Course Descriptions of the courses that will be offered in Fall 2020



Faculty of Engineering Mechanical Engineering (German)

		nciples and History of Turkish Revolution I			
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
	AIT001	Ataturk's Principles and History of Turkish Revolution I	2	2	2
ords, to inform them at kamples of a multi-layer ethods of thought of di eaching Methods and T	: German) 2: essential political, econ out the background of t ad point in order to mak ferent social sciences, v Fechniques: social and cultural facts :erpretations on them.	omic, social and cultural facts of the historical period from the late eighteen these facts in the course of the transition from the Ottoman Empire to the es e them able to approach historical events in a multi-dimensional way. To intr with a particular emphasis on history. of the historical period beginning by the classical age of the Ottoman Empi	th century through the si stablishment of republica oduce to students certair	igning of Lausan n Turkey. To pro 1 basic theoretica	ovide students with some al concepts, discussions and

Recommended or Required Reading

Weekly Detailed Course Co

Resources

Derleme Ders Notu / Syllabus Eric Hobsbawm, "Kuşbakışı 20. Yüzyıl", Kısa 20 Yüzyıl: Aşırılıklar Çağı içinde , s. 13-31 Cemil Koçak, "Siyasal Tarih: 1923-1950", Çağdaş Türk Derleme Ders Notu / Syllabus Georg Iggers, "Giriş", Yirminci Yüzyılda Tarihyazımı içinde, s. 1-21 Donald Quateert, "Osmanlı Tarihini incelemek Neden Gereklidir ?", Osmar

Course Category			
Mathmatics and Basic Sciences	:	Education	;
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Week	Topics	Study Materials	Materials
1	Introduction: The Possibilities and the limitations of history: basic concepts		
2	Social and Administrative Structure of the Ottoman State, before the attempts of modernization: From 16th to the 18th Ce	L	
3	Transformation in the Social and Administrative Structure of the Ottoman State, before the attempts of modernization: 18t		
1	The meaning of the modernization and the formation of the modern state		
5	The Tanzimat Era (1839-1876): The Reconstruction of the centralized state		
5	The Era of Abdülhamid II (1876-1908): Defensive Modernization		
7	The Era of Second Constitutional Monarchy : A Constitutional Revolution		
3	MIDTERM		
)	The Era of Second Constitutional Monarchy: Pluralism in the Public Sphere		
0	The First World War: "Total War" and the rise of the nationalism		
.1	The General Social and Political Situation in the world and in the Ottoman State after the First World War		
2	The War of Independence I: The Political Developments		
3	The War of Independence I: The Military Developments		
L4	. The Formation and the Contents of the Lausanne Treaty		
Course	e Learning Outcomes		
No	Learning Outcomes		
C01 C02 C03 C04	The students will learn meaning and benefits of historical researches. The students will learn the pre-modern Ottoman history in general. The students will be able to evaluate Ottoman history within the European modernization process. The students will be able to evaluate 19.th century Ottoman history within the context of reform efforts. The students will understand and evaluate today in relation to the history of Ottoman Empire and modern Turkey.		

Program Learning Outcomes

No	Learning Outcome
P08	Awareness of the necessity of lifelong learning; ability to access information, to follow developments in science and technology and to renew himself continuously.
P07	Ability to communicate effectively in verbal and written Turkish; knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, mal
P09	To act in accordance with ethical principles, professional and ethical responsibility; Information on the standards used in engineering applications.
P11	Knowledge of the effects of engineering practices on health, environment and safety in the universal and social dimensions and the problems of the era in engineering; awareness of the legal conse
P10	Information on business practices such as project management, risk management and change management; awareness of entrepreneurship and innovation; information about sustainable developm
P06	Ability to work effectively in disciplinary and multi-disciplinary teams; individual study skills.
P02	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply appropriate analysis and modeling methods for this purpose. Adequate knowledge in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems.
P01	Adequate knowledge in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; ability to apply modern design methods for this purpose.
P05	An ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering problems or disciplinary research topics.
P04	Ability to develop, select and use modern techniques and tools for the analysis and solution of complex problems encountered in engineering applications; ability to use information technologies effectively and the second secon

Assessment Methods and Criteria			ECTS Allocated Based on Student Workload
In-Term Studies	Quantity	Percentage	Activities
Mid-terms	1	%40	Course Duration
Quizzes	0	%0	Hours for off-the-c.r.stud
Assignment	0	%0	Assignments
Attendance	0	%0	Presentation
Practice	0	%0	Mid-terms
Project	0	%0	Practice
Final examination	1	%60	Laboratory
Total		%100	Project
			Final examination
			Total Work Load
			ECTS Credit of the Course
Contribution of Learning Outcomes to Programm	e Outcomes		
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P01 P02 P03 P04 P05 P06 P07 P08 P09 P10			

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Quantity

Duration

Total Work Load



Faculty of Engineering Mechanical Engineering (German)

Ster Course Unit Code Course Unit Title DEU121 Technical English I of Delivery: Face Face Face age of Instruction: Image: State S		L+P 2	Credit 2	Number of ECTS Credits
of Delivery: Face age of Instruction: bf Course Unit: of's Degree Placement(s): timent / Program: nical Engineering (German) of Course Unit: ad vises of the Course: udents should have german B1 level knowledge in reading, writing, speaking ng Methods and Techniques:		2	2	2
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Hutchinson, T. & Sherman, K. (2012). Network	3. Oxford University Press: New York			
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e Category				
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eering Eesign :	Science Health			
Sciences :	Field	:		
y Detailed Course Contents				
Topics Introduction to the course and the course materials	Study M	laterials	Mate	rials
Welcome to school! Introducing yourself/ Asking questions/ General introduction	to English			
Let's introduce ourselves/ Welcoming others/Personal information/Present simple				
Reading and writing: Ms Medina's Spanish Class/ The fashionable milliner				
Things happen/ Describing unexpected events/Expressions with 'get'/ Present pe	fect with 'for' and 'since'			
Reding and writing: The 90/10 Secret/ You can do it! Describing a location/ Describing housing/ Articles				
Reading and writing: Sofa Surfing/ The Alhambra				
Midterm exams				
Seeing old friends/ Talking about an old friend/ Phrasal verbs/ Separable and nor	-separable phrasal verbs/ reading and sp			
Finding a lost friend/Unit 5: Congratulations!/Discussing events in the past	in? Cet Linl			
Acheivements/Present perfect and past simple/ Reading and Speaking: Want to v	rin? Get Lin! 'th and fitness/ Future/Reading and writin			
Acheivements/Present perfect and past simple/ Reading and Speaking: Want to v Adventure seekers/Unit 6: Healthy Living: Planning to do something healthy/ Hea A healthy lifestyle/ Unit 7: What a pian!/Talking about being late/Transportation	Ith and fitness/ Future/Reading and writin problems/Past perfect/Reading and writing			
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Mid-terms 1 %40 Quizzes 0 %0 Ssignment 0 %0 Variance 0 %0 Vractice 0 %0 Project 0 %0 Tinal examination 1 %60 Fotal %100 %100	Quantity	Percentage
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Number 0 %0 Practice 0 %0 Project 0 %0 Inal examination 1 %60	0	%0
Practice 0 %0 Project 0 %0 Final examination 1 %60	0	%0
Project 0 %0 Tinal examination 1 %60	0	%0
inal examination 1 %60	0	%0
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rotal %100	1	%60

