Evrak Tarih ve Sayısı: 04.07.2024-807394

MANİSA CELAL BAYAR ÜNİVERSİTESİ
MANİSA TEKNİK BİLİMLER MESLEK YÜKSEKOKULU
MAKİNE VE METAL TEKNOLOJİLERİ BÖLÜMÜ
MAKİNE PROGRAMI
2021 ÖĞRETİM PLANI

1. Sınıf 1. Yarıyıl							
Türkçe/İngilizce Dersin Kodu	**Türkçe Dersin Adı**	**İngilizce Dersin Adı**	**T**	**U**	**S**	**K**	**AKTS**
MMK 1101	Matematik	Mathematics	2	1	3	3	5
MMK 1103	Fizik	Physic	2	1	3	3	4
MMK 1105	Teknik Resim	Technical Drawing	3	1	4	4	6
MMK 1107	Talaşlı İmalat Yöntemleri	Methods of Metal Cutting	3	1	4	4	5
MMK 1109	Ölçme ve Kontrol	Mesurment and Control	1	1	2	2	3
MMK 1111	Meslek Etiği	Professional Ethics	1	0	1	1	1
MMK 1201	**Seçmeli Dersler 1**	**Elective Courses 1**	**1**	**1**	**2**	**2**	**3**
MMK 1211	*Bilgi Ve İletişim Teknolojisi*	Information and Communication Technology	1	1	2	2	3
MMK 1213	*Ofis Yazılımları*	Office Softwares	1	1	2	2	3
MMK 1203	**Seçmeli Dersler 2**	**Elective Courses 2**	**2**	**0**	**2**	**2**	**3**
MMK 1221	*İletişim*	Communication	2	0	2	2	3
MMK 1223	*Kalite Güvence Ve Standartları*	Quality Assurance and Standarts	2	0	2	2	3
MMK 1225	*Çevre Koruma*	Environmental Protection	2	0	2	2	3
MMK 1227	*Kalite Kontrol*	Qualıty Control	2	0	2	2	3
		Toplamı	**15**	**6**	**21**	**21**	**30**

1. Sınıf 2. Yarıyıl							
Türkçe/İngilizce Dersin Kodu	**Türkçe Dersin Adı**	**İngilizce Dersin Adı**	**T**	**U**	**S**	**K**	**AKTS**
MMK 1102	Sosyal Sorumluluk	Social Responsibility	1	0	1	1	1
MMK 1104	Bilgisayar Destekli Tasarım	Computer Aided Design	3	1	4	4	5
MMK 1106	Mukavemet	Strength of Materials	2	1	3	3	4
MMK 1108	Malzeme Teknolojisi	Material Technology	3	0	3	3	4
MMK 1110	CNC Torna Teknolojisi	CNC Lathe Technology	2	1	3	3	4
MMK 1112	Hidrolik ve Pnömatik	Hydraulics and Pneumatic	2	1	3	3	5
MMK 1114	İş Sağlığı ve Güvenliği	Occupational Health and Safety	2	0	2	2	2
MMK 1004	**Teknik Olmayan Seçmeli Dersler**	**Non-Technical Elective Courses**	**2**	**0**	**2**	**2**	**3**
MMK 1020	*Girişimcilik*	Entrepreneurship	**2**	**0**	**2**	**2**	**3**
MMK 1022	*İşletme Yönetimi*	Business Administration	2	0	2	2	3
MMK 1024	*İlk Yardım*	First Aid	2	0	2	2	3
MMK 1026	*Teknoloji Yönetimi*	Technology Management	2	0	2	2	3
MMK 1028	*İnovasyon Yönetimi*	Innovation Management	2	0	2	2	3
MMK 1006	**Teknik Seçmeli Dersler 1**	**Technical Elective Courses 1**	**2**	**0**	**2**	**2**	**2**
MMK 1030	*Bilgisayar Destekli Üretim Teknikleri*	Computer Aided Manufacturıng Technics	2	0	2	2	2
MMK 1032	*Endüstriyel Robotlar*	Industrial Robots	2	0	2	2	2
MMK 1034	*Kesici Takım Teknolojileri*	Cutting Tool Technologies	2	0	2	2	2
MMK 1036	*Kalıp ve Aparat Tasarımı*	Mold and Apparatus Design	2	0	2	2	2
		Toplamı	**19**	**4**	**23**	**23**	**30**

Doç. Dr. İbrahim AYDIN
Bölüm Başkanı

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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2. Sınıf 3. Yarıyıl							
Türkçe/İngilizce Dersin Kodu	**Türkçe Dersin Adı**	**İngilizce Dersin Adı**	**T**	**U**	**S**	**K**	**AKTS**
MMK 2101	Kaynak Teknolojisi	Welding Technology	2	1	3	3	4
MMK 2103	Bilgisayar Destekli Üretim	Computer Aided Manufacture	3	1	4	4	5
MMK 2105	Talaşsız İmalat Yöntemleri	Methods of Manufacturing Chipless	2	0	2	2	3
MMK 2107	CNC Freze Teknolojisi	Cnc Milling Technology	2	1	3	3	4
MMK 2109	İleri İmalat Yöntemleri	Advanced Manufacturing Methods	1	1	2	2	3
MMK 2111	Makine Elemanları	Machine Elements	1	1	2	2	3
MMK 2113	Araştırma Yöntem ve Teknikleri	Research Methods and Techniques	2	0	2	2	2
MMK 2203	**Teknik Seçmeli Dersler 2**	**Technical Elective Courses 2**	**4**	**0**	**4**	**4**	**6**
MMK 2211	*Termodinamik*	Thermodynamics	2	0	2	2	3
MMK 2213	*İş Kalıpları*	Work Molds	2	0	2	2	3
MMK 2215	*Makina Tasarımı*	Machine Desing	2	0	2	2	3
MMK 2217	*Hareket Kontrol Sistemleri*	Movement Control Systems	2	0	2	2	3
MMK 2221	*Motorlu Taşıtlar Teknolojisi*	Motor Vehicle Technology	2	0	2	2	3
MMK 2223	*Maden Makinaları*	Mining Machinery	2	0	2	2	3
MMK 2225	*Isıl İşlemler*	Heat Treatment	2	0	2	2	3
MMK 2227	*Lazer Uygulama Teknikleri*	Laser Application Techniques	2	0	2	2	3
		Toplamı	**17**	**5**	**22**	**22**	**30**

2. Sınıf 4. Yarıyıl							
Türkçe/İngilizce Dersin Kodu	**Türkçe Dersin Adı**	**İngilizce Dersin 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
		Toplamı	**17**	**0**	**17**	**16**	**30**
		GENEL TOPLAM	**68**	**15**	**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 - Machinery
Mathematics

General Description

Course Name	:	Mathematics
Course Code	:	MMK 1101
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 Osman GÜÇTEKİN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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

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Weekly Course Contents

Week 1	Theoretical	Algebra
	Practice	
	Laboratory	
Week 2	Theoretical	Polynomial operations and polynomials
	Practice	
	Laboratory	
Week 3	Theoretical	Ratio and proportion concepts and applications
	Practice	
	Laboratory	
Week 4	Theoretical	Equations and Inequalities
	Practice	
	Laboratory	
Week 5	Theoretical	Inequality
	Practice	
	Laboratory	
Week 6	Theoretical	total symbol multiplication symbol sequences
	Practice	
	Laboratory	
Week 7	Theoretical	total symbol multiplication symbol sequences
	Practice	
	Laboratory	
Week 8	Theoretical	midterm-exam
	Practice	
	Laboratory	
Week 9	Theoretical	arithmetic sequence geometric sequence infinite geometric sequence Basic geometry polygons ring and circles
	Practice	
	Laboratory	
Week 10	Theoretical	geometric objects coordinate systems Conics
	Practice	
	Laboratory	
Week 11	Theoretical	basic trigonometry
	Practice	
	Laboratory	
Week 12	Theoretical	trigonometric functions

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	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**
1	3	4	4	1	1	1	1	4	3	2	0
2	1	0	1	0	0	1	0	0	1	0	0
3	0	0	1	0	0	1	0	2	0	2	0
4	2	0	0	1	0	0	0	1	0	0	0
5	0	0	0	0	1	0	0	0	0	2	0
6	1	0	1	0	0	2	0	0	1	0	0

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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Physic

General Description

Course Name	:	Physic
Course Code	:	MMK 1103
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	:	Assoc. Prof. Dr. Etem KÖSE
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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) Physics, Bekir Karaoğlu, SEÇKİN 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

3 - To be able to know the concepts of work, power and energy and express them in relation

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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	One-dimensional-motion
	Practice	
	Laboratory	
Week 5	Theoretical	Two-dimensional-motion
	Practice	
	Laboratory	
Week 6	Theoretical	NEWTON Laws of movement
	Practice	
	Laboratory	
Week 7	Theoretical	NEWTON 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	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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	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	56,00
Individual study after lecture	Yes	7	49,00
Preparation for final	Yes	1	10,00
Preparation for midterm	Yes	1	6,00
Total Hours			125,00
ECTS			4,00

Program and Learning Outcomes Relations

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

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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Technical Drawing

General Description

Course Name	:	Technical Drawing
Course Code	:	MMK 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 Veysel TİMOÇİN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	Technical drawings to express the designer wants to ensure it is carried out part of the machine tool looks appropriate, sectioning, dimensioning, surface treatments, tolerance, etc.. teach
Recommended or Required Reading	:	1. BULUÇ MACİT "Technical Drawing I – II" Dokuz Eylül University Publication No:2 2. ÖZTAŞ NİMET, GEDİKTAŞ MUSTAFA "Technical Drawing", Çağlayan Printing house, 1988 3-ÖZÇİLİNGİR NAİL, "Technical Drawing", İstanbul 2002
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 mesaurament and give tolerance

4 - To be able to make standart mechanical parts drawing

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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	:	

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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
1	0	2	0	0	0	0	2	1	0	0	0
2	1	0	0	0	0	0	3	0	0	0	0
3	0	3	0	0	0	0	1	0	0	0	0
4	3	4	0	0	0	0	3	0	0	0	0

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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Methods of Metal Cutting

General Description

Course Name	:	Methods of Metal Cutting
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Manufacturing procedures are helpful to understand the theory and practice of adequate infrastructure and provide the viewing angle of
Course Contents	:	Factors for metal cutting, turning, lathes, turning tools, milling, milling machine tools, milling tools, stalls track fastening systems, drilling, drills, drilling machines, planing, Dragline machines, Planing Process.
Recommended or Required Reading	:	Lecture Notes in Mechanical Engineering in Manufacturing Applications
Planned Learning Activities and Teaching Methods	:	
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 general manufacturing techniques

2 - To be able to increase the ability of critising the system and its improvement

3 - To be able to choose the appropriate methods for manufacturing by understanding them

4 - Learning G codes basically

Weekly Course Contents

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Week 1	Theoretical	:	Design and manufacturing input
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Transaction management in the factory
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Turning machine tools
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Turning the process
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Milling machine tools
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	milling process Drilling with a drill
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	milling process Drilling with a drill
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Planing, Vargelleme, Grinding-I Planing Vargelleme, Grinding-II
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	broaching
	Practice	:	
	Laboratory	:	
Week 11	Theoretical	:	Honing
	Practice	:	
	Laboratory	:	
Week 12	Theoretical	:	process modeling
	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Theoretical	:	Introduction to CNC machine tools
Week 13	Practice	:	
	Laboratory	:	
	Theoretical	:	G-code CNC machine tools and software
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	5	10,00
Attending lectures	Yes	14	42,00
Individual study before lecture	Yes	5	10,00
Workshop	Yes	10	80,00
Preparation for midterm	Yes	1	4,00
Preparation for final	Yes	1	4,00
Application / Practice	Yes	4	12,00
Total Hours			164,00
ECTS			5,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Mesurment and Control

General Description

Course Name	:	Mesurment and Control
Course Code	:	MMK 1109
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 Ali İhsan BAHÇEPINAR
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	Comparators Measurement of angle and angled divisions To determine shape and positions Surface control with gauges and optical glasses Matching and gauging principles Surface Perfection Test of machining tools Measurement of screw steps Measurement of gears.
Recommended or Required Reading	:	Caliper, Micrometer, Comparator, Set of Gauge Çelik S., "Measurement and Control "Ministry of National Education Publications, İstanbul, Türkiye.
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 limits.

