ideal tool properties, tool geometry, effects of saw angle, ISO tool norms according to workpiece materials, Cutting tool selection criteria, docking angle, negative and positive tools, cutting tool and tool standards
Recommended or Required Reading	: Modern Machining Methods, Prof.Dr. Dr. M. Cemal Çakır, Dora Publishing, Bursa, 2011
Planned Learning Activities and Teaching Methods	: Homework + Report preparation
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to select suitable cutting tool for manufacturing process.
- 2 - To be able to make necessary calculations about cutting tool.
- 3 - To be able to understand general information about cutting tool technologies.
- 4 - To be able to select ISO tool holders according to workpiece materials.



Weekly Course Contents

Week 1	Theoretical : Machining and chip formation Practice : Laboratory :
Week 2	Theoretical : Machinability concept and machinability parameters Practice : Laboratory :
Week 3	Theoretical : Tool life and tool life models Practice : Laboratory :
Week 4	Theoretical : Cutting forces in chip removal, force measurement Practice : Laboratory :
Week 5	Theoretical : Effects of cutting parameters on chip removal Practice : Laboratory :
Week 6	Theoretical : Heat and temperature distribution, effects of temperature on the tool Practice : Laboratory :
Week 7	Theoretical : Heat and temperature distribution, effects of temperature on the tool Practice : Laboratory :
Week 8	Theoretical : Midterm Practice : Laboratory :
Week 9	Theoretical : Surface roughness and measurement, calculation of surface quality Practice : Laboratory :
Week 10	Theoretical : Cutting tool materials Practice : Laboratory :
Week 11	Theoretical : Ideal tool properties, tool geometry, effects of saw blade angle Practice : Laboratory :
Week 12	Theoretical : ISO tool norms according to workpiece materials Practice : Laboratory :



Practice :

Laboratory :

Theoretical : Cutting tool selection criteria and tool selection

Week 13

Practice :

Laboratory :

Theoretical : Docking angle, negative and positive sets, corner radii effect

Week 14

Practice :

Laboratory :

Theoretical : Cutting tool coating methods and effects of coating Cutter and tool holder standards

Week 15

Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Attending lectures	Yes	10	20,00
Individual study before lecture	Yes	15	30,00
Individual study after lecture	Yes	15	30,00
Preparation for midterm	Yes	1	5,00
Preparation for final	Yes	1	5,00
Total Hours			92,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	2	2	0	0	0	0	3	4	0	0	0	0	2
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Unusual Production Methods

General Description

Course Name	: Unusual Production Methods
Course Code	: MRK 2161
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The purpose of this course is to give theoretical knowledge about Classify different non-traditional machining processes , Describe the basic mechanism of material removal in non-traditional machining processes and Applications and limitations of non-traditional machining processes . In this course, using of these techniques in industry are also taught by giving examples.
Course Contents	: To be able to comprehend the basic properties of advanced welding methods used in industrial production , various non-traditional production methods of electro erosion, chemical etching and laser cutting .
Recommended or Required Reading	: Special ManufacturingTechniques, Mehmet Brief, Simav, Bursa, 2002.
Planned Learning Activities and Teaching Methods	: Lectures, presentations, homework, report writing.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to comprehend the properties of traditional and special manufacturing methods.
- 2 - To be able to Understand the differences between traditional and special manufacturing methods.
- 3 - To be able to identify situations that need special manufacturing methods.
- 4 - To be able to apply working principles in special manufacturing methods.
- 5 - To be able to understand the applications and limitations of special manufacturing methods.



Weekly Course Contents

Week 1	Theoretical : Main Properties Of Traditional And Non-Traditional Machining Processes Practice : Laboratory :
Week 2	Theoretical : Differences Between Traditional And Non-Traditional Machining Processes And Classification Of Non-Traditional Machining Processes Practice : Laboratory :
Week 3	Theoretical : Abrasive Jet Machining (AJM) Practice : Laboratory :
Week 4	Theoretical : Ultrasonic Machining (USM) Practice : Laboratory :
Week 5	Theoretical : Water-Jet Machining (WJM) Abrasive Water-Jet Machining (AWJM) Practice : Laboratory :
Week 6	Theoretical : Electrochemical Machining (ECM), Electrochemical Grinding (ECD) And Electro Jet Machining (EJM) Practice : Laboratory :
Week 7	Theoretical : Electrochemical Machining (ECM), Electrochemical Grinding (ECD) And Electro Jet Machining (EJM) Practice : Laboratory :
Week 8	Theoretical : Midterm Exam Practice : Laboratory :
Week 9	Theoretical : Electrical-Discharge Machining (EDM) Practice : Laboratory :
Week 10	Theoretical : Wire Electrical-Discharge Machining (WEDM) Practice : Laboratory :
Week 11	Theoretical : Wire Electrical-Discharge Machining (WEDM) Practice :