ECTS Allocated Based on Student W	UIKIUdu		
Activities	Quantity	Duration	Total Work Load
Course Duration	15	3	45
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	0	0	0
Total Work Load			45
ECTS Credit of the Course			2

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Faculty of Engineering Mechanical Engineering (German)

Tester Course Unit Code Course Unit Title ENG101 English I e of Delivery: English I to Face Juage of Instruction: ish of Course Unit: elor's Degree K k Placement(s): Framework antical Engineering (German) For Course Unit: ired Extidents should have english B1 level knowledge in reading, writing, speaking and grammar. hing Methods and Techniques: de students with the ability to write at the basic level (to introduce themselves and others physica position) • Ensure that students improve their B1 level speaking skills (verbal presentation of self a equisites and co-requisities:	L+P Credit Number of ECTS Cred 3 3 2
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rse Category	
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Introduction to the course and the course materials	
Welcome to school! Introducing yourself/ Asking questions/ General introduction to English Let's introduce ourselves/ Welcoming others/Personal information/Present simple and present contir	in unite
Reading and writing: Ms Medina's Spanish Class/ The fashionable milliner	nuous
Things happen/ Describing unexpected events/Expressions with 'get'/ Present perfect with 'for' and 's	'since'
Reding and writing: The 90/10 Secret/ You can do it!	
Describing a location/ Describing housing/ Articles	
Reading and writing: Sofa Surfing/ The Alhambra Midterm exams	
Seeing old friends/ Talking about an old friend/ Phrasal verbs/ Separable and non-separable phrasal	I verbs/ reading and spi
Finding a lost friend/Unit 5: Congratulations!/Discussing events in the past	
Acheivements/Present perfect and past simple/ Reading and Speaking: Want to win? Get Lin!	
Adventure seekers/Unit 6: Healthy Living: Planning to do something healthy/ Health and fitness/ Future A healthy lifeth/d/ Unit 7: What a pipe/(Talking about heing late/(Transportation problems/(Pact pace))	
A healthy lifestyle/ Unit 7: What a pian!/Talking about being late/Transportation problems/Past perfer A New York City Taxi Driver/ Unit 8: Eat up! Making suggestions/Describing food/ Tag questions/Rea	
rse Learning Outcomes	
Learning Outcomes	
Students will have B1 level of English knowledge	
Students will develop their reading comprehension skills at R1 level	
Students will develop their reading comprehension skills at B1 level. Students will improve their ability to understand what they listen at B1.	
Students will develop their reading comprehension skills at B1 level. Students will improve their ability to understand what they listen at B1. Students will be informed at B1 level and will be able to use it effectively. Students will learn vocabulary at B1 level and use them during reading, listening and speaking	ng.
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Assessment Methods and Criteria			E
In-Term Studies	Quantity	Percentage	A
Mid-terms	1	%40	С
Quizzes	0	%0	Н
Assignment	0	%0	A
Attendance	0	%0	Ρ
Practice	0	%0	М
Project	0	%0	P
Final examination	1	%60	La
Total		%100	P F T
Contribution of Learning Outcomes to Prog	gramme Outcomes		

Activities	Quantity	Duration	Total Work Load
Course Duration	15	3	45
Hours for off-the-c.r.stud	0	0	0
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	0	0	0
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	0	0	0
Total Work Load			45
ECTS Credit of the Course			2

 P01
 P04
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Faculty of Engineering Mechanical Engineering (German)

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	ENG201	English III		3	3	2
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Mid-terms 1 %40 Quizzes 0 %0 Ssignment 0 %0 Variance 0 %0 Vractice 0 %0 Project 0 %0 Tinal examination 1 %60 Fotal %100 %100	Quantity	Percentage
Assignment 0 %0 Aktendance 0 %0 Practice 0 %0 Project 0 %0 Inal examination 1 %60	1	%40
Number 0 %0 Practice 0 %0 Project 0 %0 Inal examination 1 %60	0	%0
Practice 0 %0 Project 0 %0 Final examination 1 %60	0	%0
Project 0 %0 Tinal examination 1 %60	0	%0
inal examination 1 %60	0	%0
	0	%0
rotal %100	1	%60

ECTS Allocated Based on Student Workload						
Activities	Quantity	Duration	Total Work Load			
Course Duration	15	3	45			
Hours for off-the-c.r.stud	0	0	0			
Assignments	0	0	0			
Presentation	0	0	0			
Mid-terms	0	0	0			
Practice	0	0	0			
Laboratory	0	0	0			
Project	0	0	0			
Final examination	0	0	0			
Total Work Load			45			
ECTS Credit of the Course			2			

 P01
 P04
 P07
 P08
 P10

 All
 3
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 5
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 5



Faculty of Engineering Mechanical Engineering (German)

NF101	Introduction					
emester	Course Unit Code	Course Unit Title		L+P	Credit	Number of ECTS Credit
	INF101	Introduction to Computer Science a	nd Programming	4	4	6
de of Delivery: te to Face						
nguage of Instruct	ion:					
utch						
vel of Course Unit:						
chelor's Degree						
ork Placement(s):						
epartment / Progra	am:					
chanical Engineering	g (German)					
pe of Course Unit:						
quired						
jectives of the Cou		f computer science Explain. Impera	tive programming and basic dat	a structures They are knowled	neable and practical	Problem solutions
	C and C ++ programs Can		ave programming and basic da	a structures they are knowled	geable and practical	
aching Methods an						
		ntation, Number display ? Encryptio				
		ariables, Operators, Cycles ? Data St				
their own, and writi rh	ing and delivering the prog	ram. At the end of the period, the c	computer by programming the r	hicroprocessor idea about now	programs are writte	en in the world outside they
erequisites and co-	-reauisities:					
-	•					
urse Coordinator:						
ime of Lecturers: ist Prof.Dr. Burcu Yi	ildiz					
sistants:	lidiz					
commended or Re	quired Reading					
		rnst, Jochen Schmidt, Gerd Beneken. (Grundkurs Informatik. Springer Vi	wek, 2016 Helmut Erlenkötter. (C: Programmieren voi	n Anfang an. Rowohlt Tasche
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 No
 Learning Outcome

 P08
 Awareness of the necessity of lifelong learning; ability to access information, to follow developments in science and technology and to renew himself continuously.

 P07
 Ability to communicate effectively in verbal and written Turkish; knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, mail reprint accordance with ethical principles, professional and ethical responsibility; Thormation on the standards used in engineering applications.

 P11
 Knowledge of the effects of engineering practices on health, environment and safety in the universal and social dimensions and the problems of the era in engineering; awareness of the legal conse

 P10
 Information on business practices such as project management, risk management; and change management; awareness of entrepreneurship and innovation; information about sustainable developn

 P06
 Ability to vork effectively in disciplinary and multi-disciplinary teams; individual study skills.

 P01
 Adequate knowledge in mathematics, science and related engineering problems; oblity to use theoretical and practical knowledge in these areas in complex engineering problems.

 P03
 Ability to desting, conduct experiments, cliect data, analyze and interpret results for the study of complex engineering problems.

 P03
 Ability to desting, conduct experiments, cliect data, analyze and interpret results for the study of complex engineering problems.