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebys-evrak-sorgulama adresinden yapılabilir.

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	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 11	Theoretical :	Limits and exercise systems. Manufacturing principles of limit gauges.
	Practice :	
	Laboratory :	
Week 12	Theoretical :	Usage of tolerance rulers.
	Practice :	
	Laboratory :	
Week 13	Theoretical :	Realtion between tolerance degrees and manufacturing methods of machine parts.
	Practice :	
	Laboratory :	
Week 14	Theoretical :	Right settings of machine tools for manufacturing of good quality parts.
	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	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
1	2	0	0	0	0	2	0	1	0	0	0
2	0	0	0	3	3	0	0	0	0	0	0
3	0	0	2	3	0	0	0	0	0	0	0
4	2	1	0	0	0	0	2	2	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0
6	1	2	0	2	0	0	0	1	0	0	0

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Professional Ethics

General Description

Course Name	:	Professional Ethics
Course Code	:	MMK 1111
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 Mustafa KIRMAN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	In this course students will learn ethical concept, ethical definition, moral development process, ethical rules, ethical systems, ethical relationship with society, ethical questioning, social corruption, professional ethics, ethics in business life, professional corruption.
Recommended or Required Reading	:	
Planned Learning Activities and Teaching Methods	:	
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=BSMEDFRZ9Z&eS=807394 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	:	Ethical questioning Social corruption and varieties
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Mid-term 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	:	
Week 12	Theoretical	:	Ethical and non-ethical issues in business life

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulanmak için https://turkiye.gov.tr/belge-dogrulama adresine E-İmza: 4040-D6AAEDEB7972-8C0F94 adresinden yapılabilir.

	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	30,00
Total Hours			33,00
ECTS			1,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Information and Communication Technology

General Description

Course Name	:	Information and Communication Technology
Course Code	:	MMK 1211
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 Mustafa KIRMAN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite 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 know basic computer and internet information

2 - To be able to work in Excell

3 - Tobe able to prepare a presentation with Powerpoint

4 - To be able to work in Word

Weekly Course Contents

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 1	Theoretical	:	Basic computer knowledge
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Information about internet and internet browsers
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Office programs, Word Interface, Text Operations
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Word Settings in Word
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Paragraph Settings, Page View, Tables, Drawings
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	3D settings, operations on pictures
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	File operations, general applications
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Introduction to Excel
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Create formula
	Practice	:	
	Laboratory	:	
Week 11	Theoretical	:	Formula Applications
	Practice	:	
	Laboratory	:	
Week 12	Theoretical	:	Excel Cells, Data
	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Theoretical	:	Formatting in Excel, Functions
Week 13	Practice	:	
	Laboratory	:	
	Theoretical	:	Power Point
Week 14	Practice	:	
	Laboratory	:	
	Theoretical	:	Power Point presentation
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	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
1	0	0	0	0	0	0	0	2	0	2	0
2	0	0	0	0	0	0	0	3	0	3	0
3	0	0	0	0	0	0	0	1	0	2	0
4	0	0	0	0	0	0	0	2	0	2	0

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Office Softwares

General Description

Course Name	:	Office Softwares
Course Code	:	MMK 1213
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 Mustafa KIRMAN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Competence in all aspects of ICT use office programs give needed.
Course Contents	:	Word Processing Program, Spreadsheet program, a presentation program, Internet and E-mail
Recommended or Required Reading	:	Office software books
Planned Learning Activities and Teaching Methods	:	Visual expression 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 use word processing program

2 - To be able to use tables and calculating program

3 - To be able to use presentation program

4 - To be able to prepare an effective presentation

Weekly Course Contents

Week 1 | Theoretical | Introduction to operating systems, windows operating system

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=B5MLDPRZ92&eS=807394 adresinden yapılabilir.

	Practice	:	
	Laboratory	:	
	Theoretical	:	Use of word processing programs
Week 2	Practice	:	
	Laboratory	:	
	Theoretical	:	Use of word processing programs
Week 3	Practice	:	
	Laboratory	:	
	Theoretical	:	The use of a spreadsheet calculation
Week 4	Practice	:	
	Laboratory	:	
	Theoretical	:	The use of a spreadsheet calculation
Week 5	Practice	:	
	Laboratory	:	
	Theoretical	:	use of the Internet use presentation programs
Week 6	Practice	:	
	Laboratory	:	
	Theoretical	:	use of the Internet use presentation programs
Week 7	Practice	:	
	Laboratory	:	
	Theoretical	:	Midterm-exam
Week 8	Practice	:	
	Laboratory	:	
	Theoretical	:	use presentation programs
Week 9	Practice	:	
	Laboratory	:	
	Theoretical	:	use presentation programs
Week 10	Practice	:	
	Laboratory	:	
	Theoretical	:	the use of database programs
Week 11	Practice	:	
	Laboratory	:	
	Theoretical	:	the use of database programs
Week 12	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Theoretical	:	The use of computer network systems
Week 13	Practice	:	
	Laboratory	:	
	Theoretical	:	Computer security
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	14	42,00
Application / Practice	Yes	13	13,00
Preparation for midterm	Yes	1	1,00
Project	Yes	0	0,00
Preparation for final	Yes	1	1,00
Individual study after lecture	Yes	6	36,00
Total Hours			95,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Communication

General Description

Course Name	:	Communication
Course Code	:	MMK 1221
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
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	The main elements of maintaining their own daily work life, the people can learn to help one good communication. those who manage a business or business unit, increase operational efficiency, simple and easy to make management more fully taking into account the motion characteristics of the human element in determining the benefit and will help you to teach contact information. written, oral, pictorial, graphic communication is key to ensuring success in every area of modern life. professional communication, not only to demonstrate that the key to success, but also to be enjoyed.
Course Contents	:	1 - The importance of communication in terms of the individual and society, history, communication processes. 2-functioning communication processes. types of communication. The importance of good communication is the use of third-language, communication, and spelling rules. 4-mass communication, tools, function and effects. 5-human relations, communication and benefits of the use of effective communication techniques, use of 6-7 - Factors affecting success and business life. 8-in business communication, resume preparation for the first communication, business talks, features a 9-business correspondence, reports, project preparation and effective presentation. 10 - The importance of being the team to success in business life and the importance of personal development. 11 - The importance of visual communication and technical communication tools. 12-13-graphic communication tools to use information and communication technologies and the use of the importance of faith. 14-communication skills.
Recommended or Required Reading	:	general and technical communication, communication, behavioral sciences publications. lecture notes.
Planned Learning Activities and Teaching Methods	:	assignment preparation, presentation, use of visual graphics, presentation, resume preparation, responsible Internet use.
Recommended Optional Programme Components	:	newspaper columnist, book reading alışkanlşığı. geliştirme.okul development of internal communication activities.

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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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 communication concept, importance and process.

2 - To be able to comprehend and apply the ways of communication.

3 - To be able to perceive communication problems and to reach solutions.

4 - To be able to explain communication types and models.

5 - To be able to have knowledge about the importance of organizational communication.

Weekly Course Contents

Week 1	Theoretical	:	The concept of communication, its importance, the features and functions
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	The process and elements of communication
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	The process and elements of communication
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Contact the functioning of the process
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Communication types
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Nonverbal communications Individual, social and organizational methods of communicating
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Nonverbal communications Individual, social and organizational methods of communicating
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Preventing communication elements
	Practice	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Laboratory	:	
Week 10	Theoretical	:	Ways to overcome barriers of communication
	Practice	:	
	Laboratory	:	
Week 11	Theoretical	:	Organizational communication, meaning and function
	Practice	:	
	Laboratory	:	
Week 12	Theoretical	:	The purpose of the functions and organizational communication
	Practice	:	
	Laboratory	:	
Week 13	Theoretical	:	Empathy and listening as ways of efective communication
	Practice	:	
	Laboratory	:	
Week 14	Theoretical	:	General review
	Practice	:	
	Laboratory	:	
Week 15	Theoretical	:	Overview
	Practice	:	
	Laboratory	:	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00
Assignment	Yes	1	3,00
Final	No	1	1,00
Attending lectures	Yes	13	26,00
Individual study before lecture	Yes	13	26,00
Individual study after lecture	Yes	13	26,00
Preparation for midterm	Yes	1	5,00
Preparation for final	Yes	1	5,00
Make-up	No	1	1,00
Total Hours			94,00
ECTS			3,00

Program and Learning Outcomes Relations

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Quality Assurance and Standarts

General Description

Course Name	:	Quality Assurance and Standarts
Course Code	:	MMK 1223
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	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	Standards and standardization, quality, total quality management, professional standards, CE marking
Recommended or Required Reading	:	Mehmet Emin MERTER, Total Quality Management Atlas Publishing, Ankara 2006 - Muhsin HALİS, Total Quality Management from Paradigm to Practice and ISO 9000 Quality Assurance Systems, Beta Basım Publisher, Istanbul 2000
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

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Practice :	
	Laboratory :	
	Theoretical :	Professional standards
Week 13	Practice :	
	Laboratory :	
	Theoretical :	The CE mark
Week 14	Practice :	
	Laboratory :	
	Theoretical :	
Week 15	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	14	70,00
Total Hours			100,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Environmental Protection

General Description

Course Name	:	Environmental Protection
Course Code	:	MMK 1225
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	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Provide environmental protection awareness of relevant legal regulations and the requirements for teaching
Course Contents	:	Physicochemical Processes in Environmental Management / Air and Water Pollution Monitoring and Waste Processes Principles of Physical and Chemical Analysis of Air Pollution, Water Pollution, Solid Waste Disposal / Environmental Impact Assessment / Solid Waste Management / Water Treatment Plants / Environmental Management / Environmental Microbiology / Water Quality Management / air Pollution Control / Environmental Problems in Turkey.
Recommended or Required Reading	:	Textbook, textbooks and other resources to help
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 comply with environmental and human health protection rules.

2 - To be able to revise the environmental protection measures in the workplace.

3 - To be able to use up-to-date methods by following legal regulations about environment.

4 - To be able to think about environment-related applications for future generations.