Laboratory :

Theoretical : Laser-Jet Machining, Electro-Ray Machining

Week 12 Practice :

Laboratory :

Theoretical : Laser-Jet Machining, Electro-Ray Machining

Week 13 Practice :

Laboratory :

Theoretical : Chemical Machining And Photochemical Machining, Rapid Prototyping

Week 14 Practice :

Laboratory :

Theoretical : Chemical Machining And Photochemical Machining, Rapid Prototyping

Week 15 Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Attending lectures	Yes	14	14,00
Midterms	Yes	1	3,00
Final	No	1	3,00
Individual study before lecture	Yes	14	14,00
Individual study after lecture	Yes	14	28,00
Preparation for midterm	Yes	1	8,00
Preparation for final	Yes	1	12,00
Homework	Yes	2	14,00
Total Hours			96,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	2	2	0	0	0	0	1	1	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Welding Technology

General Description

Course Name	: Welding Technology
Course Code	: MRK 2171
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 3
Name of Lecturer	: Instructor Veysel TİMOÇİN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: Modern welding methods and their applications to be informed about.
Course Contents	: The classification of welding methods in industrial production.To be able to comprehend the basic properties of industrial arc welding, , electric arc welding, gas welding, oxy-gas welding, submerged welding and special welding methods.
Planned Learning Activities and Teaching Methods	: Lectures, Practical Courses, Presentation, Seminar, Project, Laboratory Applications (if necessary)
Recommended or Required Reading	: Manufacturing procedures, Prof. Assoc. Salahaddin Anık, Prof. Assoc. Adnan Dikicioğlu, Assoc. Dr. Murat Vural, ITU Mechanical Engineering, Birsen Publishing House, 1999.
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to comprehend modern welding methods and application areas.
- 2 - To be able to investigate the metallurgical properties of weldability and weldability of metals.
- 3 - To be able to design welded constructions and to make strength calculations.
- 4 - To be able to understand the importance of quality control in weldment.

Weekly Course Contents

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	Theoretical : Modern welding methods and application areas.
Week 1	Practice : Laboratory :
	Theoretical : Weld capabilities of metals and metallurgical examination of weldability
Week 2	Practice : Laboratory :
	Theoretical : Welding machines
Week 3	Practice : Laboratory :
	Theoretical : To open welding gap in electric arc welding
Week 4	Practice : Laboratory :
	Theoretical : Electric arc welding
Week 5	Practice : Laboratory :
	Theoretical : Electric arc welding Blunt, V, overlay and horizontal corner welding processes.
Week 6	Practice : Laboratory :
	Theoretical : Electric arc welding Blunt, V, overlay and horizontal corner welding processes.
Week 7	Practice : Laboratory :
	Theoretical : Midterm-exam
Week 8	Practice : Laboratory :
	Theoretical : Protective gas welding Types of gas used.
Week 9	Practice : Laboratory :
	Theoretical : Oxy-gas welding process
Week 10	Practice : Laboratory :
	Theoretical : Oxy-gas welding process
Week 11	Practice : Laboratory :
	Theoretical : Welded construction, and strength accounts
Week 12	Practice : Laboratory :



Theoretical : Welded construction, and strength accounts
 Week 13 Practice :
 Laboratory :

Theoretical : Quality assurance and control on weld.
 Week 14 Practice :
 Laboratory :

Theoretical : Overview
 Week 15 Practice :
 Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Attending lectures	Yes	10	50,00
Application / Practice	Yes	10	40,00
Total Hours			92,00
ECTS			3,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	2	1	0	0	0	0	2	1	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Computer Aided Manufacturing