 P03
 Ability to desting, conduct experiments, co

Assessment Methods and Criteria			ECTS Allocated Based on Student Workload
In-Term Studies	Quantity	Percentage	Activities
Mid-terms	0	%0	Course Duration
Quizzes	0	%0	Hours for off-the-c.r.stud
Assignment	6	%60	Assignments
Attendance	0	%0	Presentation
Practice	0	%0	Mid-terms
Project	0	%0	Practice
Final examination	1	%40	Laboratory
Total		%100	Project
			Final examination
			Total Work Load
			ECTS Credit of the Course
Contribution of Learning Outcomes to Programn	ne Outcomes		
bbb			
P01 P02 P03 P04 P05 P06 P07 P08 P09 P10			

All 5 5 5 5 5 5 5 5 5 5 5 5

Quantity

Duration

Total Work Load



Faculty of Engineering Mechanical Engineering (German)

MAB101	Introduction	to Mechanical Engineering					
Semester	Course Unit Code	Course Unit Title		L	.+P	Credit	Number of ECTS Credits
	MAB101	Introduction to Mechanical Engineering			2	2	2
ode of Delivery:							
ace to Face anguage of Instru	iction:						
eutch							
evel of Course Un achelor's Degree	it:						
ork Placement(s)):						
o •epartment / Prog							
lechanical Engineer							
ype of Course Uni	t:						
equired bjectives of the C	ourse:						
Vith the rapid devel	opment of engineering profes	sion technology, it is turning. This is the					
		way creating new value added potentials i icient, ergonomic and to create business a					
nplementation of co	omplex production systems it	is necessary to carry out studies related t	to The purpose of this in	troductory course is to a			
		ctive of professional practice related to va	arious fields of study to g	jain			
eaching Methods a tudents from the a	cademy and business world i	ndustry with examples.					
rerequisites and o		<i>,</i> .					
ourse Coordinato	r:						
lame of Lecturers: Pr. Pinar Bilge	:						
ssistants:							
ecommended or F	Required Reading						
lesources	Moeller, K	.: Wertschöpfung in Netzen. Vahlen Verlag, 2	2006. Seliger, G.; Weinert	N.; Zettl, M.: Module Cont	igurator fo	or the Developmer	t of Products for Ease of Rema
		.: Wertschöpfung in Netzen. Vahlen Verlag, 2			-		
		.; Weinert, N.; Zettl, M.: Module Configurator ent of Products for Ease of Remanufacturing					
	Proceedin	gs of 14th CIRP International Conference on	Life Cycle				
		ng. Tokyo, Japan, June 11-13, 2007. S. 47–5. Handhuch der Fertiqungstechnik – Fahrikhett					
Course Category							
Mathmatics and Ba	asic Sciences : 30		Education	:			
Engineering Engineering Desig	n : 50		Science Health	:			
Social Sciences			Field	÷	10		
leekly Detailed Co	ourse Contents						
leek Topics				Study Materials	;	Mate	rials
	ts for university research						
	ts for university	20					
	industrial value-added production industrial value-added production						
	ts for aerospace industry						
	ts for aerospace industry						
		ogistics, automation and product-service syst					
	s from the fields of production is to for the automotive industry	ogistics, automation and product-service syst	ems				
	ts for the automotive industry						
	ween technology and manager	nent in manufacturing technologies					
	mprovement projects						
4 Continuous i	improvement projects						
Course Learning O	outcomes						
	ning Outcomes						
201 To ha 202 Funda	ive presentation and reporting s amentals of Engineering Science	kills S					
203 Under	amentals of Engineering Science rstand current trends in enginee	ering					
Program Learning	Outcomes						
lo Learr	ning Outcome						
08 Aware 07 Ability	eness of the necessity of lifelon to communicate effectively in	g learning; ability to access information, to fo verbal and written Turkish; knowledge of at icples, professional and ethical responsibility ing practices on health, environment and saf ch as project management, risk managemen ary and multi-disciplinary teams; individual st e complex engineering problems; ability as science and related engineering discipline;	pllow developments in scie least one foreign language	nce and technology and to e: writing active reports and	renew hin d writing re	nself continuously eports, preparing (design and production reports
09 To act 11 Know	t in accordance with ethical prin	nciples, professional and ethical responsibility	; Information on the stan	lards used in engineering a	application	S.	aring: awareness of the local s
10 Inform	nation on business practices su	ch as project management, risk managemen	t and change managemen	t; awareness of entreprene	eurship and	d innovation; infor	mation about sustainable deve
06 Ability 02 Ability	to work effectively in disciplination of the provident of	ary and multi-disciplinary teams; individual st /e complex engineering problems: ability to s	udy skills. select and apply appropria	te analysis and modeling m	nethods for	r this purpose.	
201 Adequ	uate knowledge in mathematics	, science and related engineering discipline;	the ability to use theoretic	al and practical knowledge	in these a	reas in complex e	ngineering problems.

Adequate knowledge in mathematics, science and related engineering discipline; the ability to see theoretical and practical knowledge in these areas in complex engineering problems. Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; ability to apply modern design methods for this purpose. An ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering problems or disciplinary research topics. Ability to develop, select and use modern techniques and tools for the analysis and solution of complex problems encountered in engineering applications; ability to use information technologies effe P01 P03 P05 P04

Assessment Methods and Criteria			ECTS Allocate
In-Term Studies	Quantity	Percentage	Activities
Mid-terms	1	%0	Course Duration
Quizzes	0	%40	Hours for off-the
Assignment	0	%0	Assignments
Attendance	0	%0	Presentation
Practice	0	%0	Mid-terms
Project	0	%0	Practice
Final examination	1	%60	Laboratory
Total		%100	Project
			Final examination Total Work Lo ECTS Credit of
Contribution of Learning Outcomes to Pro	ogramme Outcomes		

ECTS Allocated Based on Student Workload						
Activities	Quantity	Duration	Total Work Load			
Course Duration	14	1	14			
Hours for off-the-c.r.stud	0	0	0			
Assignments	0	0	0			
Presentation	0	0	0			
Mid-terms	1	3	3			
Practice	0	0	0			
Laboratory	0	0	0			
Project	0	0	0			
Final examination	4	4	16			
Total Work Load			33			
ECTS Credit of the Course			1			

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	Γ
All	5	5	5	5	5	5	5	5	5	5	



Faculty of Engineering Mechanical Engineering (German)

MAB203 Design Methods II: Mechanical Part Design					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	MAB203	Design Methods II: Mechanical Part Design	3	5	6

Mode of Delivery: Face to Face Language of Instruction: Deutch Level of Course Unit: Bachelor's Degree
Work Placement(s): No

Department / Program: Mechanical Engineering (German) Type of Course Unit:

Required

Objectives of the Course:

Parts Creation and Sizing • Three Dimensional Computer Aided Design Introduction • Introduction to Design Hierarchy and Design Methodology in Production Process • Methodical Approach and Process in Creating Simple Parts • Tolerance and Compliance The skills to be acquired by the students: • Basic Skill about the Implementation of the Engineering Approach Format and the Working Techniques in Creating Simple Designs • Ability to create Design Drawings Independently Based on Given Boundary Conditions Competencies: • Competence about the solution and analysis of a simple technical problem Subject Adequacy: 40% Method Adequacy: 30% System Adequacy: 20% Social Qualification: 10%

Simple technical problem Subject Adequacy: 40% Method Adequacy: 30% System Adequacy: 20% Social Qualification: 10% **Teaching Methods and Techniques:** Lecture: • Technical Drawing Principles as Design and Manufacturing Information Source • Parts Creation and Sizing • Introduction to Design Hierarchy and Design Methodology in Production Process (Construction Process and Production Modularization) • Introduction to Standard / Norm Information • Tolerance Applications: • Manually Creating Technical Drawings • Given Bodies Considering Boundary and Connection Conditions • Modeling with 3D Computer Aided Design Environment Laboratory: • Detailed Design with All Required Drawings • Modeling with 3D Computer Aided Design Environment Prerequisites and co-requisities:

Course Coordinator:

Name of Lecturers:

Asist Prof Dr. Mete BUDAKLI Assistants:

Ismail KULCÜResearch Assist. Ahmet Ugur BATUKResearch Assist. Süleyman SISMANResearch Assist. Sefer Arda SERBES

Recommended or Required Reading

Resources

- Schlecht, Berthold: Maschinenelemente 1. Pearson Studium,
- Wünchen, 2007
 DIN-Normen; & Quot; Tabellenbuch Metall & quot ;, Europa-Verlag 2014
 Course notes are available in electronic environment. Drawing tools, Autodesk Inventor

D.C. Planchard ve M.P. Planchard, Engineering Design with SolidWorks 2014 and Video

Course Category					
Mathmatics and Basic Sciences	:	0	Education	:	: 0
Engineering	:	10	Science	:	: 0
Engineering Design	:	80	Health	:	: 0
Social Sciences	:	0	Field	:	: 0

leek	Topics	Study Materials	Materials
	Introduction to Design Methods		
	Product Design Process		
	Principles of Methodical Design		
	Introduction to Design Process with Autodesk Inventor IIntroduction to Design Process with Autodesk Inventor II		
	Introduction to Design Process with Autodesk Inventor III		
	Introduction to Design Process with Autodesk Inventor IV		
	Technical drawing		
	Creating Assembly Design with Autodesk Inventor ICreating Assembly Design with Autodesk Inventor II		
	Standards / Norms		
	Creating Assembly Design with Autodesk Inventor IIICreating Assembly Design with Autodesk Inventor IV		
	Computer Aided Design Introduction and Design IComputer Aided Design Introduction and Design II		
	Computer Aided Design Introduction and Design IIIComputer Aided Design Introduction and Design IV		

No	Learning Outcomes					
C01	To acquire sufficient knowledge about mathematics, science and mechanical engineering and to apply the theoretical and practical knowledge in these fields to model and solve engineering problem					
C02	Ability to identify, define, formulate and solve complex engineering problems, and to select and apply appropriate analysis and modeling methods in mechanical engineering for this purpose.					
C03	Experiment design, experimentation, data collection, analysis and interpretation of results for engineering problems.					
C04	Understanding of two-dimensional views of 3D objects (conjugate projection, auxiliary and cross-section) in terms of vertical projection					
C05	Dimensioning of 2D fechnical drawings and recognition of tolerances					
C06	Understanding technical drawing standards and practices applied in the industry					
Program	Program Learning Outcomes					

NO	Learning Outcome
P08	Awareness of the necessity of lifelong learning; ability to access information, to follow developments in science and technology and to renew himself continuously.
P07	Ability to communicate effectively in verbal and written Turkish; knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, mal
P09	To act in accordance with ethical principles, professional and ethical responsibility; Information on the standards used in engineering applications.
P11	Knowledge of the effects of engineering practices on health, environment and safety in the universal and social dimensions and the problems of the era in engineering; awareness of the legal conse
P10	Information on business practices such as project management, risk management and change management; awareness of entrepreneurship and innovation; information about sustainable developm
P06	Ability to work effectively in disciplinary and multi-disciplinary teams; individual study skills.
P02	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply appropriate analysis and modeling methods for this purpose.
P01	Adequate knowledge in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; ability to apply modern design methods for this purpose.
P05	An ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering problems or disciplinary research topics.
P04	Ability to develop, select and use modern techniques and tools for the analysis and solution of complex problems encountered in engineering applications; ability to use information technologies effe

		ECTS Alloca
Quantity	Percentage	Activities
1	%40	Course Durat
0	%0	Hours for off
0	%0	Assignments
0	%0	Presentation
0	%0	Mid-terms
0	%0	Practice
1	%60	Laboratory
	%100	Project
		Final examina
		Total Work
		ECTS Credit
ne Outcomes		
		1 %40 0 %0 0 %0 0 %0 0 %0 0 %0 0 %0 1 %60 %100

Activities	Quantity	Duration	Total Work Load
Course Duration	14	45	630
Hours for off-the-c.r.stud	84	45	3780
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	80	80
Practice	28	45	1260
Laboratory	14	45	630
Project	0	0	0
Final examination	1	120	120
Total Work Load			6500
ECTS Credit of the Course			217

666												
		P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	
	All	5	5	5	5	5	5	5	5	5	5	



Faculty of Engineering Mechanical Engineering (German)

MAT103 Analysis I					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	MAT103	Analysis I	5	5	6
Mode of Delivery:					

Mode of Delivery: Face to Face race to Face Language of Instruction: Deutch Level of Course Unit: Bachelor's Degree Work Placement(s): No Department / Decement Department / Program: Mechanical Engineering (German) Type of Course Unit: Required Objectives of the Course:

Analysis I Teaching Methods and Techniques: Real Numbers, Number Representations, Difference, Range Equations, Inequalities, Solution Set Coordinate Systems, True, Slope Functions, Function Graph Limit, Continuity in Functions Difference, Increase / Decrease Rate, Tangent Derivative, Derivative Account, Function Derivative Applications of Derivative Account Integral Account, Definite and Indefinite Integral The Basic Theory of Analysis Applications of Integral Account Infinite Series, Taylor-Series, Fourier-Series Prerequisites and co-requisities:

Course Coordinator:

Name of Lecturers:

Asist Prof.Dr. Canan Yıldız Assistants:

Research Assist. Ozan SubaşıResearch Assist. Süleyman Şişman

Recommended or Required Reading

-

Resources

Calculus: A Complete Course, Robert A. Adams,C Essex 7th Edition,Addison Wesley Longman Toronto 2010,Thomas' Calculus, 12th Edition, G.B Thomas, M.D.Weir, J.Has: Thomas' Calculus, 12th Edition, G.B Thomas, M.D.Weir, J.Hass and F.R.Giordano, Addison-Wesley, 2012

Course Category			
Mathmatics and Basic Sciences	: 100	Education	:
Engineering	:	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Week	Topics	Study Materials	Materials
1	Functions:Functions and their graphs, Trigonometric functions		Thomas' Calculus, 12th Edition, G.B Tho
2	Limits and ContiunityRates of Change and Tangents to Curves, Limit of a Function and Limit Laws, The Sandwich	(The Squ -	Thomas' Calculus, 12th Edition, G.B Tho
3	Differentiation:Tangents ,Normal Lines , The Derivative at a Point, The Derivate as a Function, I	ifferential-	Thomas' Calculus, 12th Edition, G.B Tho
4	Derivatives of Trigonometric Fnctions, The chain rule, Implicit Differentiation, Linearization and Differentials	-	Thomas' Calculus, 12th Edition, G.B Tho
5	Applications of derivatives: Extrem Values of Functions, Critical Points, Rolle's Theorem, The Mean Value Theorem		Thomas' Calculus, 12th Edition, G.B Tho
5	Concavity and Curve Sketching, The Second Derivative Test for Concavity, Point of Inflection The Second Derivative	ve Test fc-	Thomas' Calculus, 12th Edition, G.B Tho
7	Integration: Area and Estimating with Finite Sums, Average Value of Nonnegative Continuous Functions, Sigma No	otation an -	Thomas' Calculus, 12th Edition, G.B Tho
8	(Quizexam) Mean Value Theorem fo Definite Integrals, The Fundamental Theorem of Calculus: Fundamental The	orem Part -	Thomas' Calculus, 12th Edition, G.B Tho