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Weekly Course Contents

Week 1	Theoretical	:	Introduction of environmental regulations, the purpose and content of short
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Environmental regulations, environmental rules specified in
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Environmental regulations regulate the working environment as specified in
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Risk analysis of the definition, purpose, conducting risk analysis related to work environment
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Interpreting the results of analysis of threat identification, risk control implementation, to take measures for the protection of workers' health, sources of potential risk mitigation measures
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Waste Management, Waste Regulations, waste control, waste reduction Natural resources, pollution, depletion of natural resources, environmental protection measures
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Waste Management, Waste Regulations, waste control, waste reduction Natural resources, pollution, depletion of natural resources, environmental protection measures
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Promotion of workers' health and safety at work regulations Individual protection measures, international health and safety alerts
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Introduction to ISO 14001 and ISO 9001 quality system standard
	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 11	Theoretical :	The importance of compliance with ISO 14001 and ISO 9001 quality system standard
	Practice :	
	Laboratory :	
Week 12	Theoretical :	International health and safety alerts
	Practice :	
	Laboratory :	
Week 13	Theoretical :	International health and safety alerts
	Practice :	
	Laboratory :	
Week 14	Theoretical :	Ventilation, lighting systems, fire-fighting and emergency intervention systems
	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
Attending lectures	Yes	10	50,00
Individual study before lecture	Yes	8	32,00
Total Hours			84,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Quality Control

General Description

Course Name	:	Quality Control
Course Code	:	MMK 1227
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	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Considering the production processes, to determine working methods to minimize the deviation from the standards. To promote the importance of quality-oriented work, at every stage from design through to customer use, by service trainings. Instead of achieving quality by extracting incorrect, aiming zero defect at the production
Course Contents	:	1 - The concept of quality and standards 2 - The elements of quality and costs 3 - business quality improvement efforts 4 - confection error sources, error classification methods and quality control system 5 - statistical quality control 6 - total quality management, training, and ISO standards for qualityfied work
Recommended or Required Reading	:	1-Ins. Serpil Kaya, QUALITY CONTROL IN APPAREL, Publishing E.Ü.T. Textile and Apparel Research and Application Center, İZMİR, 2001 2-DR.MÜH.Üzeyme Doğan, QUALITY MANAGEMENT AND CONTROL, İstiklal printing, İZMİR, 1991 3-Prof.Dr.Mahmut Doğan, QUALITY ASSURANCE AND STANDARDS, Günay Offset, KONYA, 2006
Planned Learning Activities and Teaching Methods	:	As teaching methods and techniques; expression, problem solving, question-answer, group work, research and the individual teaching methods and techniques can be applied.
Recommended Optional Programme Components	:	Seminars and practices can be accomplished in cooperation with Public and private sector companies, universities, chambers of industry.

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 the concept of quality

2 - To be able to have the necessary information to establish and operate quality control system in appare industry

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

3 - To be able to have knowledge about statistical quality control and practice this knowledge in the field of confection

4 - To be able to have knowledge about total quality management and the international quality standards

Weekly Course Contents

Week 1	Theoretical	:	The concept and definition of quality. Past and present perspectives of the quality.
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Quality variability and quality standards
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Elements of quality
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Quality costs
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Quality improvement efforts businesses and causes of failure in quality programs
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Quality control system at clothing
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Confection error sources and control methods
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Pareto analysis
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Ishikawa diagram
	Practice	:	
	Laboratory	:	
Week 11	Theoretical	:	Education for job quality

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması: https://turkiyegezi.gov.tr/ebd1e42-4049-8ce3-1ba1fDFRZ9Z&eS=807394 adresinden yapılabilir.

	Practice :	
	Laboratory :	
	Theoretical :	Statistical quality control
Week 12	Practice :	
	Laboratory :	
	Theoretical :	Statistical quality control
Week 13	Practice :	
	Laboratory :	
	Theoretical :	Total quality management
Week 14	Practice :	
	Laboratory :	
	Theoretical :	
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	14	84,00
Preparation for midterm	Yes	1	5,00
Preparation for final	Yes	1	8,00
Total Hours			99,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Social Responsibility

General Description

Course Name	:	Social Responsibility
Course Code	:	MMK 1102
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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	
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.

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	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
1	1	2	0	0	2	0	0	0	0	2	2
2	0	1	0	0	1	0	0	0	0	1	1
3	0	1	0	0	1	0	0	0	0	1	1
4	1	2	0	0	2	0	0	0	0	2	1

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Computer Aided Design

General Description

Course Name	:	Computer Aided Design
Course Code	:	MMK 1104
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 Mustafa KIRMAN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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 abl e 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 aplication 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

4 - To be able to make tolerance to produce drawing

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Weekly Course Contents

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Theoretical	:	Drawing applications
Week 12	Practice	:	Drawing applications
	Laboratory	:	
	Theoretical	:	Drawing applications
Week 13	Practice	:	Drawing applications
	Laboratory	:	
	Theoretical	:	Drawing applications
Week 14	Practice	:	Drawing applications
	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	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
1	0	1	0	0	0	0	3	0	0	0	0
2	0	3	1	0	0	0	3	0	0	0	0
3	1	2	0	0	0	0	1	0	1	0	0
4	1	3	0	3	0	0	2	0	0	1	0

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Strength of Materials

General Description

Course Name	:	Strength of Materials
Course Code	:	MMK 1106
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	:	Assoc. Prof. Dr. Etem KÖSE
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	External loads on structures, support types of structures and reaction forces, internal forces and section method. Stress: Normal, shear stresses; Torsion; Pure bending; shear force and bending moment in beams; Shear force and bending moment diagrams;
Recommended or Required Reading	:	1. Beer, F.P., Johnston, E.R., Strength of objects, ISBN: 975-295-187-2, Beta publications, 2003, İstanbul, Türkiye. 2. Curun, N., "Cisimlerin Dayanımı", Ministry of Education 3. Sayman, O., Aksoy, S., Erim, S., Akbulut, H., Strength I, Dokuz Eylül University Engineering Faculty Publications No. 244, 2004, İzmir, Türkiye. 4. Sayman, O., Karakuzu, R., Zor, M., Şen, F., Strength II, Dokuz Eylül University Engineering Faculty Publications No. 250, 2004, İzmir, Türkiye. 5. Savcı, M., Arpacı, A., Strength , ISBN: 975-511-106-9, Birsen Publisher, 1999, İstanbul, Türkiye. 6. Omurtag, M.H., Strength , Volume I ve II, Printing House, 2005, İstanbul, Türkiye.
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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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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

4 - To be able to be aware of their responsibilities to society while performing their professions, especially 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	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/belge-bd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Laboratory	:
	Theoretical	: axially loaded bars
Week 11	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	64,00
Assignment	Yes	4	16,00
Individual study before lecture	Yes	8	32,00
Total Hours			114,00
ECTS			4,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Material Technology

General Description

Course Name	:	Material Technology
Course Code	:	MMK 1108
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	:	Assoc. Prof. Dr. Mehmet AYVAZ
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	A. The materials used in the technical field B. Atomic structure and bond strengths C. Solidification - the melting behaviour D. Iron - Carbon equilibrium diagram E. Destructive tests F. Polymers G. Composites H. Non-destructive testing methods İ. The heat treatment methods J. Methods of surface hardening K. Corrosion and Corrosion Protection.
Recommended or Required Reading	:	1- KAYALI, E. SABRİ; ENSARİ, CAHİT; DİKEÇ, FERİDUN " Mechanical Experiments of Metallic Materials "İ.T.Ü. Department of Metallurgy and Materials 1978 2- ONARAN, Kaşif "Material science" Bilim Teknik Publisher 1999 3- WEISSBACH, WOLFGANG (ANIK, SELAHADDİN; ANIK, E.SABRİ; VURAL,MURAT)"Material Information and Examination" Birsen Publisher 1998 4- T. NEJDET, "Introduction to Materials Science ", Arpaz Typography, 1983 5- M.Y. GÜRLEYİK, "Material Information and Examination" ,KTÜ, 1988 6- Savaşkan, Temel, "Material Information and Examination",Derya Publisher, 2000, Trabzon
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.

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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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).

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd...&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	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	30,00
Final	No	1	75,00
Total Hours			105,00
ECTS			4,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
CNC Lathe Technology

General Description

Course Name	:	CNC Lathe Technology
Course Code	:	MMK 1110
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 Mustafa KIRMAN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	This course is preparation for work with a CNC lathe, the program aims at teaching the competencies to make writing and production.
Course Contents	:	Cnc lathe parts and features of this course, students will learn the rules of technical drawing was drawn by the work-piece to the picture by using the appropriate speed and feed işleyebillecektir.
Recommended or Required Reading	:	Manual CNC Lathe, CNC Lathe programming commands, instructions, computer programs for use in the computer.
Planned Learning Activities and Teaching Methods	:	Lectures, group work, application, platinum again
Recommended Optional Programme Components	:	Using what they have learned this lesson the student programmer cnc lathe machine industry olabilir.Aynı time doing what they have learned in different parts of the program can handle more ilerletirse macro.

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 get zero dots on parts.

2 - To be able to make properties of resetting elements.

3 - To be able to set the tool to zero according to the part to be machined.

4 - To be able to adjust the elements and properties used in tool setting.

5 - To be able to make cutting depth, process angle and progress.

6 - To be able to do tool roughing depth calculation.

7 - To be able to adjust the connecting apparatuses.

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

8 - To be able to use binding control devices.

9 - To be able to do workpiece zeroing methods.

Weekly Course Contents

Week 1	Theoretical	:	CNC lathe with features CNC lathe parts Principles of operation of CNC lathe
	Practice	:	CNC lathe with features CNC lathe parts Principles of operation of CNC lathe
	Laboratory	:	CNC lathe with features CNC lathe parts Principles of operation of CNC lathe
Week 2	Theoretical	:	Coordinate axes of counter reference points Types of control panels Control panel buttons and features
	Practice	:	Coordinate axes of counter reference points Types of control panels Control panel buttons and features
	Laboratory	:	Coordinate axes of counter reference points Types of control panels Control panel buttons and features
Week 3	Theoretical	:	Relationship between the cutter and workpiece material Cutting Types, properties and uses of Team compensation settings Tool holders and fasteners
	Practice	:	Relationship between the cutter and workpiece material Cutting Types, properties and uses of Team compensation settings Tool holders and fasteners
	Laboratory	:	Relationship between the cutter and workpiece material Cutting Types, properties and uses of Team compensation settings Tool holders and fasteners
Week 4	Theoretical	:	The zero points of the part The properties of the elements used in resetting Resetting tool with respect to the workpiece The elements used in tool settings and features. Coordinate axes the lathe Reference points Control panel types Control panel buttons and features
	Practice	:	The zero points of the part The properties of the elements used in resetting Resetting tool with respect to the workpiece The elements used in tool settings and features. Coordinate axes the lathe Reference points Control panel types Control panel buttons and features
	Laboratory	:	The zero points of the part The properties of the elements used in resetting Resetting tool with respect to the workpiece The elements used in tool settings and features. Coordinate axes the lathe Reference points Control panel types Control panel buttons and features
Week 5	Theoretical	:	Cutting depth, angle, and advances in treatment given Team depth account of rough fixtures Connecting the control equipment Business part of the reset methods
	Practice	:	Cutting depth, angle, and advances in treatment given Team depth account of rough fixtures Connecting the control equipment Business part of the reset methods
	Laboratory	:	Cutting depth, angle, and advances in treatment given Team depth account of rough fixtures Connecting the control equipment Business part of the reset methods
Week 6	Theoretical	:	CNC programming principles looms Positioning systems, Processing and preparation instructions Auxiliary commands special commands Motion systems, CNC lathes coordinate systems movement patterns types of control axes
	Practice	:	CNC programming principles looms Positioning systems, Processing and preparation instructions Auxiliary commands special commands Motion systems, CNC lathes coordinate systems movement patterns types of control axes
	Laboratory	:	CNC programming principles looms Positioning systems, Processing and preparation instructions Auxiliary commands special commands Motion systems, CNC lathes coordinate systems movement patterns types of control axes