General Description

Course Name	: Computer Aided Manufacturing
Course Code	: MRK 2201
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 2
Laboratory Credits	: 0
Practice Credits	: 1
ECTS	: 4
Name of Lecturer	: Instructor Gürel ŞENOL
Type of Course Unit	: Optional
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: In this course, using the CAM programs, two-dimensional, three-dimensional drawings to create tool paths for CNC milling machines aimed to gain competence.
Course Contents	: Basic CNC information is given. It is taught to write G codes for CNC lathe and vertical machining center. The necessary cycles for programming the CNC are taught and writing applications are done in the program. General information about CAM programs is given and virtual processing is done by calling CAM program of machine parts drawn in CAD. The generated machined part data is sent to the CNC workbench.
Recommended or Required Reading	: CNC Programming and Industrial Applications, Assist. Assoc. Dr. Ahmet Can, Dizgi offset, Konya, 2000.
Planned Learning Activities and Teaching Methods	: Question and answer, group work, commentary, Application, Presentation, Practice again
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to transfer the part to be machined to the process
- 2 - To be able to determine the four-axis toolpath.
- 3 - To able to choose the cutting tool and tool holder to be used, and create them
- 4 - To able to make the simulation of four-axis tool paths .



Weekly Course Contents

Week 1	Theoretical :	The transportation of the two-dimensional workpiece to the machining part Determining the equipment path
	Practice :	The transportation of the two-dimensional workpiece to the machining part Determining the equipment path and their applications
	Laboratory :	
Week 2	Theoretical :	The determination of inserts and insert holders,the creation of inserts and tool-holders
	Practice :	The determination of inserts and insert holders,the creation of inserts and tool-holders and their applications
	Laboratory :	
Week 3	Theoretical :	The determination of the action to be used Surface milling process Rough and intermediate rough milling process Drilling process
	Practice :	The determination of the action to be used Surface milling process Rough and intermediate rough milling process Drilling process and their applications
	Laboratory :	
Week 4	Theoretical :	Profile milling process Channel milling process Finish milling process The creation of the equipment path simulation
	Practice :	Profile milling process Channel milling process Finish milling process The creation of the equipment path simulation and their applications
	Laboratory :	
Week 5	Theoretical :	The transportation of the three-dimensional workpiece to the machining part Specifying the equipment path Selecting cutting tools and tool holders to be used, creating cutting tools and holders
	Practice :	The transportation of the three-dimensional workpiece to the machining part Specifying the equipment path Selecting cutting tools and tool holders to be used, creating cutting tools and holders and their applications
	Laboratory :	
Week 6	Theoretical :	The determination of the action to be used Surface milling process Rough and intermediate rough milling process Drilling process Profile milling process Channel milling process Helical milling process
	Practice :	The determination of the action to be used Surface milling process Rough and intermediate rough milling process Drilling process Profile milling process Channel milling process Helical milling process and their applications
	Laboratory :	
Week 7	Theoretical :	The determination of the action to be used Surface milling process Rough and intermediate rough milling process
	Practice :	The determination of the action to be used Surface milling process Rough and intermediate rough milling process and their applications
	Laboratory :	
Week 8	Theoretical :	Midterm-exam
	Practice :	Midterm-exam
	Laboratory :	Midterm-exam
Week 9	Theoretical :	4-axis milling process Indexing 4 axis machining Continuous 4-axis machining Finish milling process Precision surface and edge cleaning operations The



creation of the equipment path simulation

Practice : 4-axis milling process Indexing 4 axis machining Continuous 4-axis machining Drilling Finish milling process Precision surface and edge cleaning operations The creation of the equipment path simulation and their applications

Laboratory :

Theoretical : Profile wrapping (Wrap) Rough milling Finish milling The creation of the equipment path simulation

Week 10

Practice : Profile wrapping (Wrap) Rough milling Finish milling The creation of the equipment path simulation and their applications

Laboratory :

Theoretical : The determination of 5 axis operation to be used Rough milling process Drilling process Profile milling process

Week 11

Practice : The determination of 5 axis operation to be used Rough milling process Drilling process Profile milling process and their applications

Laboratory :

Theoretical : Side Wall Process (Swarf) Precision (finishing) milling process The creation of the equipment path simulation

Week 12

Practice : Side Wall Process (Swarf) Precision (finishing) milling process The creation of the equipment path simulation and their applications

Laboratory :

Theoretical : Selecting a postprocessor to derive NC codes The derivation of NC codes Data Transfer methods to CNC milling machine Data transfer methods from CNC milling machine

Week 13

Practice : Selecting a postprocessor to derive NC codes The derivation of NC codes Data Transfer methods to CNC milling machine Data transfer methods from CNC milling machine and their applications

Laboratory :