No	Learning Outcomes						
C01	Understands the basic concepts of analysis: - The definition of the derivative as the "rate of change" and the limit of the ratio of the differences calculation, - Definition of the integral as infinite "To You can analyze the properties and behaviors of the functions and the function graph (asymptotes, critical points, with the help of derivative tests for slope and curvature).						
C02	You can analyze the properties and behaviors of the functions and the function graph (asymptotes, critical points, with the help of derivative tests for slope and curvature).						
C03	Line derivative account can be used to solve problems in the field of application (ed. Uptimization, linked rates).						
C04	Integral calculation of curve length, volume and area calculation and application area can be used to solve other problems.						
C05	Certain and indefinite Integrals can be solved using various integration methods.						
C06	He can examine convergence behavior of improper integrals, convergent has non-integrals.						
C07	One can detect convergence / divergence of infinite series						
C08	One can calculate Taylor expansion around a point for a function.						
Program I	Program Learning Outcomes						
No	Learning Outcome						

P08	Awareness of the necessity of lifelong learning; ability to access information, to follow developments in science and technology and to renew himself continuously.
P07	Ability to communicate effectively in verbal and written Turkish; knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, mal
P09	To act in accordance with ethical principles, professional and ethical responsibility; Information on the standards used in engineering applications.
P11	Knowledge of the effects of engineering practices on health, environment and safety in the universal and social dimensions and the problems of the era in engineering; awareness of the legal conse
P10	Information on business practices such as project management, risk management and change management; awareness of entrepreneurship and innovation; information about sustainable developm
P06	Ability to work effectively in disciplinary and multi-disciplinary teams; individual study skills.
P02	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply appropriate analysis and modeling methods for this purpose.
P01	Adequate knowledge in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; ability to apply modern design methods for this purpose.
P05	An ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering problems or disciplinary research topics.
P04	Ability to develop, select and use modern techniques and tools for the analysis and solution of complex problems encountered in engineering applications; ability to use information technologies effe

Assessment Methods and Criteria			ECTS Allocated Base
In-Term Studies	Quantity	Percentage	Activities
Mid-terms	1	%30	Course Duration
Quizzes	0	%0	Hours for off-the-c.r.s
Assignment	0	%0	Assignments
Attendance	0	%0	Presentation
Practice	14	%30	Mid-terms
Project	0	%0	Practice
Final examination	1	%40	Laboratory
Total		%100	Project
			Final examination
			Total Work Load
			ECTS Credit of the C
Contribution of Learning Outcomes to Prog	gramme Outcomes		
bbb			

Activities	Quantity	Duration	Total Work Load
Course Duration	14	3	42
Hours for off-the-c.r.stud	14	2	28
Assignments	0	0	C
Presentation	0	0	C
Mid-terms	1	3	3
Practice	14	2	28
Laboratory	0	0	C
Project	0	0	C
Final examination	1	3	3
Total Work Load			104
ECTS Credit of the Course			3

											_
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	
All	5	5	5	5	5	5	5	5	5	5	



Faculty of Engineering Mechanical Engineering (German)

MAT201	Differantial E	quaitons			
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	MAT201	Differantial Equaitons	4	5	6

Mode of Delivery: Face to Face Language of Instruction: Deutch Level of Course Unit: Bachelor's Degree
Work Placement(s): No Department / Program: Mechanical Engineering (German) Type of Course Unit: Required **Objectives of the Course:**

The students should • understand the essential mathematical concepts of differential equations • have the methodical foundations for the mathematical foundation of natural and engineering sciences, • have a sound knowledge of scientific and mathematical content, principles and methods, • Master basic concepts and techniques and apply them to various (physical) problems. Knowledge & Understanding: 70% Analysis & Methodology: 30% Teaching Methods and Techniques:

• Differential equations 1st order • Linear differential equations of 2nd order, in particular with constant coefficients • Separation solutions • Integrating factor • indefinite coefficients and variation of the constants, • sinusoidal and exponential disturbance functions, • Nonlinear autonomous systems, critical points and phase diagrams • existence and uniqueness, stability • modeling • Numerical and graphical solution methods • systems of linear differential equations; Eigenvalues, eigenvectors, fundamental matrices • Laplace transformation, solution of the linear differential equations with Laplace transformation • Delta function, convolution.

Prerequisites and co-requisities:

Course Coordinator:

Name of Lecturers: Asist Prof.Dr. Mehmet Gökhan Gökçen Assistants:

Research Assist. Sefer Arda SerbesResearch Assist. Uğur Yıldırım

Recommended or Required Reading P. Furlan, Das Gelbe Rechenbuch 3 Skriptum "Integraltransformationen und partielle Differentialgleichungen für Ingenieure", Prof. Dr. Dirk Ferus https://drive.google.com/drive/folders/0B0yLQsBqSm-9R3h5SmFhb3pHMEk Resources

https://drive.google.com/drive/folders/080yLQsBqSm-9R3h5SmFhb3pHMEk https://drive.google.com/drive/folders/080yLQsBqSm-9R3h5SmFhb3pHMEk

Course Category				
Mathmatics and Basic Sciences	: 100	Education	•	
Engineering	:	Science	:	
Engineering Design	:	Health	:	
Social Sciences	:	Field	:	

Week	Topics	Study Materials	Materials
1			
2	1. order DE		
3	2. Order, const. coeff. LDE		
1	Separation of variables		
5	Integrating factor		
5	undetermined coeff and variation of constantsUnbestimmte Koeffizienten und Variation der Konstanten		
7	Sine and exponantial forcing functions		
3	Nonlinear Autonomous Systems, Critical Points and Phase Diagrams		
)	Existence and uniqueness, stability		
.0			
1	Numerical and graphical solutions		
.2	System of LDEs		
3	Eigenvalues, eigenvectors, fundamental matrices		
l4	Laplace transformation, solution of the linear differential equations with Laplace transformation		

INO	Learning Outcomes					
C01	Model a simple, physical system in the form of a first-degree DE.					
C02	To test the plausibility of a solution of a DE (analyzing extreme cases, graphic analysis, reality check, control of units).					
C03	visualize solutions of a DE using directional fields and approximate them using the Eulerian method.					
C04	Find and classify critical points of an autonomous DE, and describe with them the gualitative behavior of the solutions.					
C05	Know basic types of DEs and use them to model exponential growth / decay, spring-mass systems, LRC circles, etc.					
C06	Solve DEs with different interfering functions (zero, constant, exponential, sinusoidal, step function, impulse, superpositions of these).					
C07	Understand and use the following properties of linear systems: Solution, Stability, Transient, Steady State, Phase Response, Amplitude Response, Amplitude Phase Shape, Weight and Transfer Func					
C08	Use the following techniques to solve DEs: characteristic equation, exponential response formula, laplace transformation, convolution integral, Fourier series, complex arithmetic, parameter variation					
C09	Know the basic concepts of linearity, superposition, existence, and uniqueness of solutions and use them to solve DEs.					
Program	Program Learning Outcomes					