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 7	Theoretical	:	CNC programming principles looms Positioning systems, Processing and preparation instructions Auxiliary commands special commands Motion systems, CNC lathes coordinate systems movement patterns types of control axes
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	The definition and importance of simulation simulation programs running a program Cycles using a CNC lathe programming
	Practice	:	The definition and importance of simulation simulation programs running a program Cycles using a CNC lathe programming
	Laboratory	:	The definition and importance of simulation simulation programs running a program Cycles using a CNC lathe programming
Week 10	Theoretical	:	Cycles using a CNC lathe programming
	Practice	:	Cycles using a CNC lathe programming
	Laboratory	:	Cycles using a CNC lathe programming
Week 11	Theoretical	:	Sub-programming technique Old programming structure
	Practice	:	Sub-programming technique Old programming structure
	Laboratory	:	Sub-programming technique Old programming structure
Week 12	Theoretical	:	CNC lathe programming using sub-program
	Practice	:	CNC lathe programming using sub-program
	Laboratory	:	CNC lathe programming using sub-program
Week 13	Theoretical	:	The alarm options on CNC lathes. Error codes used to program the Progress in the counter mode settings
	Practice	:	The alarm options on CNC lathes. Error codes used to program the Progress in the counter mode settings
	Laboratory	:	The alarm options on CNC lathes. Error codes used to program the Progress in the counter mode settings
Week 14	Theoretical	:	Measurement and control
	Practice	:	Measurement and control
	Laboratory	:	Measurement and control
Week 15	Theoretical	:	Overview
	Practice	:	
	Laboratory	:	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	1,00

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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Final	No	1	1,00
Attending lectures	Yes	14	42,00
Application / Practice	Yes	14	42,00
Laboratory	Yes	5	20,00
Individual study before lecture	Yes	6	6,00
Individual study after lecture	Yes	6	6,00
Workshop	Yes	5	10,00
Total Hours			128,00
ECTS			4,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Hydraulics and Pneumatic

General Description

Course Name	:	Hydraulics and Pneumatic
Course Code	:	MMK 1112
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
Prequisite 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	:	Basic principles of hydraulics, Hydraulic elements (components) and circuits, Electro-hydraulics circuits, Basic principles of Pneumatic, Pneumatic elements (components) and circuits, Electro-pneumatic circuits
Recommended or Required Reading	:	1.Denktaş, M., Hydraulic and Pneumatic Systems, Undergraduate Publishing 2.Karacan I., Hydraulic and pneumatic, Simav 3. Small M., Hydraulic Pneumatic, Ministry of Education Publications., 4. Power Hydrology, Ministry of National Education Publications., 5. Improvement of hydraulic failure search ability, Ministry of National Education Publications., 6. Improvement of pneumatic failure search ability, Ministry of Education Publications.
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

Bu belge, güvenli elektronik imza ile imzalanmıştır.
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3 - To be able to recognize electro-hydraulic elements and explain their operation with examples

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

9 -

Weekly Course Contents

Week 1	Theoretical	:	Understanding the hydraulic circuit elements
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	
	Practice	:	
	Laboratory	:	Hydraulic circuit diagram to create
Week 3	Theoretical	:	
	Practice	:	
	Laboratory	:	Hydraulic and electro-hydraulic circuit diagram to create
Week 4	Theoretical	:	
	Practice	:	Detecting failures in hydraulic systems
	Laboratory	:	
Week 5	Theoretical	:	
	Practice	:	Resolve hydraulic failures
	Laboratory	:	
Week 6	Theoretical	:	Understanding the pneumatic circuit elements Pneumatic circuit diagram to create
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Understanding the pneumatic circuit elements Pneumatic circuit diagram to create
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	
	Practice	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Laboratory	:	Electro-pneumatic circuit diagram to create
	Theoretical	:	
Week 10	Practice	:	Detecting failures in pneumatic systems
	Laboratory	:	
	Theoretical	:	
Week 11	Practice	:	Resolve pneumatic failures
	Laboratory	:	
	Theoretical	:	
Week 12	Practice	:	Make periodic checks of systems
	Laboratory	:	
	Theoretical	:	
Week 13	Practice	:	Periodic maintenance of the systems do
	Laboratory	:	
	Theoretical	:	
Week 14	Practice	:	To repair a defective machine
	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 before lecture	Yes	4	16,00
Individual study after lecture	Yes	8	64,00
Application / Practice	Yes	8	64,00
Total Hours			146,00
ECTS			5,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

4	0	0	0	0	0	2	0	0	4	0	0
5	0	0	0	0	0	0	0	0	0	3	0
6	0	3	0	0	0	0	0	0	2	0	0
7	0	0	0	0	0	2	0	0	0	0	0
8	0	2	0	0	0	0	0	0	4	3	0
9	0	0	0	0	0	0	0	0	0	0	0

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Occupational Health and Safety

General Description

Course Name	:	Occupational Health and Safety
Course Code	:	MMK 1114
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 HASAN ZEKİ DİRİL
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	The concept of job security and the basic principles, measures related to electricity use, machinery and related measures, first aid, personal protectors, safety at work legislation
Recommended or Required Reading	:	The textbook, textbooks and other resources to help
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 İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 1	Theoretical	First Aid training
	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	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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	6	60,00
Total Hours			62,00
ECTS			2,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery Entrepreneurship

General Description

Course Name	:	Entrepreneurship
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	This course enables to gain the key factors for the students who will be engaged to work in private sector, and also entrepreneurial cultures to those who have the potential to work. It is aimed that the students who have the potential of entrepreneurship are able to use and develop these features. Examination of the examples and creation of new ideas, legal, financial, economical evaluation of entrepreneurship will increase the motivation of the students. Students who are successful in this course will also be entitled to Small and Medium Sized Enterprises Development Organisation "ENTREPRENEURSHIP" certificate.
Course Contents	:	Testing of entrepreneurial characteristics, business idea development and creativity exercises, business plan concept and items (market research, marketing plan, production plan, production plan, management plan, financial plan), Workshop studies to consolidate business plan items, Writing and presentation of the business plan.
Recommended or Required Reading	:	1. Yavuz Odabaşı (editor), Entrepreneurship, Anadolu University Publishing no: 1567, 2004.2. Tamer Müftüoğlu and Tülin Durukan,Entrepreneurship and Small and Medium Sized Enterprises, Gazi Book store, 20043. Semra Arıkan, Entrepreneurship: Basic Concepts and Some current issues, Siyasal Bookstore, 2002.4. R. Hisrich, Michael Peters ve Dean Shepherd, Entrepreneurship, McGraw Hill, Fourth Edition, 2006.5. G. Yukl, Leadership in Organizations, Prentice Hall, 20066. Leaders and the Leadership Process Readings, Self-Assessments, and Applications, Pierce, McGraw Hill, 2003 7. P.Lambing ve C.Kuehl, Entrepreneurship, Prentice Hall, 4. Edition, 2007. ISBN: 0-13-228174-0.
Planned Learning Activities and Teaching Methods	:	
Recommended Optional Programme Components	:	

Learning Outcomes

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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

1 - To be able to question the characteristics of his own entrepreneurship from the characteristics of entrepreneurship

2 - To be able to compare the activities related to types of entrepreneurship

3 - To be able to develop his own entrepreneurship characteristics by evaluating entrepreneurship traits of successful entrepreneurship

4 - To be able to comprehend opportunities for the appropriate sector by learning about the obstacles and incentives in entrepreneurship

5 - To be able to structure the career plan as an entrepreneur by taking examples of successful entrepreneurship

Weekly Course Contents

Week 1	Theoretical	:	Basic concepts of entrepreneurship and entrepreneurshipFactors affecting entrepreneurship, testing entrepreneurial characteristics,
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Testing of entrepreneurship features, business idea development and creativity exercises
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Responsible entrepreneurship concept and sharing of experience
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Business concept, business functions
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Types of businesses, types of organizations
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Financial and legal responsibilities Business plan concept and items (Market research, Marketing plan)
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Financial and legal responsibilities Business plan concept and items (Market research, Marketing plan)
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Mid-term Exam
	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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Week 9	Theoretical	:	Business plan concept and items (Production plan)
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Business plan concept and items (Management plan)
	Practice	:	
	Laboratory	:	
Week 11	Theoretical	:	Business plan concept and items (Financial Plan)
	Practice	:	
	Laboratory	:	
Week 12	Theoretical	:	Workshop studies on business model and business plan (Market research, Marketing plan)
	Practice	:	
	Laboratory	:	
Week 13	Theoretical	:	Workshop studies on business model and work plan (Production plan)
	Practice	:	
	Laboratory	:	
Week 14	Theoretical	:	Workshop studies on business model and work plan (management plan)
	Practice	:	
	Laboratory	:	
Week 15	Theoretical	:	Workshop studies on business model and business plan (Financial plan)
	Practice	:	
	Laboratory	:	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	0	0,00
Final	No	0	0,00
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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5	0	2	0	0	0	0	0	0	0	0	1

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Business Administration

General Description

Course Name	:	Business Administration
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	The purpose of this course is to introduce students the many facets of the private enterprise system and of the businesses that operate within it. Topics include, basic concepts and definitions of business, the various functional areas of business such as, production, marketing, finance, and human resources. In order to achieve the purpose as stated case studies are introduced.
Course Contents	:	This module is concerned with the various functional areas of business such as, management and organisation, production, marketing, finance, P&D, R&D and human resources.
Recommended or Required Reading	:	Can, H, Tuncer, D, Ayhan, D.Y, General Business Information, Political Publications, Ankara, 2005.Akdemir, A, Introduction to Business Science, Turkey 1996.Erdal Türkkan, Competition Theory and Industrial Economics, Turhan Bookstore, Ankara, 2001
Planned Learning Activities and Teaching Methods	:	
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 understands the emerging contextual perspectives of the global business environment

2 - To be able to works effectively in the cross-functional teams prevalent in todays work World

3 - To be able to Synthesizes knowledge from related disciplines to conceptualize problems

4 - To be able to knowledge from related identify best practice

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Weekly Course Contents

Week 1	Theoretical	Introduction, basic concepts and definitions of business
	Practice	
	Laboratory	
Week 2	Theoretical	Management administrator
	Practice	
	Laboratory	
Week 3	Theoretical	Definition of business, purpose
	Practice	
	Laboratory	
Week 4	Theoretical	classification of businesses
	Practice	
	Laboratory	
Week 5	Theoretical	classification of businesses, partnerships, corporations, cooperative
	Practice	
	Laboratory	
Week 6	Theoretical	Personnel managementplanning, objectives and principles
	Practice	
	Laboratory	
Week 7	Theoretical	Personnel managementplanning, objectives and principles
	Practice	
	Laboratory	
Week 8	Theoretical	Midterm-exam
	Practice	
	Laboratory	
Week 9	Theoretical	The organization, objectives and principlescoordination, objectives and principles
	Practice	
	Laboratory	
Week 10	Theoretical	Supervision, inspection types
	Practice	
	Laboratory	
Week 11	Theoretical	Production systems
	Practice	
	Laboratory	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Theoretical	:	The importance of standardization of quality assurance in production
Week 12	Practice	:	
	Laboratory	:	
	Theoretical	:	Research presentation
Week 13	Practice	:	
	Laboratory	:	
	Theoretical	:	Research presentation and general assessmen
Week 14	Practice	:	
	Laboratory	:	
	Theoretical	:	Overview
Week 15	Practice	:	
	Laboratory	:	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	0	0,00
Final	No	0	0,00
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
First Aid

General Description

Course Name	:	First Aid
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Grasping the importance of giving first aid and first aid information
Course Contents	:	General first aid information
Recommended or Required Reading	:	Textbook, textbooks and other resources to help
Planned Learning Activities and Teaching Methods	:	
Recommended Optional Programme Components	:	Conferences, presentations, projects, practical lessons, laboruvar (if necessary)

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 know first aid in situations that require applications to

2 - To be able to apply their skills to use in case of emergency first aid information

3 - To be able to rapid assessment, decision-making skills to use and apply

4 - To be able to first-aid tools and supplies needed for the application now and rapidity