Theoretical : Preparing CNC Milling Machine for Machining Process CNC milling by machining

Week 14

Practice : Preparing CNC Milling Machine for Machining Process CNC milling by machining and their applications

Laboratory :

Theoretical : Overview

Week 15

Practice : Overview applications

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Final	No	1	2,00
Attending lectures	Yes	10	10,00
Application / Practice	Yes	10	30,00
Laboratory	Yes	10	10,00

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Individual study before lecture	Yes	10	10,00
Individual study after lecture	Yes	10	10,00
Preparation for midterm	Yes	1	2,00
Preparation for final	Yes	1	2,00
Workshop	Yes	5	50,00
Total Hours			128,00
ECTS			4,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	1	2	3	0	0	2	2	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Vocational Training in Workplace

General Description

Course Name	: Vocational Training in Workplace
Course Code	: MYO 2002
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 5
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 18
Name of Lecturer	: Instructor Mustafa KIRMAN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: To develop students' knowledge, skills, attitudes and working habits in their learning periods, skills and experiences in laboratory and workshop practices, to provide their responsibilities, relationships, organization and production processes and new technologies to learn.
Course Contents	: To find opportunity to apply their knowledge in public or private organizations in accordance with the lessons they have seen, to apply production and service processes in the workplace.
Recommended or Required Reading	: Manisa Celal Bayar University Vocational Training in Workplace Directive (https://ime.cbu.edu.tr/ISS/Application/Content/HomePage/Files/SUS-Yonerge.pdf)
Planned Learning Activities and Teaching Methods	: Lecture, Drilland Practice, Demonstration, Show Work, Group Work, Experimental / Laboratory, Individual Study, Project Based Learning
Recommended Optional Programme Components	:

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to prepare for business
- 2 - To be able to be ready to group work
- 3 - To be able to improve knowledge and skill of production methods
- 4 - To be able to understand the importance of quality and control in manufacturing



Weekly Course Contents

Week 1	Theoretical : Introducing the internship, studying the physical possibilities of the employer. Orientation. Examination of work flow charts. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 2	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 3	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 4	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 5	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 6	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 7	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 8	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 9	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :
Week 10	Theoretical : To do maintenance, repair and assembly applications related to the field of industry. Making related applications. Practice : Inspection, observation and reporting of work done. Laboratory :



Week 11	Theoretical :	To do maintenance, repair and assembly applications related to the field of industry. Making related applications.
	Practice :	Inspection, observation and reporting of work done.
	Laboratory :	
Week 12	Theoretical :	To do maintenance, repair and assembly applications related to the field of industry. Making related applications.
	Practice :	Inspection, observation and reporting of work done.
	Laboratory :	
Week 13	Theoretical :	To do maintenance, repair and assembly applications related to the field of industry. Making related applications.
	Practice :	Inspection, observation and reporting of work done.
	Laboratory :	
Week 14	Theoretical :	To do maintenance, repair and assembly applications related to the field of industry. Making related applications.
	Practice :	Inspection, observation and reporting of work done.
	Laboratory :	
Week 15	Theoretical :	To do maintenance, repair and assembly applications related to the field of industry. Making related applications.
	Practice :	Inspection, observation and reporting of work done.
	Laboratory :	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Internship-Competency	Yes	15	60,00
Application / Practice	Yes	15	120,00
Field study	Yes	15	120,00
Workshop	Yes	15	60,00
Short cycle-Theoretical	Yes	15	60,00
Short cycle-Practice	Yes	15	120,00
Total Hours			540,00
ECTS			18,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	2	3	3	2	2	4	3	1	1	2	1	3
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0

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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Atatürk's Principles and History of Revolution

General Description

Course Name	: Atatürk's Principles and History of Revolution
Course Code	: AİT 2102
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 4
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 4
Name of Lecturer	: Instructor SERKAN CANSEVEN
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: 1 - Atatürk's principles and reforms, independent, democratic and secular training of generations 2 - Turkish youth, to gain confidence in national history and consciousness 3 - Basic understand the dynamics of Turkish Modernization
Course Contents	: 1 - Principles of Atatürk and purpose of the course, taught 2 - The causes of decay of the Ottoman Empire 3 - World War I and the results 4 - Response to the occupation and Mustafa Kemal Pasha 5 - National Pact and T.B.M.M. 's opening 6 - Wars and the Treaty of Lausanne
Recommended or Required Reading	: 1- Sound, I, II, III 2- Atatürk's Lectures and Statements I, II, III 3- Atatürk Way Professor Dr. Turan Feyzioğlu Professor Dr. Hamza Eroğlu Professor Dr. Mustafa Aysan 4- Çankaya Falih Rıfık Atay 5- Atatürk's Principles and History of Turkish Revolution Professor Dr. Refik Turan Professor Dr. Mustafa Safran Professor Dr. Necdet Hayta
Planned Learning Activities and Teaching Methods	: Maps, Computers, Slideshow, DVD, VCD
Recommended Optional Programme Components	: None