No	Learning Outcome
P08	Awareness of the necessity of lifelong learning; ability to access information, to follow developments in science and technology and to renew himself continuously.
P07	Ability to communicate effectively in verbal and written Turkish; knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, mal
P09	To act in accordance with ethical principles, professional and ethical responsibility; Information on the standards used in engineering applications.
P11	Knowledge of the effects of engineering practices on health, environment and safety in the universal and social dimensions and the problems of the era in engineering; awareness of the legal conse
P10	Information on business practices such as project management, risk management and change management; awareness of entrepreneurship and innovation; information about sustainable developm
P06	Ability to work effectively in disciplinary and multi-disciplinary teams; individual study skills.
P02	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply appropriate analysis and modeling methods for this purpose. Adequate knowledge in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems.
P01	Adequate knowledge in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems.
P03	Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; ability to apply modern design methods for this purpose.
P05	An ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering problems or disciplinary research topics.
P04	Ability to develop, select and use modern techniques and tools for the analysis and solution of complex problems encountered in engineering applications; ability to use information technologies effe

In-Term Studies	Quantity	Percentage
Mid-terms	1	%30
Quizzes	0	%0
Assignment	1	%10
Attendance	0	%0
Practice	1	%10
Project	0	%0
Final examination	1	%50
Total		%100

ECTS Allocated Based on Student W	orkload		
Activities	Quantity	Duration	Total Work Load
Course Duration	28	1	28
Hours for off-the-c.r.stud	86	1	86
Assignments	1	8	8
Presentation	0	0	0
Mid-terms	1	2	2
Practice	28	1	28
Laboratory	14	1	14
Project	0	0	0
Final examination	1	2	2
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes

000										
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10
All	5	5	5	5	5	5	5	5	5	5
C01	5									
C02	5									
C03	5									
C04	5									
C05	5									
C06	5									
C07	5									
C08	5									
C09	5									
	-		-				-			



Faculty of Engineering Mechanical Engineering (German)

MEC107	Design Meth	ods I: Technical Drawing and CAD			
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	MEC107	Design Methods I: Technical Drawing and CAD	3	4	6

Mode of Delivery: Face to Face Language of Instruction: Deutch

Level of Course Unit: Bachelor's Degree Work Placement(s):

No

Department / Program: Mechanical Engineering (German) Type of Course Unit:

Required

Objectives of the Course:

Information students will receive: • Technical Drawing Principles as Design and Manufacturing Information Source • Parts Creation and Sizing • Three Dimensional Computer Aided Design Introduction • Introduction to Design Hierarchy and Design Methodology in Production Process • Methodical Approach and Process in Creating Simple Parts • Tolerance and Compliance The skills to be acquired by the students: • Basic Skill about the Implementation of the Engineering Approach Format and the Working Techniques in Creating Simple Designs • Ability to create Design Drawings Independently Based on Given Boundary Conditions Competencies: • Competence about the solution and analysis of a simple technical problem Subject Adequacy: 40% Method Adequacy: 30% System Adequacy: 20% Social Qualification: 10% Teaching Methods and Techniques:

Lecture: • Technical Drawing Principles as Design and Manufacturing Information Source • Parts Creation and Sizing • Introduction to Design Hierarchy and Design Methodology in Production Process (Construction Process and Production Modularization) • Introduction to Standard / Norm Information • Tolerance Applications: • Manually Creating Technical Drawings of Given Bodies Considering Boundary and Connection Conditions • Modeling with 3D Computer Aided Design Environment Laboratory: • Detailed Design with All Required Drawings • Modeling with 3D Computer Aided Design Environment

Prerequisites and co-requisities:

Course Coordinator:

Name of Lecturers: Asist Prof.Dr. Mete BUDAKLI Assistants:

Ismail KÜLCÜResearch Assist, Ahmet Ugur BATUKResearch Assist, Süleyman SISMANResearch Assist, Sefer Arda SERBES

Resources D.C. Planchard ve M.P. Planchard, Engineering Design with SolidWorks 2014 and Video • Schlecht, Berthold: Maschinenelemente 1. Pearson Studium, • Schlecht, Berthold: Maschinenelemente 1. Pearson Studium, • München, 2007 • DIN-Normen; & Quot; Tabellenbuch Metall & quot ;, Europa-Verlag 2014 • Course notes are available in electronic environment. Drawing tools, Autodesk Inventor Course Category Mathmatics and Basic Sciences : 0	Recommended or Required Readir	ıg					
München, 2007 DIN-Normen; & Quot; Tabellenbuch Metall & quot ;, Europa-Verlag 2014 Course notes are available in electronic environment. Drawing tools, Autodesk Inventor Course Category	Resources	D.C. Planchard ve M.P. Pla	nchard, Engineering Design	with SolidWorks 2014 and V	/ideo		
		• München, 2007 • DIN-Normen; & Quot; Ta	bellenbuch Metall & quot ;,	Europa-Verlag 2014	iventor		
Mathmatics and Basic Sciences : 0 Education : 0	Course Category						
Engineering 10 Engineering 10							

Engineering Design : 80 Health : 0 Social Sciences : 0 Field : 0	Mathmatics and Basic Sciences Engineering	: 0 : 10	Education Science	: 0 : 0	
	Engineering Design Social Sciences	: 80 : 0	Health Field	: 0 : 0	

eek	Topics	Study Materials	Materials
	Introduction to Design Methods		
	Product Design Process		
	Principles of Methodical Design		
	Introduction to Design Process with Autodesk Inventor IIntroduction to Design Process with Autodesk Inventor II		
	Introduction to Design Process with Autodesk Inventor III		
	Introduction to Design Process with Autodesk Inventor IV		
	Technical drawing		
	Creating Assembly Design with Autodesk Inventor ICreating Assembly Design with Autodesk Inventor II		
	Standards / Norms		
	Creating Assembly Design with Autodesk Inventor IIICreating Assembly Design with Autodesk Inventor IV		
	Computer Aided Design Introduction and Design IComputer Aided Design Introduction and Design II		
	Computer Aided Design Introduction and Design IIIComputer Aided Design Introduction and Design IV		

	To acquire sufficient knowledge about mathematics, science and mechanical engineering and to apply the theoretical and practical knowledge in these fields to model and solve engineering problem
C01	To acquire sufficient knowledge about matternatics, science and mechanical engineering and to apply the theoretical and practical knowledge in diese news to model and solve engineering problem
C03	Ability to identify, define, formulate and solve complex engineering problems, and to select and apply appropriate analysis and modeling methods in mechanical engineering for this purpose. Experiment design, experimentation, data collection, analysis and interpretation of results for engineering problems.
C04	Understanding of two-dimensional views of 3D objects (conjugate projection, auxiliary and cross-section) in terms of vertical projection
C05 C06	Dimensioning of 2D technical drawings and recognition of tolerances Understanding technical drawing standards and practices appoiled in the industry
Program Lea	rning Outcomes
No	Learning Outcome
P08	Awareness of the necessity of lifelong learning; ability to access information, to follow developments in science and technology and to renew himself continuously. Ability to communicate effectively in verbal and written Turkish: knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, make