Weekly Course Contents

Week 1 Theoretical : How can a life-threatening emergency is detected

Bu belge, güvenli elektronik imza ile imzalanmıştır.
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	Practice	:	
	Laboratory	:	
	Theoretical	:	How and When We should act in accordance with the Emergency Medical System
Week 2	Practice	:	
	Laboratory	:	
	Theoretical	:	How makes the difference as a Result of an Emergency
Week 3	Practice	:	
	Laboratory	:	
	Theoretical	:	How to Make a Basic Life Support
Week 4	Practice	:	
	Laboratory	:	
	Theoretical	:	Emergency Response
Week 5	Practice	:	
	Laboratory	:	
	Theoretical	:	Survival Chain
Week 6	Practice	:	
	Laboratory	:	
	Theoretical	:	Medical Emergency
Week 7	Practice	:	
	Laboratory	:	
	Theoretical	:	Midterm exam
Week 8	Practice	:	
	Laboratory	:	
	Theoretical	:	Emergency First Aid Techniques
Week 9	Practice	:	
	Laboratory	:	
	Theoretical	:	What are normal body functions / What are the Normal Heart and Lung Functions
Week 10	Practice	:	
	Laboratory	:	
	Theoretical	:	Heart attack and / or stroke What are the Risk Factors for State
Week 11	Practice	:	
	Laboratory	:	
	Theoretical	:	First Aid Case of Heart Attack and Stroke
Week 12	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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	Theoretical	:	In case of choking First Aid
Week 13	Practice	:	
	Laboratory	:	
	Theoretical	:	General principles of triage
Week 14	Practice	:	
	Laboratory	:	
	Theoretical	:	Signs and Symptoms of Sudden Illness
Week 15	Practice	:	
	Laboratory	:	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	0	0,00
Final	No	0	0,00
Total Hours			0,00
ECTS			0,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery Technology Management

General Description

Course Name	:	Technology Management
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	To introduce methods and models which are used in technology management at comprehensive and interpretive level.
Course Contents	:	Create value from science and technology. Critical factors in technology management. Sources and types of the innovations. Case analysis on innovation. Technology and competitiveness of the company. Basic competences and technology life cycle. The commercialitaiton of the tehnology. Technology stratey. Technology planning. Technology transfer. Green technology management. National innovation systems.
Recommended or Required Reading	:	1. Robert C. Megantz, Technology Management: Developing and Implementing Effective Licensing Programs, 2002, Wiley. 2. M. V. Zedtwitz, G. Haour, T. Khalil, Management of Technology, 2003, Pergamon Press. 3. Joseph Tidd, Joe Tidd (Ed.), From Knowledge Management to Strategic Competence: Measuring Technological, Market and Organizational Innovation (Technology Management), 2000, Imperial College Press. 4. Schilling, Strategic Management of Technological Innovation, 2009, McGraw-Hill. 5. Brown, C.V., DeHayes, D.W., Hoffer, J.A. & Martin, W.E., Managing Information Technology, 2011, Prentice Hall. 6. Betz, F. Managing Technological Innovation: Competitive Advantage from Change, 2011, John Wiley & Sons.
Planned Learning Activities and Teaching Methods	:	Oral Presentation, Computer Based Presentation, Question-Answer
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 improve knowledge and faculty continously to adabt the rapidly changing techonological environment and to find methods of improving existing information

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2 - To be able to express his ideas and findings effectively either oral or written as regards the subject of the research

3 - To be able to define the advanced level strategy science concept

4 - To be able to explain the general definitions, terms and principals which are used in technology menagement

Weekly Course Contents

Week 1	Theoretical	:	Introduction
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Create value from science and technology
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Create value from science and technology
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Critical factors in technology management
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Sources and types of the innovations
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Case analysis on innovation
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Technology and competitiveness of the company
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Basic competences and technology life cycle
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Midterm exam
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Commercialization of technology
	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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	Theoretical	:	Commercialization of technology
Week 11	Practice	:	
	Laboratory	:	
	Theoretical	:	Technology strategy
Week 12	Practice	:	
	Laboratory	:	
	Theoretical	:	Technology planning
Week 13	Practice	:	
	Laboratory	:	
	Theoretical	:	Technology transfer
Week 14	Practice	:	
	Laboratory	:	
	Theoretical	:	Green technology management
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	14	28,00
Individual study before lecture	Yes	14	28,00
Individual study after lecture	Yes	14	28,00
Preparation for midterm	Yes	1	4,00
Preparation for final	Yes	1	4,00
Total Hours			94,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Innovation Management

General Description

Course Name	:	Innovation Management
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	The objective of this course is to draw on various theoretical foundations and business cases to develop an understanding of the factors that lead to successful innovation in organizations and manage innovation.
Course Contents	:	Innovation: Introduction and Challenges, Innovation Management: Introduction, Innovation in Context: Business Environment, Role of the State, Impact of Technology, Innovation Process, Innovation: Major theories, Innovation: Creativity and Human Factors Individual, Team, and Leadership, Managing innovation within firms, Managing intellectual property, Managing organizational knowledge, Management of research and development, New product development & service innovation, Open innovation and technology transfer
Recommended or Required Reading	:	Trott, P. (2008). Innovation Management and New Product Development, 4th ed. Harlow: Pearson. Millson, M. & Wilemon, D. (2007). The Strategy of Managing Innovation and Technology. Prentice Hall. Tidd J, and Bessant J. (2009) Managing Innovation 4th Edition. John Wiley and Sons, Chichester, UK
Planned Learning Activities and Teaching Methods	:	Oral Presentation, Computer Based Presentation, Question-Answer
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 learn the various types of innovation in organizations

2 - To be able to understand on the major organizational barriers to innovation and creativity

3 - To be able to understand the roles played by leadership and organizational design factors in innovation

Bu belge, güvenli elektronik imza ile imzalanmıştır.
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4 - To be able to have information on the steps in the innovation process, and mechanisms for directing and controlling the process

5 - To be able to understand contextual influences on innovation within organizations

Weekly Course Contents

Week 1	Theoretical	:	Innovation
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Innovation Management: Introduction
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Innovation in Context: Business Environment, Role of the State
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Innovation in Context: Impact of Technology
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Innovation Process
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Innovation: Major theories
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Creativity and Human Factors Individual
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Team, and Leadership
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Midterm exam
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Managing innovation within firms
	Practice	:	
	Laboratory	:	
Week 11	Theoretical	:	Managing intellectual property

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Practice :	
	Laboratory :	
	Theoretical :	Management of research and development
Week 12	Practice :	
	Laboratory :	
	Theoretical :	New product development & service innovation
Week 13	Practice :	
	Laboratory :	
	Theoretical :	New product development & service innovation
Week 14	Practice :	
	Laboratory :	
	Theoretical :	Open innovation and technology transfer
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**
1	1	0	0	0	0	0	0	0	0	2	2
2	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0
4	1	0	2	3	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	2	0	2	2

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Computer Aided Manufacturıng Technics

General Description

Course Name	:	Computer Aided Manufacturıng Technics
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	To gain the ability to create the toolpaths for CNC milling machines on 2D and 3D drawings by using the CAM programmes.
Course Contents	:	To define the block to be processed and the 2D 3D designs to the CAM programme, To define the coordinate system, To define the types of operations, cutters and cutting parameters. To generate the toolpath and To obtain the G-codes. To process the tool.
Recommended or Required Reading	:	UGN3 Totorials
Planned Learning Activities and Teaching Methods	:	
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 use the 2D modul of CAD programme

2 - To be able to use the 3D modul of CAD programme

3 - To be able to create the tool way and simulate them

4 - To be able select the Post Processor and generate G-code

5 - To be able do executions between the computer and machine.

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Weekly Course Contents

Week 1	Theoretical	UGNX interface, New, Open, Save, Exit
	Practice	
	Laboratory	
Week 2	Theoretical	Drawing commands and workpiece coordinate sytem
	Practice	
	Laboratory	
Week 3	Theoretical	MCS, Definition of part and block , milling operations
	Practice	
	Laboratory	
Week 4	Theoretical	Rough milling and definition of tools
	Practice	
	Laboratory	
Week 5	Theoretical	Definition of cutting parameters
	Practice	
	Laboratory	
Week 6	Theoretical	Toolpath generation and simulation
	Practice	
	Laboratory	
Week 7	Theoretical	Toolpath generation and simulation
	Practice	
	Laboratory	
Week 8	Theoretical	Mid-term exam
	Practice	
	Laboratory	
Week 9	Theoretical	Rest machiningFinish operations
	Practice	
	Laboratory	
Week 10	Theoretical	Finish operations
	Practice	
	Laboratory	
Week 11	Theoretical	2,5 Axis milling
	Practice	
	Laboratory	
Week 12	Theoretical	Drilling

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Practice :	
	Laboratory :	
	Theoretical :	Text machining
Week 13	Practice :	
	Laboratory :	
	Theoretical :	Postprocess and machining
Week 14	Practice :	
	Laboratory :	
	Theoretical :	Overview
Week 15	Practice :	
	Laboratory :	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	20,00
Final	No	1	40,00
Total Hours			60,00
ECTS			2,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Industrial Robots

General Description

Course Name	:	Industrial Robots
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Aim of the course is to provide students with the basic definitions of robots, the basic analysis of robot arms motion and robot control
Course Contents	:	Basic Definition and Classifications of Robots, Mechanical Elements of Robots, Drive Systems, Robot Sensors, Kinematics and Kinetics of Robot Arm, Programming Robots
Recommended or Required Reading	:	Asfahl, C. Ray.,Robots and manufacturing automation. John Wiley, New York, 1992.2. Hodges, B., İndustrial robotics, Heinemann Newnes, London, 1990.
Planned Learning Activities and Teaching Methods	:	
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 describe and classify robots

2 - To be able to do describe parts of a robot

3 - To be able to do carry out basic analyses of the motion of robot arm

4 - To be able to do robot-programming

Weekly Course Contents

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 1	Theoretical	:	Basic Definitions
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Classifications of Robots
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Robot Coordinate Systems
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Robot Drive Mechanisms
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	End of Robot Arm Tooling
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Robot power systems Kinematics of Robot Arm Motion
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Robot power systems Kinematics of Robot Arm Motion
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Kinetics of Robot Arm Motion Applications of Robot Dynamics
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Trajectory Generation in Robots
	Practice	:	
	Laboratory	:	
Week 11	Theoretical	:	Robot Control
	Practice	:	
	Laboratory	:	
Week 12	Theoretical	:	Robot Sensors
	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Theoretical	:	Programming in Robots
Week 13	Practice	:	
	Laboratory	:	
	Theoretical	:	Robot Application
Week 14	Practice	:	
	Laboratory	:	
	Theoretical	:	Overview
Week 15	Practice	:	
	Laboratory	:	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	20,00
Final	No	1	40,00
Total Hours			60,00
ECTS			2,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Cutting Tool Technologies

General Description

Course Name	:	Cutting Tool Technologies
Course Code	:	MMK 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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite 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.