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to comprehend developments in European history and Ottoman modernization
- 2 - To be able to decline the Ottoman Empire to explain the reasons
- 3 - To be able to learn the causes and consequences of World War I



5 - To be able to understand the foundation philosophy of the Republic of Turkey better

Weekly Course Contents

Week 1	Theoretical : Reading for the Purpose of the Atatürk Principles and Revolution History Class The Fall of the Ottoman Empire Practice : Laboratory :
Week 2	Theoretical : The Fall of the Ottoman Empire Administrative Reforms and I. Constitutionalism Practice : Laboratory :
Week 3	Theoretical : Reasons for the Monarchy and the Turkish Revolution Practice : Laboratory :
Week 4	Theoretical : World War I and the Armistice Agreement Practice : Laboratory :
Week 5	Theoretical : General Situation of the country against the occupation Mustafa Kemal Pasha's Response Practice : Laboratory :
Week 6	Theoretical : Mustafa Kemal Pasha at Samsun and The Congresses Practice : Laboratory :
Week 7	Theoretical : Mustafa Kemal Pasha at Samsun and The Congresses Practice : Laboratory :
Week 8	Theoretical : Mid-term\exam Practice : Laboratory :
Week 9	Theoretical : Opening of Meclis-i Mebusan and Misak-ı Milli Practice : Laboratory :
Week 10	Theoretical : T.B.M.M.'s Opening and Structure Practice : Laboratory :

Week 11 Theoretical : Facades, I. and II. Inonu, Sakarya War, The Great Raid, The Treaty of Mudanya

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Laboratory :

Theoretical : The Treaty of Lausanne

Week 12

Practice :

Laboratory :

Theoretical : Proclamation of the Republic, Turkey's geopolitical position

Week 13

Practice :

Laboratory :

Theoretical : Foreign Policy of the Republic of Turkey

Week 14

Practice :

Laboratory :

Theoretical : Overview

Week 15

Practice :

Laboratory :

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Attending lectures	Yes	14	28,00
Preparation for midterm	Yes	1	3,00
Preparation for final	Yes	1	3,00
Midterms	Yes	1	1,00
Final	No	1	1,00
Individual study before lecture	Yes	14	42,00
Individual study after lecture	Yes	14	42,00
Total Hours			120,00
ECTS			4,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	1	0	0	0	0	0	0	0	0
5	0	1	0	0	0	0	0	0	0	0	0	1	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Turkish Language