Ability to communicate effectively in verbal and written Turkish; knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, mail To act in accordance with ethical principles, professional and ethical responsibility. Information on the standards used in engineering applications. Knowledge of the effects of engineering practices con health, environment and safety in the universal and social dimensions and the problems of the era in engineering; awareness of the legal conse Information on business practices such as project management, risk management, and adapted management; awareness of entrepreneurship and innovation; information about sustainable developn Ability to work effectively in disciplinary and multi-disciplinary teams; individual study skills. Ability to identify, formulate, and solve complex engineering problems; ability to select and apply appropriate analysis and modeling methods for this purpose. Adequate knowledge in mathematics, science and related engineering scipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems. Ability to design, a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; ability to apply modern design methods for this purpose. An ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering gradients of the study of complex engineering and thools for this purpose. Ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering applications; ability to use information technologies efficiency to design, containts and use modern technologies and tools for the analysis and solution of complex problems encountered in engineering applications; ability to use information technologies efficiency in the specific requirement results for the study of complex engineering problems o P09 P11 P10 P06 P02 P01 P03 P05 P04

		ECTS Alloca
Quantity	Percentage	Activities
1	%40	Course Durat
0	%0	Hours for off
0	%0	Assignments
0	%0	Presentation
0	%0	Mid-terms
0	%0	Practice
1	%60	Laboratory
	%100	Project
		Final examina
		Total Work
		ECTS Credit
ne Outcomes		
		1 %40 0 %0 0 %0 0 %0 0 %0 0 %0 0 %0 1 %60 %100

Activities	Quantity	Duration	Total Work Load
Course Duration	14	45	630
Hours for off-the-c.r.stud	84	45	3780
Assignments	0	0	0
Presentation	0	0	0
Mid-terms	1	80	80
Practice	28	45	1260
Laboratory	14	45	630
Project	0	0	0
Final examination	1	120	120
Total Work Load			6500
ECTS Credit of the Course			217

000	, 										
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	
All	5	5	5	5	5	5	5	5	5	5	



Faculty of Engineering Mechanical Engineering (German)

	Statics						
Semester	Course Unit Code	Course Unit Title			L+P	Credit	Number of ECTS Credits
	MEC109	Statics			5	5	6
lode of Delivery: ace to Face							
anguage of Instruc	ction:						
eutch e vel of Course Uni	÷-						
achelor's Degree							
/ork Placement(s)	:						
epartment / Progi							
echanical Engineeri ype of Course Unit							
equired							
bjectives of the Co Indamental Static L							
eaching Methods a	and Techniques:						
			e formulas of the static systems. S w to calculate the internal forces o				
the light of this ec	ducation, students become		ubjects of technical mechanic and				at the very userul in proceed
erequisites and c	o-requisities:						
ourse Coordinator	:						
ame of Lecturers:							
of Dr. rer. nat. Wo ssistants:	olfgang MULLER						
esearch Assist. Feril	t Yardımcı						
ecommended or R	equired Reading						
	Russell	g H. Müller, Ferdinand Ferber, Techr 2. Hibbeler: Technische Mechanik/2 -	nische Mechanik für Ingenieure, 4. A - Festigkeitslehre 8. aktualisierte Auf	uflage, Hanser Verlag / Fa . München: Pearson Stud	chbuch Verla um 2013 (in	ag Leipzig.	eii C. Hiddeier: Technische Mer
	Russell C Martin M	g H. Müller, Ferdinand Ferber, Techr C. Hibbeler: Technische Mechanik/2 - layr: Technische Mechanik. Übungsb	nische Mechanik für Ingenieure, 4. A	uflage, Hanser Verlag / Fa . München: Pearson Stud Auflage. München: Hans	chbuch Verl um 2013 (in er 2000.	ag Leipzig. sges. 3 Bände).	21 C. Hiddeler: Technische Mec
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ssessment Methods and Criteria			ECTS A
n-Term Studies	Quantity	Percentage	Activiti
/lid-terms	2	%40	Course [
Quizzes	0	%0	Hours fo
Assignment	0	%0	Assignm
Attendance	0	%0	Presenta
Practice	0	%0	Mid-term
Project	0	%0	Practice
inal examination	1	%60	Laborato
Total		%100	Project
			Final exa
			Total W
			ECTS Cr

ECTS Allocated Based on Student Workload							
Activities	Quantity	Duration	Total Work Load				
Course Duration	1	70	70				
Hours for off-the-c.r.stud	1	70	70				
Assignments	0	0	0				
Presentation	0	0	0				
Mid-terms	1	7	7				
Practice	0	0	0				
Laboratory	0	0	0				
Project	0	0	0				
Final examination	1	21	21				
Total Work Load			168				
ECTS Credit of the Course			6				

												_
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	
C01	1	5	5	1	1	1	1	1	1	1	1	



Faculty of Engineering Mechanical Engineering (German)

MEC207					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	MEC207	Material Technology	3	3	6

Mode of Delivery: Face to Face Language of Instruction: Deutch Level of Course Unit: Bachelor's Degree Work Placement(s): No Department / Program: Mechanical Engineering (German) Type of Course Unit: Required

Objectives of the Course:

Materials science knowledge • View of the fundamentals and diverse fields of activity of materials science • Structure-property relationships of materials • Know and differentiate engineering materials • Learn material properties as the basis of material selection • Learn mechanical test methods as test methods Professional competence: 40%, methodological competence: 30%, system competence: 20%, social skills: 10% Teaching Methods and Techniques:

• Introduction • Structure of the atoms and molecules • engineering materials (metals, polymers, ceramics, composites) • crystal structures • Phase diagrams • microstructure • Mechanical, electrical, magnetic and optical properties of the materials • Mechanical test methods • breakage, fatigue, creep, corrosion Prerequisites and co-requisities:

Course Coordinator:

Name of Lecturers: Asist Prof.Dr. Mehmet İpekoğlu

Assistants:

Recommended or Required Reading

Resources

Bargel, H.-J., G. Schulze, "Werkstoffkunde", Springer, 1999. • Bergmann, W.: "Werkstoffkechnik Teil I: Grundlagen", 5. Auflage, Carl Hanser, 2003, • Will be disseminated to the students in digital form

Course Category				
Mathmatics and Basic Sciences	: 10	Education	:	1
Engineering	: 30	Science	:	: 20
Engineering Design	:	Health	:	:
Social Sciences	:	Field	:	: 40

	Topics	Study Materials	Materials
	History of materials science, engineering materials, classification of materials		
	Structure of atoms, atomic bondings, bondings in different materials		
	Crystal structure, unit cells, crystallographic directions and planes, Miller indices		
	Irregularities in crystal structure, 0-1-2 dimensional crystal defects		
	Solid state diffusion		
	Phase diagrams, microstructure		
	Mechanical properties, elasticity, plasticity, viscoelasticity, tensile test		
	Mechnical properties, hardness-strength relation, ductility, brittleness, hardness measuring techniques	5	
	Hardening methods, Jominy end-guench test		
)	Failure of materials under various working conditions, fracture, fatigue, creep, oxidation and corrosion	۱	
	Electrical properties, corrosion prevention methods		
	Magnetic and optic properties		
3	Polymers		
1	Ceramics and composites		
ourse	e Learning Outcomes		
o	Learning Outcomes		
01	Material science knowledge		
2	Material science knowledge View of the fundamentals and diverse fields of activity of materials science Structure-property relationships of materials Know and differentiate materials in engineering Learn material properties as the basis of material selection		
3 4	Structure-property relationships of materials Know and differentiate materials in engineering		
5	Learn material properties as the basis of material selection		
16	Learn mechanical test methods as test methods		