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Practice :	
	Laboratory :	
Week 13	Theoretical :	Cutting tool selection criteria and tool selection
	Practice :	
	Laboratory :	
Week 14	Theoretical :	Docking angle, negative and positive sets, corner radii effect
	Practice :	
	Laboratory :	
Week 15	Theoretical :	Cutting tool coating methods and effects of coating Cutter and tool holder standards
	Practice :	
	Laboratory :	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Final	No	1	20,00
Midterms	Yes	1	40,00
Total Hours			60,00
ECTS			2,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Mold and Apparatus Design

General Description

Course Name	:	Mold and Apparatus Design
Course Code	:	MMK 1036
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	:	Assoc. Prof. Dr. İBRAHİM AYDIN
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite 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 comprhended.
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=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Practice :	
	Laboratory :	
	Theoretical :	Ability to calculate pressure Types of tools for various machine tools
Week 2	Practice :	
	Laboratory :	
	Theoretical :	Usage of various machine tools Usage of equipment and tools
Week 3	Practice :	
	Laboratory :	
	Theoretical :	Ability to use hand tools Ability to provide hand-eye coordination
Week 4	Practice :	
	Laboratory :	
	Theoretical :	Heat treatment techniques Mold practice operations
Week 5	Practice :	
	Laboratory :	
	Theoretical :	Mold types Ability to make mold and press settings
Week 6	Practice :	
	Laboratory :	
	Theoretical :	Mold types Ability to make mold and press settings
Week 7	Practice :	
	Laboratory :	
	Theoretical :	Mid-term Exam
Week 8	Practice :	
	Laboratory :	
	Theoretical :	Methods of attaching molds and tooling Usage of molds and tooling
Week 9	Practice :	
	Laboratory :	
	Theoretical :	Preparation and usage of cutting fluids and oils Control and application techniques
Week 10	Practice :	
	Laboratory :	
	Theoretical :	General characteristics of used materials and products Defect detection and removal methods
Week 11	Practice :	
	Laboratory :	
	Theoretical :	Inspection and testing techniques Ability to use NC / CNC machining programs
Week 12	Practice :	
	Laboratory :	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

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

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Final	No	1	2,00
Application / Practice	Yes	2	40,00
Attending lectures	Yes	2	20,00
Total Hours			64,00
ECTS			2,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Welding Technology

General Description

Course Name	:	Welding Technology
Course Code	:	MMK 2101
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 Veysel TİMOÇİN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Modern welding methods and their applications to be informed about.
Course Contents	:	Modern welding methods and application areas Weld capabilities of metals and metallurgical examination of weldability Welded construction, and strength accounts Quality assurance and control on weld.
Planned Learning Activities and Teaching Methods	:	Lectures, Practical Courses, Presentation, Seminar, Project, Laboratory Applications (if necessary)
Recommended or Required Reading	:	
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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	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	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	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	14	70,00
Application / Practice	Yes	14	56,00
Total Hours			128,00
ECTS			4,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Computer Aided Manufacture

General Description

Course Name	:	Computer Aided Manufacture
Course Code	:	MMK 2103
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 Mustafa KIRMAN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	The content of this course is designed in three-dimensional piece of machinery or mold part of the 3.4 or 5-axis CNC milling machine tool commands to process simulation, monitoring and G removal.
Recommended or Required Reading	:	CAD / CAM textbooks, computers, CAD / CAM program.
Planned Learning Activities and Teaching Methods	:	Question and answer, group work, commentary, Application, Presentation, Practice again
Recommended Optional Programme Components	:	Learning from this course, providing the basis for serial production CAD / CAM specialist or plastic injection molding industry sinker, sinker or metal sinker Hair may

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 machining part and choose cutting tool and tool holder to be used and create them.

2 - To be able to do 4-5 axis milling process

3 - To be able to design (3-D) of work piece.

4 - To be able to create a technical drawing of the workpiece.

Weekly Course Contents

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 1	Theoretical	:	Two-dimensional section of the workpiece transfer process The team to appear in the path of
	Practice	:	Two-dimensional section of the workpiece transfer process The team to appear in the path of
	Laboratory	:	Two-dimensional section of the workpiece transfer process The team to appear in the path of
Week 2	Theoretical	:	Choosing to use insert and toolholder, tool holders and creating cutting edge
	Practice	:	Choosing to use insert and toolholder, tool holders and creating cutting edge
	Laboratory	:	Choosing to use insert and toolholder, tool holders and creating cutting edge
Week 3	Theoretical	:	Selection process to be used Surface milling process Search for coarse and rough milling process Hole drilling
	Practice	:	Selection process to be used Surface milling process Search for coarse and rough milling process Hole drilling
	Laboratory	:	Selection process to be used Surface milling process Search for coarse and rough milling process Hole drilling
Week 4	Theoretical	:	Profile milling process Channel milling process Precision (finish) milling process Teams roads to make the simulation
	Practice	:	Profile milling process Channel milling process Precision (finish) milling process Teams roads to make the simulation
	Laboratory	:	Profile milling process Channel milling process Precision (finish) milling process Teams roads to make the simulation
Week 5	Theoretical	:	Three-dimensional section of the workpiece transfer process The team to appear in the path of Choosing to use the cutting tool and tool holder, cutting tool and holder to create
	Practice	:	Three-dimensional section of the workpiece transfer process The team to appear in the path of Choosing to use the cutting tool and tool holder, cutting tool and holder to create
	Laboratory	:	Three-dimensional section of the workpiece transfer process The team to appear in the path of Choosing to use the cutting tool and tool holder, cutting tool and holder to create
Week 6	Theoretical	:	Selection process to be used Surface milling process Search for coarse and rough milling process Hole drilling Profile milling process Channel milling process Helical milling process
	Practice	:	Selection process to be used Surface milling process Search for coarse and rough milling process Hole drilling Profile milling process Channel milling process Helical milling process
	Laboratory	:	Selection process to be used Surface milling process Search for coarse and rough milling process Hole drilling Profile milling process Channel milling process Helical milling process
Week 7	Theoretical	:	Selection process to be used Surface milling process Search for coarse and rough milling process Hole drilling Profile milling process Channel milling process Helical milling process
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 9	Theoretical	:	Precision (finish) milling process Precision surface and edge cleaning process Teams roads to make the simulation 4-axis milling process to make Indexing 4-axis machining Continuous (simultaneous) 4-axis machining hole drilling
	Practice	:	Precision (finish) milling process Precision surface and edge cleaning process Teams roads to make the simulation 4-axis milling process to make Indexing 4-axis machining Continuous (simultaneous) 4-axis machining hole drilling
	Laboratory	:	Precision (finish) milling process Precision surface and edge cleaning process Teams roads to make the simulation 4-axis milling process to make Indexing 4-axis machining Continuous (simultaneous) 4-axis machining hole drilling
Week 10	Theoretical	:	Surface profile wrapping (Wrap) To make rough milling Finish milling to Teams roads to make the simulation
	Practice	:	Surface profile wrapping (Wrap) To make rough milling Finish milling to Teams roads to make the simulation
	Laboratory	:	Surface profile wrapping (Wrap) To make rough milling Finish milling to Teams roads to make the simulation
Week 11	Theoretical	:	Choosing to use 5-axis operation Rough milling process Hole drilling Profile milling process
	Practice	:	Choosing to use 5-axis operation Rough milling process Hole drilling Profile milling process
	Laboratory	:	Choosing to use 5-axis operation Rough milling process Hole drilling Profile milling process
Week 12	Theoretical	:	Side-wall process (Swarf) Precision (finish) milling process Teams roads to make the simulation
	Practice	:	Side-wall process (Swarf) Precision (finish) milling process Teams roads to make the simulation
	Laboratory	:	Side-wall process (Swarf) Precision (finish) milling process Teams roads to make the simulation
Week 13	Theoretical	:	NC codes to derive the derivative counter code (Postprocessor) selection CNC Milling Machine data transfer methods to derive the NC codes CNC Milling Machines data transfer methods
	Practice	:	NC codes to derive the derivative counter code (Postprocessor) selection CNC Milling Machine data transfer methods to derive the NC codes CNC Milling Machines data transfer methods
	Laboratory	:	NC codes to derive the derivative counter code (Postprocessor) selection CNC Milling Machine data transfer methods to derive the NC codes CNC Milling Machines data transfer methods
Week 14	Theoretical	:	CNC milling machine tool parts to handle the preparation CNC milling machining tool path generated by
	Practice	:	CNC milling machine tool parts to handle the preparation CNC milling machining tool path generated by
	Laboratory	:	CNC milling machine tool parts to handle the preparation CNC milling machining tool path generated by
Week 15	Theoretical	:	Overview
	Practice	:	
	Laboratory	:	

ECTS Workload

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	2,00
Final	No	1	2,00
Attending lectures	Yes	14	14,00
Application / Practice	Yes	12	36,00
Laboratory	Yes	10	10,00
Individual study before lecture	Yes	12	12,00
Individual study after lecture	Yes	12	12,00
Preparation for midterm	Yes	1	2,00
Preparation for final	Yes	1	2,00
Workshop	Yes	5	50,00
Total Hours			142,00
ECTS			5,00

Program and Learning Outcomes Relations

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

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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Methods of Manufacturing Chipless

General Description

Course Name	:	Methods of Manufacturing Chipless
Course Code	:	MMK 2105
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 Dr. Safiye İPEK AYVAZ
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	Definitions, Stress-Deformation Relations, Factors Affecting Plastic Deformation, Cold and Hot Deformation, Recrystallization, Damage in Deformation, Internal Stresses, Yield Criteria, Forging, Forging and Pressing Machines, Rolling, Extrusion, Rod and Wire Drawing, Sheet Metal Processing Methods Cutting, Bending, Deep Drawing, Plastering, Tensioning, Pipe Production
Recommended or Required Reading	:	Kayali E., Ensari, C., Principles and Applications of Metal Plastic Forming ITU Chemistry Metallurgy Faculty Offset Printing Workshop, Istanbul, 1986. Supplementary Books: Dieter, G. E., Mechanichal Metallurgy, McGraw Hill Book Company, London, 1988
Planned Learning Activities and Teaching Methods	:	Lectures, assignments, presentations.
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 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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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4 - To be able to carry out a designed process

Weekly Course Contents

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 :	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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Week 12	Theoretical	: Plates Processing Methods Deep Drawing, Spinning, Stretching
	Practice	:
	Laboratory	:
Week 13	Theoretical	: Examples of Processing Methods plates
	Practice	:
	Laboratory	:
Week 14	Theoretical	: Pipe Production
	Practice	:
	Laboratory	:
Week 15	Theoretical	: Overview
	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	15,00
Attending lectures	Yes	14	14,00
Individual study before lecture	Yes	14	14,00
Individual study after lecture	Yes	14	14,00
Preparation for midterm	Yes	1	8,00
Total Hours			85,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Cnc Milling Technology

General Description

Course Name	:	Cnc Milling Technology
Course Code	:	MMK 2107
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 Veysel TİMOÇİN
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	This course is preparation for work with the conspiracy, CNC milling, the program aims at teaching the competencies to make writing and production.
Course Contents	:	In this course, students will learn the technical drawing rules CNC Machine's parts and features of the work piece to the picture drawn by the işleyebillecektir using the appropriate speed and feed.
Recommended or Required Reading	:	Manual Milling, CNC Milling programming commands, book, computer, computer program for use
Planned Learning Activities and Teaching Methods	:	Lectures, group work, practice, practice again
Recommended Optional Programme Components	:	In this course, students learn what they have learned using the machine industry, cnc milling programmer olabilir.Aynı even more time by making ilerletirse macro program can handle different parts.

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 ozero points on parts.

2 - To be able to distinguish the properties of the elements used in reset.

3 - To be able to reset the tool according to the part to be machined.

4 - To be able to comprehend the elements and properties used in tool setting.

5 - To be able to adjust the depth of cut, the angle of operation and the giving of progress.

6 - To be able to calculate the roughness depth of the tool.

7 - To be able to adjust the connecting apparatus.

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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8 - To be able to use binding control devices.

9 - To be able to do workpiece zeroing methods.