General Description

- Course Name** : Turkish Language
- Course Code** : TDL 2102
- Qualification Level** : Short Cycle
- Qualification Degree** : PreBachelor Degree
- Course Language** : Turkish
- Theoretical Credits** : 4
- Laboratory Credits** : 0
- Practice Credits** : 0
- ECTS** : 4
- Name of Lecturer** : Lecturer MUSTAFA YEMİŞ
- Type of Course Unit** : Compulsory
- Mode of Delivery** : Face-To-Face
- Prerequisite and Co-requisites** : N/A
- Objectives of the Course** : The overall objective of this course, individuals who understand the subtlety and depth listening, and reading the Turkish language-rich, well-established and productive to show that a language, language and consciousness awaken love, pleasure and acquire the habit of reading, to adopt the core values of Turkish society; briefly thinking and communication skills of individuals to develop.
- Course Contents** : Each student in the graduate and undergraduate education, according to comprehend the main language structure and function of language-thought in terms of connectivity, through written and oral expression, the Turkish right and gain the ability to use beautiful, these rules and native speakers of the language in an awareness of judges and they will have to make. The perfect way to express ideas in accordance with the purpose of rhetoric, including the necessary rules (speaking) knowledge of each profession for educated young people has become a very important need. In this regard, given to institutions of higher education courses in Turkish language, Turkish, and literature courses in high schools as a continuation of the rhetoric, especially in the field will be useful to intensify. On the other hand, a written essay as well as young people, to acquire the habit of speaking correctly and effectively is an issue that should not be neglected. Western countries, drawing upon the books written on this topic, Turkish course programs to address the audience, it is possible to teach techniques and methods of the rule. In this regard, particularly as Atatürk, the Turkish speaker's valuable speech will be taken to benefit from the texts.
- Recommended or Required Reading** : Aksan, Dogan, Every Direction Language / Linguistics with Main Lines, c.1,2,3, Turkish Language Institution, 1979-1982 Aksoy, Ömer Asım, Dictionary of Proverbs, İnkilap Bookstore, January 1988 Aksoy, Ömer Asım, Dictionary of Idioms, İnkilap Bookstore, January 1988 Atatürk, Mustafa Kemal, Speech Banguoğlu, Tahsin, Turkish Grammer, Turkish Language Institute Publications, 2000 Bozkurt, Fuat, Turkish, İstanbul, 1975 Buckley, Reid, Speaking at the Community, System Publishing, May 2001 Dilçin, Cem, New Screening Dictionary, Ankara, 1983 Ergin, Muharrem, Turkish Language for Universities, Bayrak Publications, 2002 Gencan, Tahir Nejat, Grammar, Ayraç Publishing House, October 2001 Karaalioğlu, Seyit Kemal, Composition Art, İstanbul, January 1999 Karahan, Leyla, Türkçede Syntax, Akçağ Publications, 1999 Kudret, Cevdet, Literature Information by Examples, c. 1, 2, İnkilap Bookstore, 1981 Koc, Nurettin, New Grammar, İstanbul, 1990 Moran, Berna, A Critical Look at Turkish Names, c. 1, 2, 3, Communication Publications, 1983-1994 Özdemir, Emin, Güzel an



Planned Learning Activities and Teaching Methods :	Description, discussion, presentation, brainstorming.
Recommended Optional Programme Components :	N/A

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to explain the characteristics of Turkish language by sensing its usage procedure with examples.
- 2 - To be able to express the function, dimensions of language and its relationship with thought, culture, and society.
- 3 - To be able to distinguish between the concepts of spoken language and written language;
- 4 - To be able to analyze a text they read or follow a program they watch.
- 5 - To be able to correctly and affectively express their feelings, thoughts, impressions, observations both in written and spoken language.
- 6 - To be able to identify the historical background of Turkish and its location among world languages;
- 7 - To be able to apply the basic concepts of morphology;
- 8 - To be able to explain the concepts about syntax and semantics.
- 9 - To be able to identify the mistakes in the usage of the language and show them on the texts.
- 10 - To be able to become an individual who is tolerant and cares about his values, and also, someone who can find solutions to the problems and correctly express his ideas about these problems both in written and spoken language.

Weekly Course Contents

Week 1	Theoretical : What is language? In people's life the importance of language as a social institution. Relationship between language and culture Practice : Laboratory :
Week 2	Theoretical : Language in terms of structure and origin. Place of Turkish language among world languages. Practice : Laboratory :
Week 3	Theoretical : The development of Turkish written language. Historical stages of Turkish written language. Practice : Laboratory :
Week 4	Theoretical : The current status of the Turkish language, expansion areas of the Turkish language. Practice : Laboratory :



	Practice :	
	Laboratory :	
Week 6	Theoretical :	Turkish sound features and sound knowledge of the rules The structure of syllables in Turkish, syllable types, stress and intonation
	Practice :	
	Laboratory :	
Week 7	Theoretical :	Midterm-exam
	Practice :	
	Laboratory :	
Week 8	Theoretical :	Spelling rules and application. Mid-term exam.
	Practice :	
	Laboratory :	
Week 9	Theoretical :	Spelling rules and application. Mid-term exam.
	Practice :	
	Laboratory :	
Week 10	Theoretical :	Punctuation and its applications.
	Practice :	
	Laboratory :	
Week 11	Theoretical :	Morphology, lexis structure, word formation.
	Practice :	
	Laboratory :	
Week 12	Theoretical :	Construction and suffixes, word analysis.
	Practice :	
	Laboratory :	
Week 13	Theoretical :	The word types. Noun, adjective.
	Practice :	
	Laboratory :	
Week 14	Theoretical :	The word types. Adverb, pronouns, prepositions, conjunctions and interjections
	Practice :	
	Laboratory :	
Week 15	Theoretical :	The word types. Verbs, gerunds, infinitives, active-passive.
	Practice :	
	Laboratory :	