Program Learning Outcomes

No Learning Outcome

Learning Outcome Awareness of the necessity of lifelong learning; ability to access information, to follow developments in science and technology and to renew himself continuously. Ability to communicate effectively in verbal and written Turkish; knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, mai To act in accordance with ethical principles, professional and ethical responsibility; Information on the standards used in engineering applications. Knowledge of the effects of engineering practices on health, environment and safety in the universal and social dimensions and the problems of the era in engineering; awareness of the legal conse Information on business practices such as project management, risk management and change management; awareness of entrepreneurship and innovation; information about sustainable developm Ability to work effectively in disciplinary and multi-disciplinary teams; individual study skills. Ability to work effectively in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems. Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; ability to asign methods for this purpose. An ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering applications; ability to use information technologies effectively to design, and use modern technologies and tools for the analysis and solution of complex problems encountered in engineering applications; ability to use information technologies effectives. Ability to develop, select and use modern techniques and tools for the analysis and solution of complex problems encountered in engineering applications; abi P08 P07 P09 P11 P10 P06 P02 P01 P03 P05 P04

Assessment Methods and Criteria			ECTS Allocated Based on Student Workload
In-Term Studies	Quantity	Percentage	Activities
Mid-terms	1	%30	Course Duration
Quizzes	0	%0	Hours for off-the-c.r.stud
Assignment	1	%10	Assignments
Attendance	0	%0	Presentation
Practice	0	%0	Mid-terms
Project	1	%20	Practice
Final examination	1	%40	Laboratory
Total		%100	Project
			Final examination
			Total Work Load
			ECTS Credit of the Course
Contribution of Learning Outcomes to Programme (Outcomes		
bbb			
P01 P02 P03 P04 P05 P06 P07 P08 P09 P10			
All 5 5 5 5 5 5 5 5 5 5			

Quantity Duration

Total Work Load



Faculty of Engineering Mechanical Engineering (German)

MEC209	Kinematics a	nd Dynamics			
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
3	MEC209	Kinematics and Dynamics	4	5	6

Mode of Delivery: Face to Face Language of Instruction: Deutch Level of Course Unit: Bachelor's Degree Work Placement(s): No Department / Program: Mechanical Engineering (German) Type of Course Unit:

Required

Objectives of the Course:

The following skills should be developed among the students of mechanics: Formation of a basic knowledge in mechanics, which facilitates and promotes the attendance of further courses in the bachelor and master studies. The basic knowledge in mechanics, which is to be taught in the basics, is to secure the professional ability, in order to enable further and new education during the entire professional life. However, the students' skills should not be confined to the theoretical penetration of mechanical problems, but also promote the ability to work through and solve concrete and practical engineering problems. The ability to verify own results and to clearly recognize the application limits of the used models is to be reached as a basis for the technical reliability of the trainee engineers. For this, a deeper understanding of the necessary base material of the mechanics must be achieved. Students are introduced to the basics of modeling. The basic knowledge in mechanics enables the students to recognize analogies to other subject areas and to apply this knowledge there as well.

First half of the semester: Fundamentals of kinematics the terms force, torque, work, power, energy, momentum, angular momentum; Theorem of the second half of the semester: the motion of the rigid body (angular velocity, inertial tensor, fundamental concepts of gyro theory) Theory of vibrations (free and forced vibrations, damping, resonance) Vibrations of systems with two degrees of freedom dynamic stability

Prerequisites and co-requisities:

Course Coordinator

Name of Lecturers:

Prof. Dr. rer. nat. W. H. MÜLLER Assistants:

Recommended or Required Readin	ng	
Resources	Technische Mechanik 3 Kinetik , Autoren: Gross, D., Hauger, W., Schröde Technische Mechanik 3 Kinetik , Autoren: Gross, D., Hauger, W., Schröder, J., Wall, W.A. ISBN 978-3-642-53954-1 ? Skripte in elektronischer Form vorhanden http://mechanik.tuberlin.de/ -	r, J., Wall, W.A. ISBN 978-3-642-53954-1 ? Skripte in elektronischer Form vorhanden http://mec
Course Category		
Mathmatics and Basic Sciences Engineering Engineering Design Social Sciences	: 30 Education : 30 Science : Health : Field	: : : 40

Veek	Topics	Study Materials	Materials
	Fundamentals of kinematics the terms force		
	Torque		
	Work, performance, energy,		
	Power, energy, momentum, angular momentum		
	Set of center of gravity and twist set elastic and not elastic shocks		
	Set of center of gravity and twist set elastic and not elastic shocks		
	The movement of the rigid body (angular velocity, inertial tensor, basic concepts of gyro theory)		
	The movement of the rigid body (angular velocity, inertial tensor, basic concepts of gyro theory)		
	The movement of the rigid body (angular velocity, inertial tensor, basic concepts of gyro theory)		
)	Theory of vibrations (free and forced vibrations, damping, resonance)		
L	Theory of vibrations (free and forced vibrations, damping, resonance)		
2	Theory of vibrations (free and forced vibrations, damping, resonance)		
3	Vibrations of systems with two degrees of freedom dynamic stability		
ł	Vibrations of systems with two degrees of freedom dynamic stability		

No Learning Outcomes Students will be able to gain the ability to mathematically model the problems faced in dynamics and obtain sought solutions with a reasonable approximation. Students will be able to understand basic principles of 2-D motion of systems of particles and rigid bodies. Students will gain the ability to understand the basic principles of vibration analysis and to use them in practice. C01 C02 C03

Program Learning Outcomes

No Learning Outcome Learning Outcome Awareness of the necessity of lifelong learning; ability to access information, to follow developments in science and technology and to renew himself continuously. Ability to communicate effectively in verbal and written Turkish; knowledge of at least one foreign language; writing active reports and writing reports, preparing design and production reports, mai To act in accordance with ethical principles, professional and ethical responsibility; Information on the standards used in engineering applications. Knowledge of the effects of engineering practices on health, environment and safety in the universal and social dimensions and the problems of the era in engineering; awareness of the legal conse Information on business practices such as project management, risk management and change management; awareness of entrepreneurship and innovation; information about sustainable developm Ability to work effectively in disciplinary and multi-disciplinary teams; individual study skills. Ability to work effectively in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in mathematics, science and related engineering discipline; the ability to use theoretical and practical knowledge in these areas in complex engineering problems. Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions; ability to asign methods for this purpose. An ability to design, conduct experiments, collect data, analyze and interpret results for the study of complex engineering applications; ability to use information technologies effectively to design, and use modern technologies and tools for the analysis and solution of complex problems encountered in engineering applications; ability to use information technologies effectives. Ability to develop, select and use modern techniques and tools for the analysis and solution of complex problems encountered in engineering applications; abi P08 P07 P09 P11 P10 P06 P02 P01 P03 P03 P05 P04

		ECTS Allocat
Quantity	Percentage	Activities
1	%50	Course Duration
0	%0	Hours for off-t
0	%0	Assignments
0	%0	Presentation
0	%0	Mid-terms
0	%0	Practice
1	%50	Laboratory
	%100	Project
		Final examinat
		Total Work L
		ECTS Credit
Outcomes		
		1 %50 0 %0 0 %0 0 %0 0 %0 0 %0 0 %0 1 %50 1 %50 %100

Activities	Quantity	Duration	Total Work Load
Course Duration	28	2	56
Hours for off-the-c.r.stud	0	0	0
Assignments	4	7	28
Presentation	0	0	0
Mid-terms	1	7	7
Practice	28	2	56
Laboratory	14	1	14
Project	0	0	0
Final examination	1	7	7
Total Work Load			168
ECTS Credit of the Course			6

Contribution of Learning Outcomes to Programme Outcomes	
bbb	

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11
Al	5	5	5	5	5	5	5	5	5	5	5