Weekly Course Contents

Week 1	Theoretical	:	CNC Machine's features, components and operating principles
	Practice	:	CNC Machine's features, components and operating principles
	Laboratory	:	CNC Machine's features, components and operating principles
Week 2	Theoretical	:	Coordinate axes of the counter, the reference points Types of control panels, relationship between the cutter and workpiece material
	Practice	:	Coordinate axes of the counter, the reference points Types of control panels, relationship between the cutter and workpiece material
	Laboratory	:	Coordinate axes of the counter, the reference points Types of control panels, relationship between the cutter and workpiece material
Week 3	Theoretical	:	Cutting Types, properties and uses of
	Practice	:	Cutting Types, properties and uses of
	Laboratory	:	Cutting Types, properties and uses of
Week 4	Theoretical	:	Parts on the zero points Cutting depth, angle, and advances in treatment given
	Practice	:	Parts on the zero points Cutting depth, angle, and advances in treatment given
	Laboratory	:	Parts on the zero points Cutting depth, angle, and advances in treatment given
Week 5	Theoretical	:	CNC Milling Machine programming fundamentals
	Practice	:	CNC Milling Machine programming fundamentals
	Laboratory	:	CNC Milling Machine programming fundamentals
Week 6	Theoretical	:	Motion systems, CNC Milling Machine The definition and importance of simulation simulation programs running a program
	Practice	:	Motion systems, CNC Milling Machine The definition and importance of simulation simulation programs running a program
	Laboratory	:	Motion systems, CNC Milling Machine The definition and importance of simulation simulation programs running a program
Week 7	Theoretical	:	Motion systems, CNC Milling Machine The definition and importance of simulation simulation programs running a program
	Practice	:	The definition and importance of simulation simulation programs running a program
	Laboratory	:	The definition and importance of simulation simulation programs running a program
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Programming using CNC milling cycles Circular pocket milling cycle
	Practice	:	Programming using CNC milling cycles Circular pocket milling cycle
	Laboratory	:	Programming using CNC milling cycles Circular pocket milling cycle

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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	Theoretical	:	Programming using CNC milling cycles a) the drilling cycle b) The tapping cycle c) Hole expansion cycle
Week 10	Practice	:	Programming using CNC milling cycles a) the drilling cycle b) The tapping cycle c) Hole expansion cycle
	Laboratory	:	Programming using CNC milling cycles a) the drilling cycle b) The tapping cycle c) Hole expansion cycle
	Theoretical	:	Sub-programming technique Old programming structure
Week 11	Practice	:	Sub-programming technique Old programming structure
	Laboratory	:	Sub-programming technique Old programming structure
	Theoretical	:	Milling CNC programming using the sub-program
Week 12	Practice	:	Milling CNC programming using the sub-program
	Laboratory	:	Milling CNC programming using the sub-program
	Theoretical	:	CNC Milling Machine in the alarm options
Week 13	Practice	:	CNC Milling Machine in the alarm options
	Laboratory	:	CNC Milling Machine in the alarm options
	Theoretical	:	Measurement and control
Week 14	Practice	:	Measurement and control
	Laboratory	:	Measurement and control
	Theoretical	:	Overview
Week 15	Practice	:	
	Laboratory	:	

ECTS Workload

Activity Type	Is in Semester	Number	Calculated Activity Workload
Midterms	Yes	1	3,00
Final	No	1	3,00
Attending lectures	Yes	16	16,00
Application / Practice	Yes	16	16,00
Laboratory	Yes	10	40,00
Individual study before lecture	Yes	6	6,00
Individual study after lecture	Yes	6	6,00
Homework	Yes	8	8,00
Workshop	Yes	10	20,00
Others	Yes	8	8,00
Total Hours			126,00
ECTS			4,00

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Advanced Manufacturing Methods

General Description

Course Name	:	Advanced Manufacturing Methods
Course Code	:	MMK 2109
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
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	The aim of this course is; To be able to comprehend the history and classification of non-traditional machining processes, and differentiate them from the classical machining methods, be familiar with the principles of operations, machining parameters, abilities and applications of the processes. To be able to understand the meaning and using of new technologies.
Course Contents	:	History and classification of nontraditional machining processes, Comparing with the classical machining methods, Ultrasonic Machining, Abrasive Jet Machining,Abrasive Flow Machining, Chemical Machining, Electrochemical Machining, Electric Discharge Machining, Electric Discharge Wire Cutting, Laser Beam Machining, Plasma Beam (Arc) Machining, Electron Beam Machining, Ion Beam Machining Methods. Electro-erosion processing with basic features, advantages and disadvantages comprehend. Electrodischarge drilling, cutting and grinding operations understand the basic properties of varieties. Chemical Etching (ECM) Machining Method. Chemical Etching method for non-traditional production methods used in industry to define the basic properties. Laser Machining Method. Used in the manufacturing industry to define the basic features and types of
Recommended or Required Reading	:	Erden A. "Non-Traditional Machining Processes", Handbook of Mechanical Engineering, 2nd Edition, Vol. 2 (Design and Production), Section 15, 53p., The Turkish Chamber of Mechanical Engineers, Publ. No: 170, Ankara, 1997.
Planned Learning Activities and Teaching Methods	:	Lecture, question and answer, video and demonstrations.
Recommended Optional Programme Components	:	Information will be measured by written exams consisting of short answer and structured questions

Learning Outcomes

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

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1 - To be able to comprehend the differences between traditional and non-traditional manufacturing methods

2 - To be able to understand the limitations of machining, and chipless production

3 - To be able to comprehend the meaning and using of new technologies

4 - To be able to comprehend the manufacturing of non-contact machining

5 - To be able to make the appropriate selection of manufacturing technology

6 - To be able to understand and use the terminology about Ultrasonic, chemical, electrochemical, electro-erosion, laser beam, electron beam, abrasive jet, water jet plasma treatments

Weekly Course Contents

Week 1	Theoretical	:	Non-Traditional Manufacturing Methods
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Ultrasonic Machining
	Practice	:	Examination of the subject with written and visual documents
	Laboratory	:	
Week 3	Theoretical	:	Abrasive Jet Machining, Abrasive Flow Machining
	Practice	:	Examination of the subject with written and visual documents
	Laboratory	:	
Week 4	Theoretical	:	Water jet Machining, Abrasive Water Jet Machining
	Practice	:	Examination of the subject with written and visual documents
	Laboratory	:	
Week 5	Theoretical	:	Chemical Machining
	Practice	:	Examination of the subject with written and visual documents
	Laboratory	:	
Week 6	Theoretical	:	Electrochemical Machining
	Practice	:	Examination of the subject with written and visual documents
	Laboratory	:	
Week 7	Theoretical	:	Electric Discharge Machining (EDM)
	Practice	:	Practise in the company
	Laboratory	:	
Week 8	Theoretical	:	Electric Discharge Machining (EDM)
	Practice	:	Practise in the company
	Laboratory	:	
Week 9	Theoretical	:	Midterm
	Practice	:	
	Laboratory	:	

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	Theoretical	:	Electric Discharge Wire Cutting (WEDM)
Week 10	Practice	:	Practise in the company
	Laboratory	:	
	Theoretical	:	Electric Discharge Wire Cutting (WEDM)
Week 11	Practice	:	Practise in the company
	Laboratory	:	
	Theoretical	:	Laser Beam Machining
Week 12	Practice	:	Practise in the company
	Laboratory	:	
	Theoretical	:	Plasma Beam (Arc) Machining
Week 13	Practice	:	Examination of the subject with written and visual documents
	Laboratory	:	
	Theoretical	:	Electron Beam Machining Ion Beam Machining
Week 14	Practice	:	Examination of the subject with written and visual documents
	Laboratory	:	
	Theoretical	:	Electron Beam Machining Ion Beam Machining
Week 15	Practice	:	Examination of the subject with written and visual documents
	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	15	30,00
Preparation for midterm	Yes	1	8,00
Preparation for final	Yes	1	15,00
Individual study before lecture	Yes	15	15,00
Individual study after lecture	Yes	15	15,00
Total Hours			87,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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4	0	0	0	0	2	0	2	0	2	0	0
5	3	4	0	0	0	0	2	0	0	3	1
6	1	0	0	0	0	0	3	0	0	0	0

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Machine Elements

General Description

Course Name	:	Machine Elements
Course Code	:	MMK 2111
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 Ali İhsan BAHÇEPINAR
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite 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	:	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 appropriate elements seçebilmektir strengths. Strength of elements used in machinery industry accounts do.
Recommended or Required Reading	:	1) Bozaci, Atilla; Machine Elements Volume1, Volume2, Caglayan Bookstore, 2005, Istanbul 2) Bozaci, Atilla; Design of Machine Elements, Çağlayan Bookstore, 2001, Istanbul 3) Akkurt, Mustafa; Machine Elements Volume1, Volume2, Birsen Publishing House, 2005, Istanbul 4) Gediktaş, Mustafa; Machine Elements Problems, Çağlayan Bookstore, 1999, Istanbul
Planned Learning Activities and Teaching Methods	:	
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.

Bu belge, güvenli elektronik imza ile imzalanmıştır.
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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 belly-belly links.

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	:

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	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	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
1	0	2	0	0	0	0	0	0	0	0	0
2	2	0	0	2	3	0	0	0	0	0	0
3	0	0	3	0	0	2	2	2	0	2	0
4	0	4	0	0	0	0	0	0	0	0	0
5	3	0	3	2	0	0	2	0	0	0	0
6	0	0	0	0	0	0	0	2	0	2	0
7	0	3	0	0	0	2	3	0	0	0	0
8	3	0	0	0	0	0	0	2	0	0	0

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Research Methods and Techniques

General Description

Course Name	:	Research Methods and Techniques
Course Code	:	MMK 2113
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 Ali İhsan BAHÇEPINAR
Type of Course Unit	:	Compulsory
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	It is aimed that a student who is about to graduate should have ability to make research about his/her profession in depth, to improve himself/herself about his/her study subject, to report and to make influential presentation his/her study in conformity with the determined rules.
Course Contents	:	To study, research, report and make oral presentation on a vocational subject in conformity with scientific study rules and ethics.
Recommended or Required Reading	:	1) Seyidoglu, Halil, Scientific Research and Writing Handbook, Güzem Can Publications, 2003, Istanbul 2) Al, Hamza, Academic Writing Rules of Scientific Research Methods, Sakarya Bookstore, 2007, Sakarya 3) Türkbal, Aydın, Scientific Research Methods and Writing Techniques, Aktif Publishing House, 2003, Istanbul
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 improve the vocational interest and knowledge depth of students

2 - To be able to make independent study and gain capability for selflearning

3 - To be able to improve communication capability and gain capability of harmonic working in a team

4 - To be able to gain knowledge and skills about how reached resources can be used in working

5 - To be able to to reach primary and secondary resources related to research topic

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

6 - To be able to analyze a scientific subject and divide it into pieces by doing research.