ECTS Workload

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Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Assignment	Yes	1	4,00
Final	No	1	1,00
Attending lectures	Yes	14	28,00
Individual study before lecture	Yes	14	42,00
Individual study after lecture	Yes	14	42,00
Preparation for midterm	Yes	1	4,00
Preparation for final	Yes	1	4,00
Total Hours			126,00
ECTS			4,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	2	0	0	0	0	0	0	0	3	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	3	3	0	3	0	0	4	0	0	4	0	0	3
5	4	4	0	0	0	0	0	0	0	0	0	0	4
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	3	0	0	0	0	0	2	0	0	0	0	5
10	5	3	0	0	4	0	0	3	0	4	0	0	0



MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Mechanical Drawing
and Construction
Foreing Language

General Description

Course Name	: Foreing Language
Course Code	: YDI 2102
Qualification Level	: Short Cycle
Qualification Degree	: PreBachelor Degree
Course Language	: Turkish
Theoretical Credits	: 4
Laboratory Credits	: 0
Practice Credits	: 0
ECTS	: 4
Name of Lecturer	: Instructor EMEL GENÇ
Type of Course Unit	: Compulsory
Mode of Delivery	: Face-To-Face
Prerequisite and Co-requisites	: N/A
Objectives of the Course	: The aim of this course is to provide the first year students with the opportunity of getting familiar with basic English
Course Contents	: Elementary level vocabulary, grammar and four skills of English.
Recommended or Required Reading	: Headway-Elementary (Oxford)
Planned Learning Activities and Teaching Methods	: Lecture, 2: Question-Answer, 3: Discussion, 4: Drills and Practice
Recommended Optional Programme Components	: N/A

Learning Outcomes

Upon successful completion of this course, the enrolled students will be gaining the following knowledge, skills and competences ;

- 1 - To be able to understand basic English grammar.
- 2 - To be able to grasp the meaning of basic vocabulary.
- 3 - To be able to speak, read and write in English at Elementary Level.
- 4 - To be able to introduce yourself.

Weekly Course Contents

Week 1 : Theoretical : regular/irregular verbs

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	Practice : Writing telling a story
	Laboratory :
Week 2	Theoretical : Unit 7 Introducing people time expressions Practice : reading sixty years of flight Laboratory :
Week 3	Theoretical : unit 8 countable and uncountable nouns how much/how many Practice : reading and speaking "The history of the sandwich" okuma parçasını okuyup anlamak Your favourite recipe bahsetmek Laboratory :
Week 4	Theoretical : some/any Practice : Listening "What's your favourite sandwich" Laboratory :
Week 5	Theoretical : unit 9 Comparatives Have got/has got Superlatives Practice : Reding " Mega cities" Laboratory :
Week 6	Theoretical : adjectives Unit 10 Present continuous tense in/on/at Practice : Describing a flat Writing Comparing people you know Laboratory :
Week 7	Theoretical : Midterm Exam Practice : Laboratory :
Week 8	Theoretical : Present continuous tense in/on/at Simple present& present continuous Practice : Laboratory :
Week 9	Theoretical : Present continuous tense in/on/at Simple present& present continuous Practice : Reading "Living in Space" Laboratory :
Week 10	Theoretical : Unit 11 going to/will making suggestions Practice : Writing Describing a holiday" Laboratory :
Week 11	Theoretical : Unit 11 Simple past& present perfect Practice : speaking Talking about you Have you ever? Laboratory :
Week 12	Theoretical : Simple past& present perfect tense revision Practice : Talk Survey 'What can you do?' Reading and speaking 'Super Children' Writing letters for business applicants. Laboratory :



	Theoretical :	Unit 6 could Was born homonym for
Week 13	Practice :	Using 'could' for past skills. Define where and when you are born. Finding the same pronounced different words.
	Laboratory :	
	Theoretical :	Revision
Week 14	Practice :	Overview
	Laboratory :	
	Theoretical :	Overview
Week 15	Practice :	
	Laboratory :	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Final	No	1	1,00
Attending lectures	Yes	12	36,00
Individual study before lecture	Yes	12	36,00
Individual study after lecture	Yes	12	36,00
Preparation for midterm	Yes	12	12,00
Total Hours			122,00
ECTS			4,00

Program and Learning Outcomes Relations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0