7 - To be able to work on computer, software, internet and questionnaires (project, experiment) which may be necessary in a report or work

8 - To be able to gain the ability of writing a report effectively and in accordance with writing rules

Weekly Course Contents

Week 1	Theoretical	:	Distribution of the study topics to the students
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Introduction to research methods and planning of research
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	To reach primary and secondary resources in researches
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	To arrange the collected resources, text referring and types of referring
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	Development of the Project/ Designing a survey/sample surveys/sample projects
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Designing index and chapters in study Preparing and showing of foreword, abstract, figures and graphics
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Designing index and chapters in study Preparing and showing of foreword, abstract, figures and graphics
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Designing the bibliography Checking the conformity to writing rules, and correction of mistakes
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Assessment of results obtained in the study
	Practice	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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	Laboratory	:	
	Theoretical	:	Ethics in scientific studies
Week 11	Practice	:	
	Laboratory	:	
	Theoretical	:	Presentation techniques /preparation of presentation
Week 12	Practice	:	
	Laboratory	:	
	Theoretical	:	Collective presentation / workshop
Week 13	Practice	:	
	Laboratory	:	
	Theoretical	:	Collective presentation / workshop
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
Research presentation	Yes	1	1,00
Individual study before lecture	Yes	8	48,00
Total Hours			51,00
ECTS			2,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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8	0	0	0	0	0	0	0	0	0	3	0

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Thermodynamics

General Description

Course Name	:	Thermodynamics
Course Code	:	MMK 2211
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 Can GÖNENLİ
Type of Course Unit	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Basic thermodynamic concepts, business, the laws of thermodynamics, cycles, motor cycles, power, efficiency expressions, relevant qualifications will be given by the theory of combustion and fuels.
Course Contents	:	1.Basic make thermodynamic calculations 2. Motor cycles can draw and make the necessary calculations
Recommended or Required Reading	:	Thermodynamics Basic Course Book, MEB Publications, A.Y.UYAREL, 2003 Thermodynamics Lecture Notes, Gazi Ü. TAMBOURINE. A.Y.UYAREL, 1991 Thermodynamics Prof. Dr. Yunus ÇENGEL
Planned Learning Activities and Teaching Methods	:	1. Lecture Method 2. Case Study Method 3. Problem-Solving Method 4. Discussion Method 5. Display Method
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 basic thermodynamic calculations

2 - To be able to calculate work and heat transfer

3 - To be able to draw motor cycles and make the necessary calculations

4 - To be able to get informed about combustion event and of various fuels

Weekly Course Contents

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 1	Theoretical	:	Basic concepts (system, environment, change of state, online,), the zeroth law of thermodynamics
	Practice	:	
	Laboratory	:	
Week 2	Theoretical	:	Heat and business transformation
	Practice	:	
	Laboratory	:	
Week 3	Theoretical	:	Thermodynamic properties of pure substance (property relations, pv, Ts diagrams)
	Practice	:	
	Laboratory	:	
Week 4	Theoretical	:	Thermodynamic properties of pure substances (Property relations, pv, Ts diagrams)
	Practice	:	
	Laboratory	:	
Week 5	Theoretical	:	The ideal gas equation of state of ideal gases, and changes
	Practice	:	
	Laboratory	:	
Week 6	Theoretical	:	Thermodynamics 1. Law Thermodynamics 2. Law
	Practice	:	
	Laboratory	:	
Week 7	Theoretical	:	Thermodynamics 1. Law Thermodynamics 2. Law
	Practice	:	
	Laboratory	:	
Week 8	Theoretical	:	Midterm-exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Motor cycles, cycles to compare Internal combustion engines work, efficiency, power
	Practice	:	
	Laboratory	:	
Week 10	Theoretical	:	Engine performance characteristics
	Practice	:	
	Laboratory	:	
Week 11	Theoretical	:	Fuels, physical and chemical properties, physical analysis of combustion, chemical properties, with spark-ignition engine combustion
	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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Week 12	Theoretical :	Classification of compression ignition engines burning fuels, hydrocarbons, alcohols and their derivatives, the classification of combustion, combustion equations
	Practice :	
	Laboratory :	
Week 13	Theoretical :	And analysis of end-products of combustion, fuel and combustion-related tables, alternative fuels and combustion
	Practice :	
	Laboratory :	
Week 14	Theoretical :	Sources of combustion engines, detonation, fuel evaporation, detonation resistance
	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	28,00
Individual study after lecture	Yes	14	28,00
Preparation for midterm	Yes	1	8,00
Preparation for final	Yes	1	8,00
Quizzes	Yes	1	2,00
Individual study before lecture	Yes	14	14,00
Assignment	Yes	0	0,00
Application / Practice	Yes	0	0,00
Total Hours			92,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Work Molds

General Description

Course Name	:	Work Molds
Course Code	:	MMK 2213
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
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	The aim of this course is to provide the students with the necessary knowledge about molding techniques and molding types
Course Contents	:	Mold and molding types, mold materials, molding elements.
Recommended or Required Reading	:	TEXTBOOK: 1- Kurt, H, (2002) Molding Technique and Design, Istanbul, 2- Ataşimşek, S, (2006) Plastic and Metal Molding Techniques, İstanbul, 3- Metal Vocational Information, MEB 4- Lecture notes 5- Articles on the subject COURSE TOOLS: - Workshops, Team benches, CNC, various Cutters, computer (CAD-CAM), Drawing Sets, Calculator, Tables.
Planned Learning Activities and Teaching Methods	:	1-Teaching mold and molding types 2-Introducing the mold elements 3-Supporting topics with examples 4-Making 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 compherend mold and molding concepts

2 - To be able to understand molding types

3 - To be able to apply molding techniques

4 - To be able to do molding calculations

Weekly Course Contents

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 1	Theoretical	:	Mold and molding concept
	Practice	:	Guided sampling and problem-solving.
	Laboratory	:	
Week 2	Theoretical	:	Mold types
	Practice	:	Guided sampling and problem-solving.
	Laboratory	:	
Week 3	Theoretical	:	Molding Techniques
	Practice	:	Guided sampling and problem-solving.
	Laboratory	:	
Week 4	Theoretical	:	Calculations about molding
	Practice	:	Guided with the application.
	Laboratory	:	
Week 5	Theoretical	:	Drilling pattern processing elements.
	Practice	:	Guided with the application.
	Laboratory	:	
Week 6	Theoretical	:	Binding mold elements
	Practice	:	Guided with the application.
	Laboratory	:	
Week 7	Theoretical	:	Drilling and installation of the pattern elements Driling mold testing
	Practice	:	Guided with the application.
	Laboratory	:	
Week 8	Theoretical	:	Midterm Exam
	Practice	:	
	Laboratory	:	
Week 9	Theoretical	:	Binding mold design
	Practice	:	Guided sampling and problem-solving
	Laboratory	:	
Week 10	Theoretical	:	sheet-metal molds
	Practice	:	Guided sampling and problem-solving
	Laboratory	:	
Week 11	Theoretical	:	sheet-metal molds
	Practice	:	Guided sampling and problem-solving
	Laboratory	:	
Week 12	Theoretical	:	Plastic Molding
	Practice	:	Guided with the application.
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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Week 13	Theoretical	:	Plastic Molding
	Practice	:	Guided with the application.
	Laboratory	:	
Week 14	Theoretical	:	Plastic molding elements
	Practice	:	Guided with the application.
	Laboratory	:	
Week 15	Theoretical	:	Plastic molding elements
	Practice	:	Guided with the application.
	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
Individual study after Application / Practice	Yes	1	8,00
Preparation for midterm	Yes	1	8,00
Preparation for final	Yes	1	15,00
Homework	Yes	1	5,00
Research presentation	Yes	1	12,00
Total Hours			80,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Machine Desing

General Description

Course Name	:	Machine Desing
Course Code	:	MMK 2215
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	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Learning calculations and applications of Machine Design used in industry.
Course Contents	:	General Deformation, Machinery Design Materials, Heat Treatments in Machine Design, Casting Design, Welding Design, Wihoutchip Deformation Design Chipped Deformation Design, Design of Bolt Joints, Design of Shaft-Navel Joints, Supporting Design, Lightness and cost in Design, Leakness in Design Corrosion in Design
Recommended or Required Reading	:	1) Design of Machine Elements (Prof. Dr. Ahmet Çetin CAN) 2) Machine Design (Associate Professor Dr. Tezcan ŞEKERCİOĞLU)
Planned Learning Activities and Teaching Methods	:	Presentation of lesson, presentation of formulates and solution of application examples.
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 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 Mil-Belly Connections.

Weekly Course Contents

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

	Theoretical	:	General Deformation
Week 1	Practice	:	
	Laboratory	:	
	Theoretical	:	Machinery Design Materials
Week 2	Practice	:	
	Laboratory	:	
	Theoretical	:	Heat Treatments in Machine Design
Week 3	Practice	:	
	Laboratory	:	
	Theoretical	:	Casting Design
Week 4	Practice	:	
	Laboratory	:	
	Theoretical	:	Welding Design
Week 5	Practice	:	
	Laboratory	:	
	Theoretical	:	Wihoutchip Deformation Design Chipped Deformation Design
Week 6	Practice	:	
	Laboratory	:	
	Theoretical	:	Wihoutchip Deformation Design Chipped Deformation Design
Week 7	Practice	:	
	Laboratory	:	
	Theoretical	:	Midterm-exam
Week 8	Practice	:	
	Laboratory	:	
	Theoretical	:	Design of Bolt Joints Examination
Week 9	Practice	:	
	Laboratory	:	
	Theoretical	:	Examination
Week 10	Practice	:	
	Laboratory	:	
	Theoretical	:	Design of Shaft-Navel Joints
Week 11	Practice	:	
	Laboratory	:	
	Theoretical	:	Supporting Design
Week 12	Practice	:	
	Laboratory	:	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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	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	10,00
Preparation for final	Yes	1	10,00
Attending lectures	Yes	14	14,00
Application / Practice	Yes	5	10,00
Individual study before lecture	Yes	14	14,00
Individual study after lecture	Yes	14	14,00
Total Hours			77,00
ECTS			3,00

Program and Learning Outcomes Relations

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

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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MANİSA VOCATIONAL SCHOOL OF TECHNICAL SCIENCES - Machinery
Movement Control Systems

General Description

Course Name	:	Movement Control Systems
Course Code	:	MMK 2217
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	:	Optional
Mode of Delivery	:	Face-To-Face
Prequisite and Co-requisites	:	N/A
Objectives of the Course	:	Perform maintenance repair work machines. Planned maintenance and repair training to win. Maintenance of business machines and auxiliary tools. Maintenance of business machines, hydraulic circuit.
Course Contents	:	The machine construction equipment maintenance sektöründekullanılan and repair information, work accidents, occupational safety and bench applications related to the training modules.
Recommended or Required Reading	:	Principles of Business Machines, Maintenance and Repair.
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 make maintenance and repair of the front line and wheels

2 - To be able to make maintenance and repair of steering system

3 - To be able to make suspension system

4 - To be able to make maintenance of business machines, hydraulic circuit

Weekly Course Contents

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=4049&eD=BSMEDFRZ9Z&eS=807394 adresinden yapılabilir.

Week 1	Theoretical :	Determination of Firms Production Departments.
	Practice :	
	Laboratory :	
Week 2	Theoretical :	Determination of production capacities of enterprises Parts.
	Practice :	
	Laboratory :	
Week 3	Theoretical :	Grouping of varieties Business Machines.
	Practice :	
	Laboratory :	
Week 4	Theoretical :	Principles of Business Machines, Maintenance and Repair.
	Practice :	
	Laboratory :	
Week 5	Theoretical :	Procedures for maintenance repair of machines to do Business
	Practice :	
	Laboratory :	
Week 6	Theoretical :	Planned maintenance and repair training award criteria
	Practice :	
	Laboratory :	
Week 7	Theoretical :	Business machines, lubrication, hydraulic circuit techniques
	Practice :	
	Laboratory :	
Week 8	Theoretical :	Examination-Midterms
	Practice :	
	Laboratory :	
Week 9	Theoretical :	Planned maintenance and repair training award criteria
	Practice :	
	Laboratory :	
Week 10	Theoretical :	Planned maintenance and repair training award criteria
	Practice :	
	Laboratory :	
Week 11	Theoretical :	Business machines, lubrication, hydraulic circuit techniques
	Practice :	
	Laboratory :	
Week 12	Theoretical :	Procedures for maintenance repair of machines to do Business
	Practice :	
	Laboratory :	

Bu belge, güvenli elektronik İmza ile imzalanmıştır.
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